FAA
AJV-2

Federal NOTAM System Airport Operations Scenarios

Including AIXM 5.1 Sample Messages

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1 Introduction

1.1 Introduction to the Federal NOTAMs System (FNS)

The distribution of aeronautical information in an accurate and timely manner is essential to the safety of the National Airspace System (NAS). Aeronautical information encompasses many aspects of the NAS, but the focus with respect to this document is on the origination, storage, and distribution of Notices to Airmen (NOTAM). NOTAMs communicate temporary changes to components of, or hazards in, the NAS. The current NOTAM system is a compilation of many processes and systems, developed over many years, with significant overlap of function. Today's NOTAM system is deficient for both NOTAM originators and NOTAM recipients. Currently, most NOTAMs are reported by verbal, fax, or electronic communication with a flight service station (FSS) specialist. The FSS specialist will then type the NOTAM and submit it to the United States NOTAM System (USNS) for storage and dissemination. This process is slow, cumbersome, and contains errors approximately 40% of the time. Currently, NOTAMs are based largely on free text which limits the ability to sort through each NOTAM to filter only those that are applicable.

The Federal NOTAM System (FNS) is the new NOTAM management system designed to digitize the collection, dissemination, and storage of NOTAMs. The goal is to create a single authoritative source for NOTAM entry and dissemination improving efficiency, safety, and data quality. The concept behind the FNS is to have the originator of a NOTAM, such as an airport, generate and submit the NOTAM using a web-based standard NOTAM template. The inputs from the standard template will be validated against policy-driven business rules and immediately published and available to airmen for review. Also, by adhering to a digital format, these NOTAMs will be in a computer readable format such that air traffic control and flight planning around the world can easily sort through the NOTAMs finding only those that are relevant to their operations.

1.2 Introduction to the Aeronautical Information Exchange Model (AIXM version 5.1)

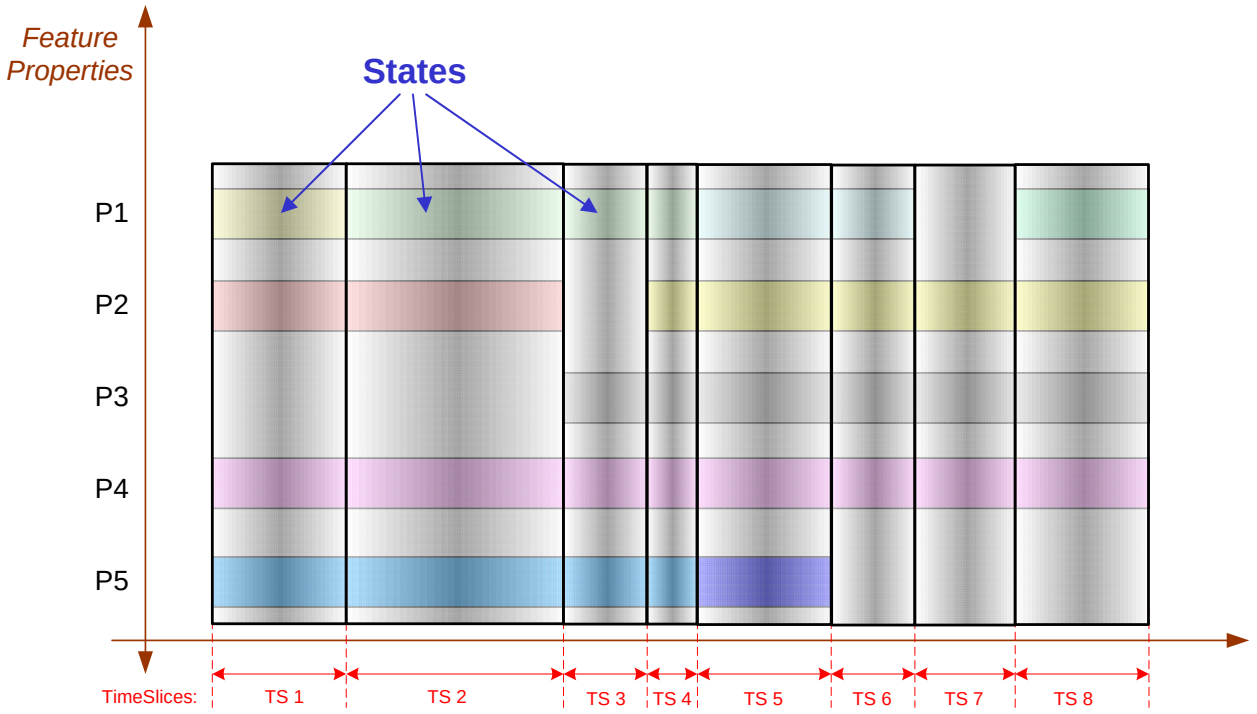
The Aeronautical Information Exchange Model (AIXM) is designed for the management and distribution of Aeronautical Information Services (AIS) data through the use of a common exchange model in digital format. The current version, 5.1, of AIXM uses existing and emerging information engineering standards. AIXM 5.1 contains an extensive temporality model, including support for the temporary information contained within a NOTAM. AIXM 5.1 is also aligned with International Organization for Standardization (ISO) standards for geospatial information, including the use of Geography Markup Language (GML). More information about AIXM can be found at the website: www.aixm.aero. The primary benefit in using AIXM is that by using a common exchange model, systems can achieve neutrality against applications and local views of data.

AIXM has two main components: the AIXM Conceptual Model and the AIXM Extensible Markup Language (XML) Schema. The AIXM Conceptual Model describes the features and properties in the aeronautical domain using the Unified Modeling Language (UML). The Conceptual Model is composed of Features, Objects, Attributes, and Relationships between features and objects. The AIXM XML Schema is an exchange model for aeronautical information data and is an implementation of the Conceptual Model as an XML schema.

1.3 Digital NOTAMs and AIXM version 5.1

A digital NOTAM is a dataset that contains NOTAM information in a structured format and can be fully interpreted by an automated system without human intervention. The concept of the digital NOTAM is based on the temporality rules of AIXM 5.1. NOTAMs communicate temporary changes to the NAS and AIXM can capture these dynamic changes through the use of timeslices. A pictoral representation of the temporality model is shown below. In this case, a feature has five distinct properties, which can vary independently over time. For each property changes, there is a new timeslice associated with the feature.

Figure 1



from Archive at aixm.aero

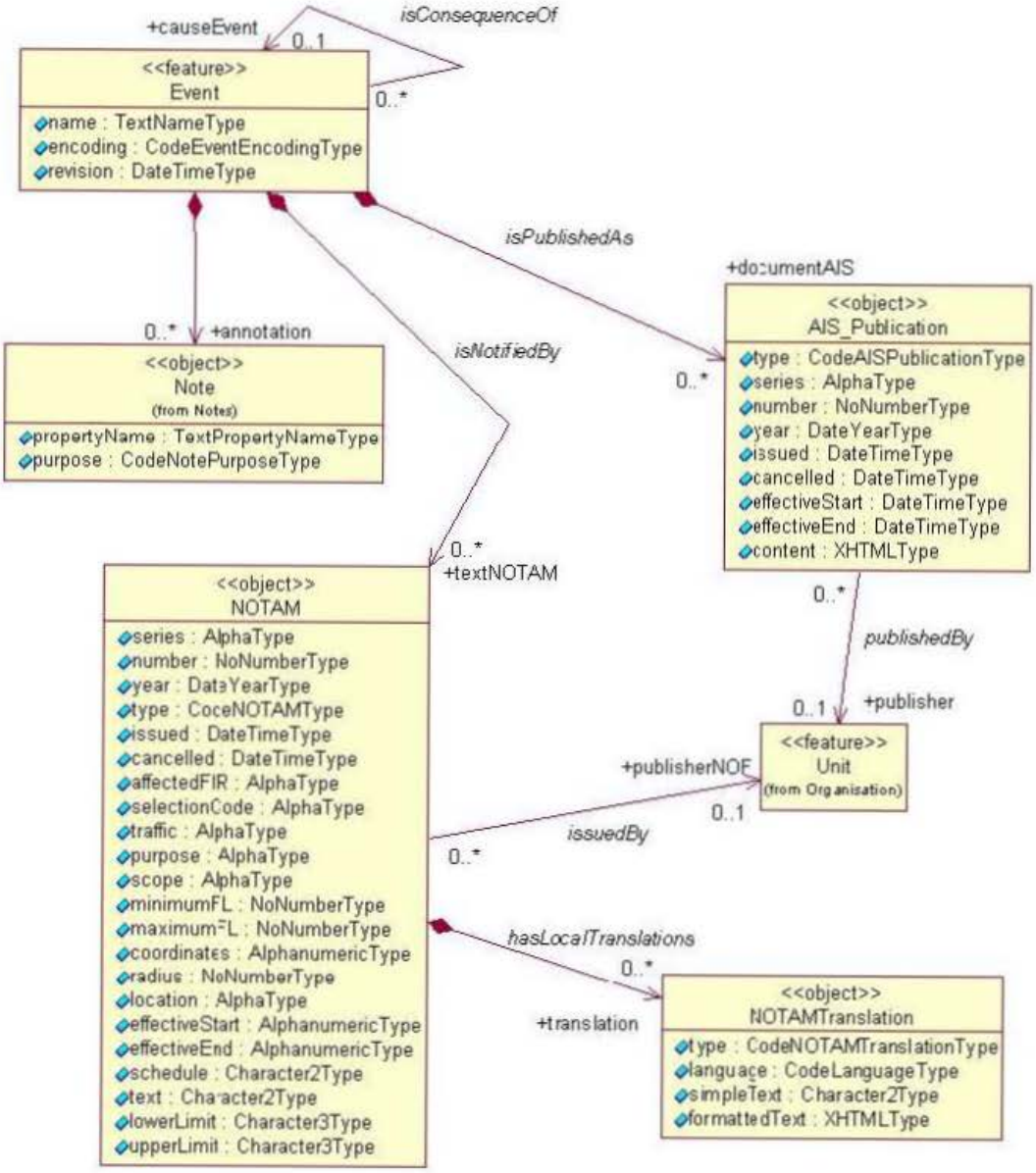
Most Digital NOTAM encodings will be captured as a timeslice of type TEMPDELTA. For example, a runway closure will be encoded as a new timeslice of type TEMPDELTA with the operationalStatus set to UNSERVICEABLE. Because of the structure of the model, a pre-requisite for any digital NOTAM is the availability of the corresponding static data on which the NOTAM information is based.

1.4 AIXM Event Schema for Digital NOTAM Messages

An AIXM application schema for creating the digital NOTAM messages is currently being developed as a collaborative effort between Eurocontrol, FAA, and stakeholders. Messages can be composed of any number of specified features and objects and is used to convey the digital NOTAM information between systems.

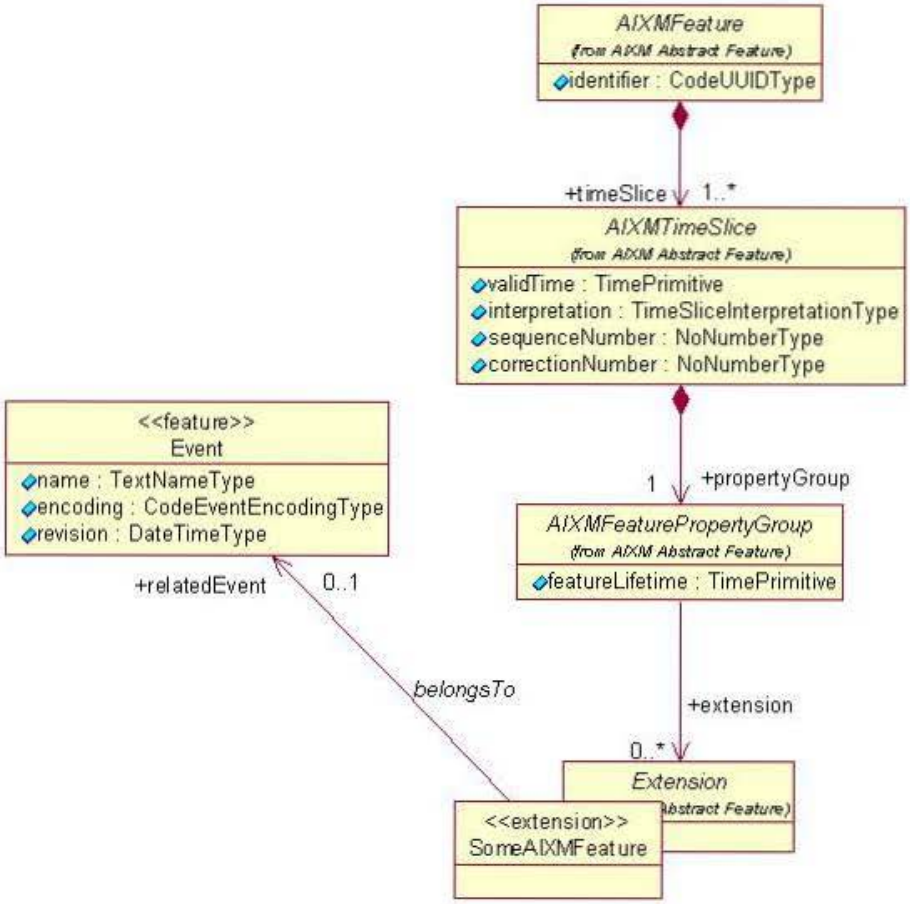
The UML model that defines the structure of the digital NOTAM message is shown in the diagram below. This schema also includes the options of updating other aeronautical information such as information published as AIP Supplements, AIP Amendments or AIC.
Changes to the model are available in the AIXM work area (http://www.aixm.aero/workarea). The model shown below is the most recent version, as of December 20, 2010.

Figure 2


+causeEvent
0..1
isConsequenceOf
0..*
<<feature>>
Event
name : TextNameType
encoding : CodeEventEncodingType
revision : DateTimeType
isPublishedAs
+documentAIS
<<object>>
AIS_Publication
type : CodeAISPublicationType
series : AlphaType
number : NoNumberType
year : DateYearType
issued : DateTimeType
cancelled : DateTimeType
effectiveStart : DateTimeType
effectiveEnd : DateTimeType
content : XHTMLType
0..*
+annotation
<<object>>
Note
(from Notes)
propertyName : TextPropertyNameType
purpose : CodeNotePurposeType
isNotifiedBy
0..*
0..*
+textNOTAM
<<object>>
NOTAM
series : AlphaType
number : NoNumberType
year : DateYearType
type : CodeNOTAMType
issued : DateTimeType
cancelled : DateTimeType
affectedFIR : AlphaType
selectionCode : AlphaType
traffic : AlphaType
purpose : AlphaType
scope : AlphaType
minimumFL : NoNumberType
maximumFL : NoNumberType
coordinates : AlphanumericType
radius : NoNumberType
location : AlphaType
effectiveStart : AlphanumericType
effectiveEnd : AlphanumericType
schedule : Character2Type
text : Character2Type
lowerLimit : Character3Type
upperLimit : Character3Type
0..*
publishedBy
0..1
+publisher
<<feature>>
Unit
(from Organisation)
+publisherNOF
0..1
issuedBy
0..*
hasLocalTranslations
0..*
+translation
<<object>>
NOTAMTranslation
type : CodeNOTAMTranslationType
language : CodeLanguageType
simpleText : Character2Type
formattedText : XHTMLType

Where the feature is related to the event by the following schema:

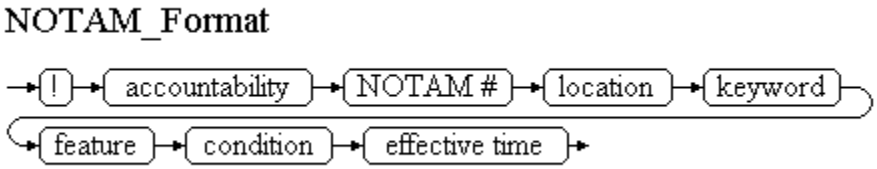
Figure 3



1.5 Purpose of Event Scenarios

The scenarios detailed in the chapters below describe the NOTAM condition that can be originated as the responsibility of Airport Operations Personnel. Each event scenario is linked to a feature from the baseline data. The purpose of this documentation is to capture the rules that are specific to each category of Airport Originated NOTAM. This includes capturing the digital translations of each piece of the required NOTAM information, defining the applicable business rules (template, policy, and digital encoding) and providing the translation from AIXM to supported text formats: FAA Legacy, ICAO, and Plain Text.

The general format of a D-NOTAM distributed by the FAA is shown below followed by two real examples of distributed NOTAMs:



EXAMPLES-

!SEA 06/151 S93 RWY RWY 7/25 CLSD WEF 0804260400-0804260800

!DCA 07/211 DCA RWY RWY 19 REIL OTS WEF 0901251400-0901260100

1.6 Scope

The scenarios contained in this document include NOTAM conditions that are commonly reported by Airport Ops. There are some scenarios documented, for which Airport Ops can only report if they own and maintain the equipment (ex.: PAPI/VASI) or with the Control Tower (Runways Alternately Closed for Snow/Ice Removal). The NOTAM entry system for creating digital NOTAMs requires the definition of several key components that are described below in the order that they will appear in the NOTAM scenario documentation.

First, the NOTAM condition is identified with a short description followed by a flow diagram that depicts the required format of the reported NOTAM. The information provided in these flow diagrams covers the information provided in the keyword, feature, and condition segments of the schema above. The flowchart for each scenario does not include the accountability, NOTAM number, or location identifier that would precede the NOTAM scenario. The flowcharts also do not depict the effective time for each NOTAM scenario. Because every NOTAM must have this information it is assumed that this information is present and is not shown in the figures to avoid redundancy. The ordering of the information elements contained in the flow diagram for each scenario is dictated first by policy and then by subject matter experts review and a review of historical NOTAMs. The documentation also provides a short sampling of historical NOTAMs that fall into the condition category.

The next section contains the information for mapping the identified NOTAM condition into AIXM 5.1 digital format. In this section, information is provided for the transformation of each element of the NOTAM into AIXM 5.1 compliant digital format. Objects that are required for FAA issued NOTAMs that do not currently have a representation in AIXM 5.1 are highlighted in blue. This identifies the extensions created in the UML Model to accommodate this information in a digital format. Additionally, this section provides a translation of the information contained in the digital format to FAA, ICAO and Plain Text. The FAA and ICAO translations will have the standardized and approved

NOTAM contractions, if applicable, where as the Plain Text will provide the plain language translation. When mapping the digital NOTAM into ICAO format, a QCode for the condition must be provided. The QCode and Series are identified in the following section and are generally linked to the status of the NOTAM condition, although there are exceptions. This information is provided such that the NOTAM entry system will be able to translate the NOTAM format from digital to FAA, ICAO, plain text and graphical formats.

Business rules (template, policy, and data encoding) are also determined for each NOTAM scenario to guarantee that the NOTAM created by FNS conforms to current FAA policy. The template business rules specify the rules associated with what information is required in the template and which information is optional and conforms to the flow diagram provided at the beginning of the individual scenario. Policy business rules are provided, if applicable, and identify the policies that dictate the issuance of NOTAMs specific to those conditions. Additionally, encoding business rules for creating the AIXM 5.1 digital message are provided. A sample AIXM 5.1 compliant digital message is provided for each NOTAM condition scenario, along with the identified extensions.

Lastly, translation templates to FAA, ICAO, and Plain Language are provided using the digital data elements defined in the documentation. Additional analysis and solutions to potential policy related issues are presented when needed.

1.7 References

The relevant documentation used for this analysis includes:

- Order JO 7930.2M, Notices to Airmen (NOTAM)
- Order JO 7930.2M CHG 1, Notices to Airmen (NOTAM)
- Advisory Circular, 150/5200-28D, NOTAMs for Airport Operations
- Advisory Circular, 150/5200-30C, Airport Winter Safety and Operations
- Order JO 7340.2A, Contractions
- CFR 14 Part 139, Certification of Airports
- Aeronautical Information Manual, Official Guide to Basic Flight Information and ATC Procedures (Change 1 2008)
- International Civil Aviation Organization (ICAO) Doc 8126 Aeronautical Information Services Manual (Sixth Edition 2003)
- ICAO Annex 15 to the Convention on International Civil Aviation, Aeronautical Information Services (Thirteeth Edition 2010)
- ICAO Doc 8400 Procedures for Air Navigation Services, ICAO Abbreviations and Codes (Seventh Edition 2007)
- EUROCONTROL Guidelines, Operating Procedures for AIS Dynamic Data (OPADD) (Edition 3.0 2009)
- US NOTAMs Repository Database (for examples of current NOTAMs)
- Guidelines for the use of GML in AIXM 5.1 (v 0.1) (2010)
- Proposed practices for the use of XLink and XPointer in AIXM 5.1, AIXM Proposal (v 0.3) (2010)
- Open Geospatial Consortium Inc: Requirements for Aviation Metadata Discussion Paper (Discussion Paper 2010)
- Open Geospatial Consortium Inc: Guidance on the Aviation Metadata Profile (Discussion Paper 2010)
- AIXM 5 Feature Identification and Reference: use of xlink:href and UUID
- AIXM 5.1 Business Rules
- Human Factors Review: Digital NOTAM Manager (version 1.1) (American Institutes for Research)

2 Accountability (in Metadata)

The accountable organization for the NOTAM. This information appears in two locations in the Metadata because, in the concept of operations for FNS, the originator is the same as the point of contact.

2.1 AIXM Mapping and Translation

2.1.1 Scenario Details

TABLE 2.1

Attribute	Value
Description	Accountable Organization
Feature Type Id	Metadata
Feature Xpath	messageMetadata
Standard	ISO 19115

2.1.2 Accountable Organization [*gmd:organisationName*]

Description: The name of the accountable organization for the orignator/point of contact.

Source: Assigned by the user account.

TABLE 2.2
NOTAM Number

Attribute	Value
AIXM Path (UML)	MD_Metadata (feature)/ contact (element)
AIXM Element Xpath	gmd:MD_Metadata/ gmd:contact/ gmd:CI_ResponsibleParty/ gmd:organisationName/ gco:CharacterString
Type	CharacterString
AIXM Path (UML)	MD_Metadata (feature)/ MD_Identification (abstract)/ pointOfContact (element)
AIXM Element Xpath	gmd:MD_Metadata/ gmd:identificationInfo/ gmd:MD-DataIdentification/ gmd:pointOfContact/ gmd:CI_ResponsibleParty/ gmd:organisationName/ gco:CharacterString
Type	CharacterString

2.1.3 Contact Information [*gmd:voice*]

Description: The contact information for the orignator/point of contact.

Source: Assigned by the user account.

TABLE 2.3
NOTAM Number

Attribute	Value
AIXM Path (UML)	MD_Metadata (feature)/ contact (element)
AIXM Element Xpath	gmd:MD_Metadata/ gmd:contact/ gmd:CI_ResponsibleParty/ gmd:contactInfo/ gmd:CI_Contact/ gmd:phone/ gmd:CI_Telephone/ gmd:voice/ gco:CharacterString
Type	CharacterString
AIXM Path (UML)	MD_Metadata (feature)/ MD_Identification (abstract)/ pointOfContact (element)

AIXM Element Xpath	gmd:MD_Metadata/ gmd:identificationInfo/ gmd:MD-DataIdentification/ gmd:pointOfContact/ gmd:CI_ResponsibleParty/ gmd:contactInfo/ gmd:CI_Contact/ gmd:phone/ CI_Telephone/ gmd:voice/ gco:CharacterString
Type	CharacterString

2.1.4 Contact Information [*gmd:voice*]

Description: The contact information for the orignator/point of contact.

Source: Assigned by the user account.

TABLE 2.4
NOTAM Number

Attribute	Value	
AIXM Path (UML)	MD_Metadata (feature)/ contact (element)	
AIXM Element Xpath	gmd:MD_Metadata/ gmd:contact/ gmd:CI_ResponsibleParty/ gmd:role/ gmd:CI_RoleCode [codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode" codeListValue="pointOfContact">pointOfContact</gmd:CI_RoleCode]	
Type	String	
	Defined:	pointOfContact
AIXM Path (UML)	MD_Metadata (feature)/ MD_Identification (abstract)/ pointOfContact (element)	
AIXM Element Xpath	gmd:MD_Metadata/ gmd:identificationInfo/ gmd:MD-DataIdentification/ gmd:role/ gmd:CI_RoleCode [codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode" codeListValue="**originator**">]	
Type	String	
	Defined:	originator

2.2 Sample AIXM Message

```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd "
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1" xmlns:gts="http://www.isotc211.org/2005/gts"
xmlns:srv="http://www.isotc211.org/2005/srv">
<messageMetadata>
  <gmd:MD_Metadata>
    <gmd:contact>
      <gmd:CI_ResponsibleParty>
        <gmd:organisationName>
          <gco:CharacterString>ACY</gco:CharacterString>
        </gmd:organisationName>
        <gmd:contactInfo>
          <gmd:CI_Contact>
            <gmd:phone>
              <gmd:CI_Telephone>
                <gmd:voice>
                  <gco:CharacterString>+12025807400</gco:CharacterString>
                </gmd:voice>
              </gmd:CI_Telephone>
```

```
            </gmd:phone>
          </gmd:CI_Contact>
        </gmd:contactInfo>
        <gmd:role>
          <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="pointOfContact">pointOfContact</gmd:CI_RoleCode>
        </gmd:role>
      </gmd:CI_ResponsibleParty>
    </gmd:contact>
…
    <gmd:identificationInfo>
      <gmd:MD_DataIdentification>
        <gmd:pointOfContact>
          <gmd:CI_ResponsibleParty>
            <gmd:organisationName>
              <gco:CharacterString>ACY</gco:CharacterString>
            </gmd:organisationName>
            <gmd:contactInfo>
              <gmd:CI_Contact>
                <gmd:phone>
                  <gmd:CI_Telephone>
                    <gmd:voice>
                      <gco:CharacterString>+12025807400</gco:CharacterString>
                    </gmd:voice>
                  </gmd:CI_Telephone>
                </gmd:phone>
              </gmd:CI_Contact>
            </gmd:contactInfo>
            <gmd:role>
              <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="originator">originator</gmd:CI_RoleCode>
            </gmd:role>
          </gmd:CI_ResponsibleParty>
        </gmd:pointOfContact>
…
      </gmd:MD_DataIdentification>
    </gmd:identificationInfo>
  </gmd:MD_Metadata>
</messageMetadata>
<notamMessage:hasMember>
…
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

3 NOTAM Information (Number)

The NOTAM number assigned by the USNS.

3.1 AIXM Mapping and Translation

3.1.1 Scenario Details

TABLE 3.1

Attribute	Value
Description	NOTAM Number
Maps to Keyword	AD, APRON, OBST, RWY, TWY, SVC
Feature Type Id	Event
Feature Xpath	aixm:Event
AIXM Mapping Diagrams	AIXM Event Schema (for digital NOTAMs)

3.1.2 NOTAM Number [*number*]

Description: A number assigned by the USNS to a published NOTAM.
Source: Assigned by USNS (required for distribution).

TABLE 3.2
NOTAM Number

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ number (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ number
Type	NoNumberType

3.1.3 Year [*year*]

Description: The year the NOTAM is published.
Source: Assigned by NOTAM Entry Application (required for distribution).

TABLE 3.3
Publication Year

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ year (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ year
Type	DateYearType

3.1.4 Series [*series*] (FUTURE Policy)

Description: A series letter assigned by the USNS to a published NOTAM.
Source: Assigned by USNS (required for distribution).

TABLE 3.4
Series

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ series (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ series

Type	AlphaType

3.1.5 QCode [*selectionCode*] (FUTURE Policy)

Description: The QCode, as defined by the sections below

Source: Determined by NOTAM Entry Application, (required for distribution).

TABLE 3.5
QCode

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ selectionCode (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ selectionCode
Type	AlphaType

3.1.6 Traffic [*traffic*] (FUTURE Policy)

Description: The traffic, as defined by the sections below

Source: Determined by NOTAM Entry Application, (required for distribution).

TABLE 3.6
Traffic

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ traffic (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ traffic
Type	AlphaType

3.1.7 Purpose [*purpose*] (FUTURE Policy)

Description: The purpose, as defined by the sections below

Source: Determined by NOTAM Entry Application, (required for distribution).

TABLE 3.7
Purpose

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ purpose (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ purpose
Type	AlphaType

3.1.8 Scope [*scope*] (FUTURE Policy)

Description: The scope, as defined by the sections below

Source: Determined by NOTAM Entry Application, (required for distribution).

TABLE 3.8
Scope

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ scope (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ scope

Type	AlphaType

3.1.9 Coordinates [*coordinate*] (FUTURE Policy)

Description: The coordinates of the hazard, Airport ARP.

Source: Baseline data. (required for distribution).

TABLE 3.9
Coordinates

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ coordinates (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ coordinates
Type	AlphaNumericType

3.1.10 Radius of Influence [*radius*] (FUTURE Policy)

Description: The radius of influence.

Source: Determined by NOTAM Entry Application, (required for distribution).

TABLE 3.10
Radius of Influence

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ radius (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ radius
Type	NoNumberType

3.2 Business Rules

3.2.1 Data Encoding Business Rules

a. All information should be intered as BASELINE.

b. The times defined in the text NOTAM must match those in the digital message.

3.3 Sample AIXM Message

```
<message:hasMember>
  <event:Event gml:id="e01">
    <event:timeSlice>
      <event:EventTimeSlice gml:id="e01-1">
        <gml:validTime>
          <gml:TimePeriod gml:id="e01-2">
            <gml:beginPosition>2008-12-22T00:00:00</gml:beginPosition>
            <gml:endPosition>2008-12-22T01:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <aixm:interpretation>BASELINE</aixm:interpretation>
        <aixm:sequenceNumber>1</aixm:sequenceNumber>
        <aixm:featureLifetime>
          <gml:TimePeriod gml:id="e01-3">
            <gml:beginPosition>2008-12-22T00:00:00</gml:beginPosition>
            <gml:endPosition>2008-12-22T01:00:00</gml:endPosition>
          </gml:TimePeriod>
```

```
        </aixm:featureLifetime>
        <event:encoding>DIGITAL</event:encoding>
        <event:textNOTAM>
          <event:NOTAM gml:id="e01-4">
            <event:series>A</event:series>
            <event:number>0667</event:number>
            <event:year>2008</event:year>
            <event:type>N</event:type>
            <event:issued>2008-12-22T00:00:00</event:issued>
            <event:selectionCode>QFALT</event:selectionCode>
            <event:traffic>ALL</event:traffic>
            <event:purpose>NBO</event:purpose>
            <event:scope>A</event:scope>
            <event:radius>999</event:radius>
            <event:effectiveEnd>2008-12-22T01:00:00</event:effectiveEnd>
            <event:text>ACY AD CLSD DUE TO SNOW</event:text>
            <event:publisherNOF xlink:href="#UNIT01"/>
            <event:concernedAirportHeliport xlink:href="urn:faa:gov:nasr:74efb6ba-a52a-46c0-a16b-03860d356882"/>
            <event:translation>
              <event:NOTAMTranslation gml:id="NT01">
                <event:type>LOCAL_FORMAT</event:type>
              </event:NOTAMTranslation>
            </event:translation>
          </event:NOTAM>
        </event:textNOTAM>
        <event:update xlink:href="urn:faa:gov:nasr:74efb6ba-a52a-46c0-a16b-03860d356882"/>
      </event:EventTimeSlice>
    </event:timeSlice>
  </event:Event>
</message:hasMember>
```

4 Affected Location By Bounding Box (in Metadata)

A bounding box can be defined around the affected location contained in the digital NOTAM message. This information will assist in search of available aviation data. The box should be defined with westbound and eastbound longitudes, and southbound and northbound latitudes in decimal degrees with a precision of a minimum of two significant figures.

[Source: OWS-6, INSPIRE IR (4.1), Annex 15 (Chapter 10)]

4.1 Sample AIXM Message

```
<gmd:extent>
  <gmd:EX_Extent>
    <gmd:geographicElement>
      <gmd:EX_GeographicBoundingBox>
        <gmd:westBoundLongitude>
          <gco:Decimal>-74.70</gco:Decimal>
        </gmd:westBoundLongitude>
        <gmd:eastBoundLongitude>
          <gco:Decimal>-74.53</gco:Decimal>
        </gmd:eastBoundLongitude>
        <gmd:southBoundLatitude>
          <gco:Decimal>39.40</gco:Decimal>
        </gmd:southBoundLatitude>
        <gmd:northBoundLatitude>
          <gco:Decimal>39.48</gco:Decimal>
        </gmd:northBoundLatitude>
      </gmd:EX_GeographicBoundingBox>
    </gmd:geographicElement>
  </gmd:EX_Extent>
</gmd:extent>
```

5 Affected Location (in AIXM)

Provides the affected location information of the NOTAM. For airport originated NOTAMs, this is always the affected airport.

5.1 AIXM Mapping and Translation

5.1.1 Details

TABLE 5.1

Attribute	Value
Description	Affected Location
Maps to Keyword	AD, APRON, OBST, RWY, TWY, SVC
Feature Type Id	AirportHeliport
Feature Xpath	aixm:AirportHeliport
AIXM Mapping Diagrams	AirportHeliport

5.1.2 Designator [*designator*] – Aerodrome

Description: A coded designator for an Aerodrome/Heliport.

The rules according to which this identifier should be formed are as follows:

a. If the AD/HP has an ICAO four-letter location indicator, then this one will become the CODE_ID for the Aerodrome/Heliport;

b. If the AD/HP does not have an ICAO four-letter location indicator, but it has an IATA three letter code, then this one will become the CODE_ID for the Aerodrome/Heliport;

c. If the AD/HP has neither an ICAO four-letter location indicator nor an IATA three letter code, then an artificial generated code will be used. This will contain a group of letters and a number. The group of letters could be the two-letter code of the State responsible for the Aerodrome/Heliport, and the number could be an integer between 0001 and 9999.

Source: User-selected from baseline data (required).

TABLE 5.2
Aerodrome FAA designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – designator (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: AirportHeliport
Type	CodeAirportHeliportDesignatorType
Min length	3
Max length	6
Pattern	([A-Z]|\d)*

5.1.3 ICAO Designator [*ICAOType*] – Aerodrome

Description: The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 5.3
Aerodrome ICAO designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – locationIndicatorICAO (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ locationIndicatorICAO
AIXM Mapping	Class: AirportHeliport
Type	locationIndicatorICAO
Min length	4
Max length	4
Pattern	[A-Z]*

5.1.4 Name [*name*] – Aerodrome

Description: The primary official name of an aerodrome as designated by an appropriate authority.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 5.4
Official Aerodrome Name

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – name (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: AirportHeliport
Type	CodeNameType
Min length	1
Max length	60
Pattern	[A-Z]*

5.1.5 Location [*location*]

Description: The affected location (added to the text NOTAM wrapper)

Source: Baseline data. (Required).

TABLE 5.5
Location

Attribute	Value
AIXM Path (UML)	Event (feature)/ NOTAM (object)/ location (attribute)
AIXM Element Xpath	Event/ timeSlice/ EventTimeSlice [interpretation: BASELINE]/ textNOTAM/ NOTAM/ location
Type	AlphaType

5.2 Business Rules

5.2.1 Data Encoding Business Rules

For entering *designator*, *locationICAO*, *name*, and *ARP* use a TimeSlice of type SNAPSHOT.

5.3 Sample AIXM Message

```
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
    <timeSlice>
```

```
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
```

6 NOTAM Effective Times

Provides the effective times of the NOTAM. Based in AIXM 5.1 Temporality Model.

6.1 AIXM Mapping and Translation

6.1.1 Details

TABLE 6.1

Attribute	Value
Description	Effective times
Maps to Keyword	AD, APRON, OBST, RWY, TWY, SVC
Feature Type Id	ALL
Feature Xpath	
AIXM Mapping Diagrams	GML – decimal

6.1.2 SNAPSHOT (TimeInstant)

Description: The time instant of a given snapshot of baseline data

Source: Determined at the time of digital capture.

TABLE 6.2
Interpretation: SNAPSHOT

Attribute	Value
AIXM Element Xpath	gml:ValidTime/ gml:TimeInstant/ gml:timePosition
Type	TimePositionUnion (ISO 19108)
Pattern	YYYY-MM-DDTHH:MM:SS

```
<gml:validTime>
  <gml:TimeInstant gml:id="TWY01_TS01_TI01">
    <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
  </gml:TimeInstant>
</gml:validTime>
```

6.1.3 TEMPDELTA (TimePeriod)

Description: The effective time of a temporary change.

Source: User-entered (required).

TABLE 6.3
Interpretation: TEMPDELTA

Attribute	Value
AIXM Element Xpath	gml:ValidTime/ gml:TimePeriod/ gml:beginPosition gml:ValidTime/ gml:TimePeriod/ gml:endPosition
Type	TimePositionUnion (ISO 19108)
Pattern	YYYY-MM-DDTHH:MM:SS

201004070900 – 201004091500

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition>2010-04-09T15:00:00</gml:endPosition>
  </gml:TimePeriod>
</gml:validTime>
```

6.1.4 PERMDELTA

Description: The effective time of a permanent change on an existing feature (90 days or longer between start and end time).

Source: User-entered (required).

TABLE 6.4
Interpretation: PERMDELTA

Attribute	Value	
AIXM Element Xpath	gml:ValidTime/ gml:TimePeriod/ gml:beginPosition gml:ValidTime/ gml:TimePeriod/ gml:endPosition	
Type	TimePositionUnion (ISO 19108)	
Pattern for	YYYY-MM-DDTHH:MM:SS	
Pattern for indeterminatePosition	unknown	…
	after, before, now	YYYY-MM-DDTHH:MM:SS

201004070900 – 201009091500

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition>2010-09-09T15:00:00</gml:endPosition>
  </gml:TimePeriod>
</gml:validTime>
```

201004070900 – PERM

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition indeterminatePosition="unknown"/>
  </gml:TimePeriod>
</gml:validTime>
```

6.1.5 BASELINE/BASELINE with End of Life

Description: The effective time of a baseline condition (new feature).

Source: User-entered (required).

TABLE 6.5
Interpretation: BASELINE

Attribute	Value	
AIXM Element Xpath	gml:ValidTime/ gml:TimePeriod/ gml:beginPosition gml:ValidTime/ gml:TimePeriod/ gml:endPosition	
Type	TimePositionUnion (ISO 19108)	
Pattern for	YYYY-MM-DDTHH:MM:SS	
Pattern for indeterminatePosition	unknown	…
	after, before, now	YYYY-MM-DDTHH:MM:SS

201004070900 – PERM

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition indeterminatePosition="unknown"/>
  </gml:TimePeriod>
</gml:validTime>
```

201004070900 – 201004191500 (example: Temporary Obstacle)

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition 2010-04-19T15:00:00"/>
  </gml:TimePeriod>
</gml:validTime>
```

6.1.6 Estimated (EST) Times

According to Annex 15, Appendix 6, any NOTAM which includes an EST shall be cancelled or replaced before the date-time specified in item C). However, for events that include a gml:endPosition element with a value for the "indeterminatePosition" attribute, FNS or USNS will require an action from the originators.

Description: The effective time of a temporary condition.

Source: User-entered (required).

TABLE 6.6
Estimated End Times

Attribute	Value	
AIXM Element Xpath	gml:ValidTime/ gml:TimePeriod/ gml:beginPosition gml:ValidTime/ gml:TimePeriod/ gml:endPosition	
Type	TimePositionUnion (ISO 19108)	
Pattern	YYYY-MM-DDTHH:MM:SS	
Pattern for Estimated End Time	unknown	YYYY-MM-DDTHH:MM:SS
	after, before, now	YYYY-MM-DDTHH:MM:SS
Source	Data Encoding Rules	

201004070900 – 201006091500EST

```
<gml:validTime>
  <gml:TimePeriod gml:id="TWY02_TS01_TP01">
    <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
    <gml:endPosition indeterminatePosition="unknown"/>2010-06-09T15:00:00</gml:endPosition>
  </gml:TimePeriod>
</gml:validTime>
```

6.2 Business Rules

6.2.1 Template Business Rules

a. The start date/time must be at or after the current date/time.

b. The end date/time must be after the start date/time.

6.2.2 Policy Business Rules

a. The NOTAM shall not be published if the start time is more than 72 hours in the future.

b. The day begins at 0000 and ends at 2359

c. All start and end times are entered in Coordinated Universal Time (UTC)

d. The start and end times are stated in 10 digits (year, month, day, hour, minute)

e. Do not use sunrise (SR) or sunset (SS)

6.2.3 Data Encoding Business Rules

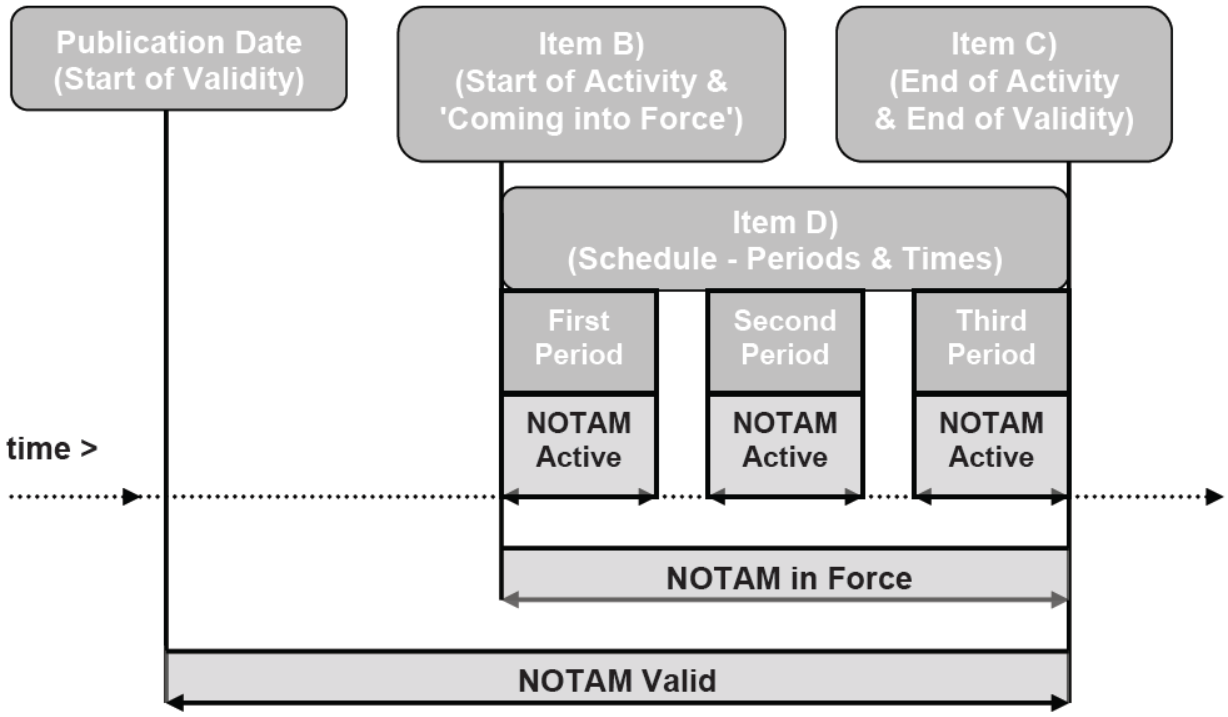
a. The beginPosition and endPosition for the TEMPDELTA of each feature should correspond to the NOTAM activity times.

b. The timePosition for the SNAPSHOT of each feature should correspond to the beginPosition.

7 NOTAMs with a Schedule

Guidelines for the day/time schedule for an intermittent NOTAM. Relationship between the time-related expressions shown in Figure 4.

Figure 4



from OPADD

7.1 AIXM Mapping and Translation

7.1.1 Details

TABLE 7.1

Attribute	Value
Description	Properties with Schedule
Maps to Keyword:	AD, APRON, OBST, RWY, TWY
AIXM Mapping Diagram	PropetiesWithSchedule
NOTAM lifespan	
Start ASAP	No

Description: The effective time of a condition/activity that repeats.

Source: User-entered (optional).

TABLE 7.2
Schedules

Attribute	Value	
Aerodrome		
AIXM Path (UML)	AirportHeliport/ AirportHeliportAvailability/ PropertiesWithSchedule (object)/ Timesheet (object)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ timeInterval/ Timesheet/	
Apron		
AIXM Path (UML)	AirportHeliport/ ApronAreaAvailability/ PropertiesWithSchedule (object)/ Timesheet (object)	
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ timeInterval/ Timesheet/	
Obstacle		
AIXM Path (UML)	Obstacle/ Verical Structures/ VerticalStructureLightingStatus/ PropertiesWithSchedule (object)/ Timesheet (object) Obstacle/ Verical Structures/ VericalStructurePart/ PropertiesWithSchedule (object)/ Timesheet (object)	
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ lightingAvailability/ VerticalStructureLightingStatus/ timeInterval/Timesheet/ VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/ timeInterval/Timesheet/	
Runway		
AIXM Path (UML)	AirportHeliport/ ManoeuvringAreaAvailability/ PropertiesWithSchedule (object)/ Timesheet (object)	
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ timeInterval/Timesheet/	
Taxiway		
AIXM Path (UML)	AirportHeliport/ ManoeuvringAreaAvailability/ PropertiesWithSchedule (object)/ Timesheet (object)	
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ timeInterval/Timesheet/	
AIXM Mapping	Class: Timesheet	
Enumeration	StartDate	DateMonthDayType
	EndDate	DateMonthDayType
	Day	CodeDayType
	startTime	TimeType
	endTime	TimeType
	timeReference	CodeTimeReferenceType
	daylightSavingAdjust	CodeYesNoType

7.2 Business Rules

7.2.1 Template Business Rules

General

a. The start date/time must be at or after the current date/time.

b. The end date/time must be after the start date/time.

Rules to prevent overlapping schedules

c. Each day of the week (Monday, Tuesday, etc.) can be used a maximum of one time in the schedule

d. If the user selects "Daily" then no other days of the week (Monday, Tuesday, etc.), or "Weekdays", or "Weekends" can be selected.

e. If the user selects "Weekdays" or "Weekends", then no other days of the week (Monday, Tuesday, etc.) or "Daily" can be selected.

Rules related to the period of validity

f. The start and end dates/times for the schedule must be within the period of validity (effective time)

g. A period of validity greater than 24 hours is required

h. A period of validity greater than 24 hours, but less than 48 hours requires the option of "Daily" only.

i. A period of validity greater than or equal to 48 hours requires more than one day listed in the schedule (Daily, Weekends, MON/TUE, WED/SUN, etc.).

j. A period of validity greater than or equal to five days is required for the use of "Weekdays".

Rules to format NOTAM text correctly

k. If the schedule applies to the same time period for everyday during the period of validity, the NOTAM text should read: !ACY XX/XXX ACY RWY 04/22 PAEW CONSTRUCTION ADJ 0800-1700 DLY WEF 1009210800-1009271700

l. If the schedule applies to the same time period for Monday through Friday only, the NOTAM text should be consolidated to read: !ACY XX/XXX ACY RWY 04/22 PAEW CONSTRUCTION ADJ 0800-1700 WKDAYS WEF 1009200800-1009241700

m. If the schedule applies to the same time period for Saturday and Sunday only, the NOTAM text should be consolidated to read: !ACY XX/XXX ACY RWY 04/22 PAEW CONSTRUCTION ADJ 0800-1700 WKENDS WEF 1009250800-1009261700

n. If the schedule applies to the same time period for multiple days, but not every day during the period of validity, then the NOTAM text should be consolidated to read: !ACY XX/XXX ACY RWY 04/22 PAEW CONSTRUCTION ADJ 0800-1700 MON/TUE/WED/SAT/SUN WEF 1009200800-1009271700

7.2.2 Policy Business Rules

a. The day begins at 0000 and ends at 2359

b. All start and end times are entered in Coordinated Universal Time (UTC)

c. The term "WKEND" means Saturday and Sunday

d. The term "WKDAYS" means Monday through Friday

7.2.3 Data Encoding Business Rules

a. The timeInterval (schedule) should appear in the TimeSlice TEMPDELTA.

b. The timeReference for all NOTAMs should be UTC.

c. For timeIntervals that are effective daily, then one time interval is needed with the element day = ANY.

d. For timeIntervals that are effective for only specific days, a new timeInterval is needed for each effective day.

e. The element daylightSavingsAdjust should accurately reflect the regional observance of daylight savings time.

7.3 Sample AIXM Message

0900-1500 DLY

```
<timeInterval>
  <Timesheet gml:id="TimeSheet_01">
    <timeReference>UTC</timeReference>
    <startDate>07-04</startDate>
    <endDate>15-04</endDate>
    <day>ANY</day>
    <startTime>09:00</startTime>
    <endTime>15:00</endTime>
    <daylightSavingAdjust>YES</daylightSavingAdjust>
  </Timesheet>
</timeInterval>
```

0900-1500 MON/WED/FRI

```
<timeInterval>
  <Timesheet gml:id="TimeSheet_01">
    <timeReference>UTC</timeReference>
    <startDate>07-04</startDate>
    <endDate>15-04</endDate>
    <day>MON</day>
    <startTime>09:00</startTime>
    <endTime>15:00</endTime>
    <daylightSavingAdjust>YES</daylightSavingAdjust>
  </Timesheet>
</timeInterval>
<timeInterval>
  <Timesheet gml:id="TimeSheet_02">
    <timeReference>UTC</timeReference>
    <startDate>07-04</startDate>
    <endDate>15-04</endDate>
    <day>WED</day>
    <startTime>09:00</startTime>
    <endTime>15:00</endTime>
    <daylightSavingAdjust>YES</daylightSavingAdjust>
  </Timesheet>
</timeInterval>
<timeInterval>
  <Timesheet gml:id="TimeSheet_03">
    <timeReference>UTC</timeReference>
    <startDate>07-04</startDate>
    <endDate>15-04</endDate>
    <day>FRI</day>
    <startTime>09:00</startTime>
    <endTime>15:00</endTime>
    <daylightSavingAdjust>YES</daylightSavingAdjust>
  </Timesheet>
</timeInterval>
```

7.4 Additional Analysis

A schedule with “2200-0800 MON” implies 2200 on Monday through 0800 Tuesday and is acceptable.

8 Prior Permission

8.1 AIXM Mapping and Translation

8.1.1 NOTAMs with Prior Permission Requirements

8.1.2 Details

TABLE 8.1

Attribute	Value
Description	Properties with Schedule
Maps to Keyword:	AD, APRON, RWY, TWY
AIXM Mapping Diagram	AirportHeliportAvailability (see Object UsageCondition)
NOTAM lifespan	
Start ASAP	No

Description: Describes whether prior permission is needed.

Source: User-entered (optional).

TABLE 8.2
Prior Permission

Attribute	Value	
Aerodrome		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ priorpermission (attribute)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ priorPermission	
Apron		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ priorpermission (attribute)	
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ priorPermission	
Runway		
AIXM Path (UML)	Runway (feature)/ ManoeuvringAreaAvailability (object)/ ManoeuvringAreaUsage (object)/ priorPermission (attribute)	
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ priorPermission	
Taxiway		
AIXM Path (UML)	Taxiway (feature)/ ManoeuvringAreaAvailability (object)/ ManoeuvringAreaUsage (object)/ priorPermission (attribute)	
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ priorPermission	
AIXM Mapping	Class: UsageCondition	
Enumeration	ValDurationType	
	UomDurationType	HR
		MIN
AIXM Path (UML)	Contact (object)	
AIXM Element Xpath	Contact/ ContactInformation/ phoneFax/ TelephoneContact/ voice	
AIXM Mapping	Class: ContactInformation	

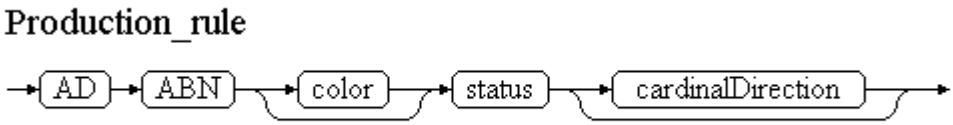
8.2 Sample AIXM Message

EXC 4 HR PPR


```
<usage xsi:nil="true">
  <AirportHeliport/ApronArea/ManoeuvringAreaUsage gml:id="Usage01">
    <priorPermission uom="HR">4</priorPermission>
    <contact>
      <ContactInformation gml:id="ContactInfo_01">
        <phoneFax>
          <TelephoneContact gml:id="TelephoneContact_01">
            <voice>2025807400</voice>
          </TelephoneContact>
        </phoneFax>
      </ContactInformation>
    </contact>
  </AirportHeliport/ApronArea/ManoeuvringAreaUsage>
</usage>
```

9 Aerodrome – Beacon Status

Specifies the operational status of an Aerodrome beacon.



9.1 Example NOTAMs

1. !MIV 05/075 7N7 AD ABN OTS
2. !BRW 02/019 BRW AD ABN ON CONT
3. !GRB 12/349 HXF AD ABN NOT ROTATING
4. !ISP 11/092 ISP AD ABN OBSTRUCTED 185-202 DEGREES
5. !ABY 02/008 ABY AD ABN INTMT

Source: US NOTAM Repository.

9.2 AIXM Mapping and Translation

9.2.1 Scenario Details

TABLE 9.1

Attribute	Value
Description	Status change to airport beacon lights
Maps to Keyword:	AD
Feature Type Id	Navaid Points/ Visual Navigation/ AeronauticalGroundLight
Feature Xpath	aixm:AeronauticalGroundLight
AIXM Mapping Diagram	Visual Navigation
NOTAM lifespan	
Start ASAP	Yes

9.2.2 ABN [*type*]

Description: Indicates the type of beacon.

Source: Assumed when event specification is selected (required).

TABLE 9.2
Aerodrome Beacon (ABN)

Attribute	Value		
AIXM Path (UML)	AeronauticalGroundLight (feature)/ type (attribute)		
AIXM Element Xpath	AeronauticalGroundLight/ timeSlice/ AeronauticalGroundLightTimeSlice [interpretation:SNAPSHOT]/ type		
AIXM Mapping	Class: GroundLightingType		
Enumeration	CodeGroundLightingType		
	AIXM	**Translations**	
	ABN	ICAO	ABN
		FAA	ABN
		Plain Text	Airport beacon

9.2.3 Color [*colour*]

Description: The color of the beacon light.

Source: User-selected (optional).

TABLE 9.3
Aerodrome Beacon Light Color

Attribute	Value		
AIXM Path (UML)	AeronauticalGroundLight (feature) /colour (attribute)		
AIXM Element X Path	AeronauticalGroundLight/ timeSlice/ AeronauticalGroundLightTimeSlice [interpretation:TEMPDELTA]/ colour		
AIXM Mapping	Class: AeronauticalGroundLight		
Enumeration	CodeColourType		
	AIXM	**Translations**	
	YELLOW	ICAO	YELLOW
		FAA	YELLOW
		Plain Text	Yellow
	RED	ICAO	RED
		FAA	RED
		Plain Text	Red
	GREEN	ICAO	GREEN
		FAA	GREEN
		Plain Text	Green
	WHITE	ICAO	WHITE
		FAA	WHITE
		Plain Text	White

9.2.4 Location [*location*]

Description: The location of the beacon/light.

Source: Baseline data (required).

TABLE 9.4
Location

Attribute	Value
AIXM Path (UML)	AeronauticalGroundLight (feature) /location (attribute)
AIXM Element X Path	AeronauticalGroundLight/ timeSlice/ AeronauticalGroundLightTimeSlice [interpretation:TEMPDELTA]/ location/ elevatedPoint/ gml:pos
AIXM Mapping	Class: AeronauticalGroundLight
Datatype	GML – decimal

9.2.5 Status [*operationalStatus*]

Description: The operational status of the light.

Source: User-selected (required).

TABLE 9.5
Aerodrome Beacon Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Navaid Points/ GroundLight (extension)/ operationalStatus (attribute)		
AIXM Element X Path	AeronauticalGroundLight/ timeSlice/ AeronauticalGroundLightTimeSlice [interpretation:TEMPDELTA]/ aim:extension/ operationalStatus		
AIXM Mapping	Class: AIM Extension AeronauticalGroundLight		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service
	ON_CONTINUOUSLY	ICAO	ON CONTINUOUS
		FAA	ON CONT
		Plain Text	On continuously
	NOT_ROTATING	ICAO	NOT ROTATING
		FAA	NOT ROTATING
		Plain Text	Not Rotating
	INTERMITTANT	ICAO	INTERMITTANT
		FAA	INTMT
		Plain Text	Intermittant
	OBSCURED	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Obscured

9.2.6 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional and only with Status = OBSCURED).

TABLE 9.6
Warning Direction (note)

Attribute	Value		
AIXM Path (UML)	AeronauticalGroundLight (feature) /note (attribute)		
AIXM Element Xpath	AeronauticalGroundLight/ timeSlice/ AeronauticalGroundLightTimeSlice [interpretation:TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	N SIDE	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	North Side
	NE SIDE	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	Northeast Side
	E SIDE	ICAO	E SIDE
		FAA	E SIDE

		Plain Text	East Side
	SE SIDE	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	Southeast Side
	S SIDE	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	South Side
	SW SIDE	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	Southwest Side
	W SIDE	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	West Side
	NW SIDE	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	Northwest Side

9.3 Q Codes

TABLE 9.7
QCodes for Aerodrome Beacon Status

AIXM Code	**Q Code**	
ALL	**Series**	**A**
UNSERVICEABLE	Q Code	QLBAS
	Scope	A
	Traffic	V
	Purpose	M
ON_CONTINUOUSLY	Q Code	QLBXX
	Scope	A
	Traffic	V
	Purpose	M
NOT_ROTATING	Q Code	QLBXX
	Scope	A
	Traffic	V
	Purpose	M
INTERMITTANT	Q Code	QLBXX
	Scope	A
	Traffic	V
	Purpose	M
OBSCURED	Q Code	QLBXX
	Scope	A
	Traffic	V
	Purpose	M

9.4 Business Rules

9.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When status equals null, then "Select a status."

c. When status equals OBSCURED, then "cardinalDirection" may entered but is not required.

9.4.2 Policy Business Rules

None.

9.4.3 Data Encoding Business Rules

a. The element *type* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

c. The element *colour* is optional and when specified must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA. If *colour* is not entered by the user, then remove this line from the AIXM message.

d. For entering *operationalStatus* use TimeSlice of type TEMPDELTA. Specification of *operationalStatus* is required.

9.5 Sample AIXM Message

Sample NOTAM Message: AD ABN GREEN LGTS OTS


```xml
<?xml version="1.0" encoding="UTF-8"?>
<fns:FNSMessage gml:id="ID_1" xsi:schemaLocation="http://www.faa.gov/aim/fns/1.0 FNS_Messages.xsd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:fns="http://www.faa.gov/aim/fns/1.0"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aixm.aero/schema/5.1">
  <fns:hasMember>
  <AeronauticalGroundLight gml:id="AGL_01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AeronauticalGroundLightTimeSlice gml:id="AGL_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="AGL_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <type>ABN</type>
        <colour>GREEN</colour>
        <aerodromeBeacon xlink:href="#ACY"/>
        <location>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>36 -115</gml:pos>
          </ElevatedPoint>
        </location>
      </AeronauticalGroundLightTimeSlice>
    </timeSlice>
    <timeSlice>
      <AeronauticalGroundLightTimeSlice gml:id="AGL_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="AGL_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-10T19:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
```

```
        <sequenceNumber>15</sequenceNumber>
        <extension>
          <aim:AeronauticalGroundLightExtension>
            <aim:operationalStatus >UNSERVICEABLE</aim:operationalStatus>
          </aim:AeronauticalGroundLightExtension>
        </extension>
      </AeronauticalGroundLightTimeSlice>
    </timeSlice>
  </AeronauticalGroundLight>
</fns:hasMember>
<fns:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</fns:hasMember>
```


9.6 Translation Templates

9.6.1 FAA

AD ABN [*colour***]** *operationalStatus*

9.6.2 ICAO E Line

AD ABN [*colour***]** *operationalStatus*

9.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Airport Beacon
Status: **[***colour***]** *operationalStatus*

9.7 Additional Analysis

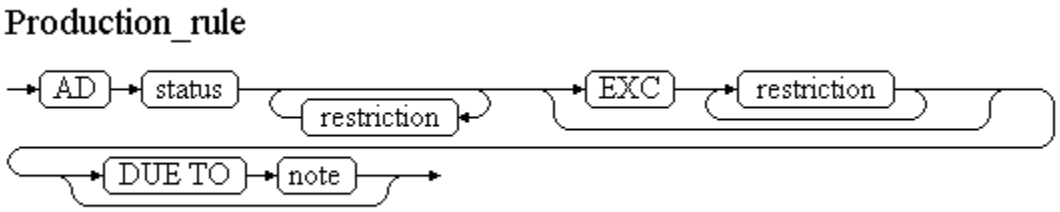
A search of the NOTAM database from the past year revealed that the majority (~1900) of the NOTAMs regarding ABN were of the type 'ABN OTS'. The other 64 NOTAMs related to ABN NOTAMs (64) were of the type ABN ON CONT, ABN WHITE/GREEN/YELLOW/etc. OTS, and CIVIL OTS.

Qcodes need to be revisited. For status Normal/Operations, the Qcode options are Q–AO for operational, Q–AL for operative (or reoperative subject to previously published limitations/conditions), and Q–AK for resumed normal operations. Depending on whether a NOTAM is issued for the status becoming reoperational, this could change.

According to the Aeronautical Information Manual, Chapter 2, the Airport Beacon only contains the following light colors: yellow, white, green, and red.

10 Aerodrome – Closure

Specify the operational status of an aerodrome.



10.1 Example NOTAMs

1. !MPV 01/009 MPV AD CLSD WEF 0901082154-0901082359
2. !JST 01/020 JST AD CLSD EXC HEL WEF 0901102317
3. !AND 01/342 AND AD CLSD NGT
4. !TIX 03/016 TIX AD CLSD EXC AIRSHOW AIRCRAFT 1600-2030 DLY WEF 0903131600-0903152030
5. !ISP 04/004 ISP AD CLSD FIXED WING WEF 0904040300-0904041000

Source: US NOTAM Repository.

10.2 AIXM Mapping and Translation

10.2.1 Scenario Details

TABLE 10.1

Attribute	Value
Description	Specify the status of an aerodrome.
Maps to Keyword	AD
Feature Type Id	AirportHeliport
Feature Xpath	aixm:AirportHeliport
AIXM Mapping Diagrams	AirportHeliport AirportHeliportAvailability
NOTAM lifespan	
Start ASAP	No

10.2.2 Designator [*designator*] – Aerodrome

Description: A coded designator for an Aerodrome/Heliport.

The rules according to which this identifier should be formed are as follows:

a. If the AD/HP has an ICAO four-letter location indicator, then this one will become the CODE_ID for the Aerodrome/Heliport;

b. If the AD/HP does not have an ICAO four-letter location indicator, but it has an IATA three letter code, then this one will become the CODE_ID for the Aerodrome/Heliport;

c. If the AD/HP has neither an ICAO four-letter location indicator nor an IATA three letter code, then an artificial generated code will be used. This will contain a group of letters and a number.

The group of letters could be the two-letter code of the State responsible for the Aerodrome/Heliport, and the number could be an integer between 0001 and 9999.

Source: User-selected from baseline data (required).

TABLE 10.2
Aerodrome FAA designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – designator (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: AirportHeliport
Type	CodeAirportHeliportDesignatorType
Min length	3
Max length	6
Pattern	([A-Z]|\d)*

Description: The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 10.3
Aerodrome ICAO designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – locationIndicatorICAO (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ locationIndicatorICAO
AIXM Mapping	Class: AirportHeliport
Type	CodeICAOType
Min length	4
Max length	4
Pattern	[A-Z]*

Description: The primary official name of an aerodrome as designated by an appropriate authroisty.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 10.4
Official Aerodrome Name

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – name (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: AirportHeliport
Type	CodeNameType
Min length	1
Max length	60
Pattern	[A-Z]*

10.2.3 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Aerodrome Closure event specification is selected. Specific restriction selected by Data Encoding Business Rules (required).

TABLE 10.5
Aerodrome Operational Status

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ operationalStatus (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ operationalStatus		
AIXM Mapping	Class: AirportHeliportAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed

10.2.4 Permit/Forbid Operational Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (optional – by selecting an item from template as either as a restriction or exclusion).

TABLE 10.6
Designation of Restriction/Exception

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ type (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ type		
AIXM Mapping	Class: UsageCondition		
Enumeration	CodeUsageLimitationType		
	AIXM	**Translations**	
	RESERV	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

10.2.5 Operations Restriction [*operation*]

Description: A coded identifier indicating an operation executed by an aircraft in relation with an airport/heliport.

Source: User-selected (optional).

TABLE 10.7
Operations Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ operation (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ operation		
AIXM Mapping	Class: AirportHeliportUsage		
Enumeration	CodeOperationAirportHeliportType		
	AIXM	**Translations**	
	TOUCHGO	ICAO	TGL
		FAA	TGL
		Plain Text	Touch and go
	TRAIN_APPROACH	ICAO	PLA
		FAA	PLA
		Plain Text	Practice Low Approach
	LANDING	ICAO	LDG
		FAA	LDG
		Plain Text	landing
	TAKEOFF	ICAO	TKOF
		FAA	TKOF
		Plain Text	Takeoff
	OTHER:TRANSIENT	ICAO	TRANSIENT
		FAA	TSNT
		Plain Text	transient
	OTHER:AIRSHOW	ICAO	AIRSHOW ACFT
		FAA	AIRSHOW ACFT
		Plain Text	Airshow Aircraft
	OTHER:HELIPORT	ICAO	HELI
		FAA	HELI
		Plain Text	heliport

10.2.6 Operations Restriction [*rule*]

Description: Flight rules to be observed by aircraft. For example, VFR or IFR.

Source: User-selected (optional).

TABLE 10.8
Flight Rules Restrictions/Exceptions

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ rule (attribute)

AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ rule		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightRuleType		
	AIXM	**Translations**	
	IFR	ICAO	IFR
		FAA	IFR
		Plain Text	instrument flight rules
	VFR	ICAO	VFR
		FAA	VFR
		Plain Text	visual flight rules

10.2.7 Operations Restriction [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 10.9
Military Flight Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ military (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV
		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation
	OTHER:ANG_ALERTACFT	ICAO	AIR NATIONAL GUARD ALERT ACFT
		FAA	ANG ALERT ACFT
		Plain Text	Air National Guard Alert Aircraft

	OTHER:USCG_ACFT	ICAO	US COAST GUARD ACFT
		FAA	USCG ACFT
		Plain Text	U.S. Coast Guard Aircraft

10.2.8 Operations Restriction [*purpose*]

Description: A code indicating the purpose of the flight.

Source: User-selected (optional).

TABLE 10.10
Flight Purpose Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ purpose (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ purpose		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightPurposeType		
	AIXM	**Translations**	
	SCHEDULED	ICAO	SKED ACFT
		FAA	SKED ACFT
		Plain Text	Scheduled Arcraft
	NON_SCHEDULED	ICAO	UNSKED ACFT
		FAA	UNSKED ACFT
		Plain Text	Uscheduled Aircraft
	AIR_TRAINING	ICAO	STUDENT
		FAA	STUDENT
		Plain Text	Student

10.2.9 Aircraft Restriction [*type*]

Description: Indicating the type of an aircraft.

Source: User-selected (optional).

TABLE 10.11
Aircraft Type Restrictions/Exceptions

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ type (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type
AIXM Mapping	Class: AircraftCharacteristic
Enumeration	CodeAircraftType

	AIXM	Translations	
	HELICOPTER	ICAO	HEL
		FAA	HEL
		Plain Text	helicopter
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	Seaplane
	GLIDER	ICAO	GLD
		FAA	GLDR
		Plain Text	Glider
	OTHER:SKIPLANES	ICAO	SKI PLANE
		FAA	SKI
		Plain Text	ski plane
	OTHER:ROTARYWING	ICAO	ROTARY WING
		FAA	ROTARY WING
		Plain Text	rotary wing
	OTHER:FIXEDWING	ICAO	FIXED WING
		FAA	FIXED WING
		Plain Text	fixed wing
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	Charters
	OTHER:AIRCARRIERS	ICAO	AIR CARRIERS
		FAA	AIR CARRIERS
		Plain Text	air carriers
	OTHER:EXPERIMENTAL	ICAO	EXPERIMENTAL
		FAA	EXPERIMENTAL
		Plain Text	experimental

10.2.10 Operations Restriction [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 10.12
Flight Status Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ status (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight

	SAR	ICAO	SEARCH AND RESCUE
		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA
		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

10.2.11 Aircraft Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft.

Source: User-entered (optional).

TABLE 10.13
Aircraft Wingspan Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ wingspan (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [*wingspan*]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ wingspanInterpretation (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	

	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*>
		FAA	GTR THAN <*value*>
		Plain Text	Greater than <*value*>
	BELOW (*type* = PERMIT)	ICAO	LESS THAN <*value*>
		FAA	LESS THAN <*value*>
		Plain Text	Less than <*value*>

10.2.12 Aircraft Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft.

Source: User-entered (optional).

TABLE 10.14
Aircraft Weight Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ weight (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [*weight*]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ weightInterpretation (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	OVR <*value*>
		FAA	OVR <*value*>
		Plain Text	Over <*value*>
	AT_OR_BELOW (*type* = PERMIT)	ICAO	AT BLW <*value*>
		FAA	AT BLW <*value*>
		Plain Text	at <*value*> and

10.2.13 Aircraft Restriction [*speed*]

Description: Speed and speed interpretation of the aircraft.

Source: User-entered (optional).

TABLE 10.15
Aircraft Speed Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ speed (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ speed		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValSpeedType		
Min inclusive	0		
Enumeration	Units of Measure: 1 KT = 1.852 KM_H		
	UomDistanceType	FAA	KT
		Plain Text	Knots
		ICAO	KM_H
		Plain Text	Kilometers/hour
	AIXM	**Translations**	
	Aircraft Restriction [*speed*]	ICAO	APCH SPD
		FAA	approach speed
		Plain Text	APCH SPD
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ AirportHeliportUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ speedInterpretation (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ usage/ AirportHeliportUsage/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ speedInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*> KTS
		FAA	> <*value*> KTS
		Plain Text	greater than <*value*> KTS

10.2.14 Restriction – Other [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 10.16
User-entered Restrictions/Exceptions

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/

	translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

10.2.15 Due to [*note*]

Description: A reason for caution when operating at or near the facility. Only available as a reason for closing (not an exception).

Source: User-selected (optional).

TABLE 10.17
User-entered text explanation

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	DUE TO WIP	ICAO	WIP
		FAA	WIP
		Plain Text	Work in progress
	DUE TO DISABLED AIRCRAFT	ICAO	DISABLED ACFT
		FAA	DISABLD ACFT
		Plain Text	Disabled Aircraft
	DUE TO RUBBER REMOVAL	ICAO	RUBBER REMOVAL
		FAA	RUBBER REMOVAL
		Plain Text	Rubber Removal
	DUE TO PAVING	ICAO	PAVING
		FAA	PAVING
		Plain Text	Paving
	DUE TO RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	DUE TO SNOW REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow Removal
	DUE TO ICE REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	DUE TO CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	DUE TO USER SUPPLIED FREE TEXT	ICAO	User Supplied
		FAA	

		Plain Text	

10.3 Q Codes

TABLE 10.18
QCodes for Aerodrome Closure

AIXM Code	QCode	
ALL	Series	A
CLOSED	Q Code	QFALC
	Scope	A
	Traffic	IV
	Purpose	NBO
ANY RESTRICTION/EXCEPTION COMBINATION	Q Code	QFALT
	Scope	A
	Traffic	IV
	Purpose	NBO

10.4 Business Rules

10.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. The addition of *restriction(s)* is optional. The user may be allowed to enter multiple *restrictions*.

c. The same *restriction* must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections).

d. A number (greater than zero) must be entered for *wingspan, weight*, and *speed* if selected.

10.4.2 Policy Business Rules

None.

10.4.3 Data Encoding Business Rules

a. For entering *designator* and *locationICAO*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and additional restriction/exception information, use a TimeSlice of type TEMPDELTA.

c. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

d. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED and a list of operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED; a list of operations, aircraft, or flight types are listed under the type FORBID; and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

e. For restrictions, *type* is FORBID. The values for wingspan Interpretation and weight Interpretation depend on *type* FORBID.

f. For exceptions, *type* is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on *type* PERMIT.

10.5 Sample AIXM Message (Closed)

Sample NOTAM Message: AD CLSD DUE TO SNOW


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
              <aixm:annotation>
                <aixm:Note gml:id="CY01_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY01_TS02_NT02">
                      <aixm:note lang="eng">DUE TO SNOW</aixm:note>
                    </aixm:LinguisticNote>
```

```
                    </aixm:translatedNote>
                  </aixm:Note>
                </aixm:annotation>
                <operationalStatus>CLOSED</operationalStatus>
              </AirportHeliportAvailability>
            </availability>
          </AirportHeliportTimeSlice>
        </timeSlice>
      </AirportHeliport>
    </notamMessage:hasMember>
    </notamMessage:AIXMBasicMessage>
```


10.6 Sample AIXM Message (Closed with Exceptions)

Sample NOTAM Message: AD CLSD TO TGL/ PLA/ STUDENT


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
            <operationalStatus>LIMITED</operationalStatus>
            <usage>
              <AirportHeliportUsage gml:id="AHU01">
                <type>FORBID</type>
                <operation>TOUCHGO</operation>
              </AirportHeliportUsage>
            </usage>
```

```
            <usage>
              <AirportHeliportUsage gml:id="AHU02">
                <type>FORBID</type>
                <operation>TRAIN_APPROACH</operation>
              </AirportHeliportUsage>
            </usage>
            <usage>
              <AirportHeliportUsage gml:id="AHU03">
                <type>FORBID</type>
                <operation>OTHER:STUDENT</operation>
              </AirportHeliportUsage>
            </usage>
          </AirportHeliportAvailability>
        </availability>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: AD CLSD UNSKED ACFT/ VFR


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
```

```
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>8</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
            <operationalStatus>LIMITED</operationalStatus>
            <usage>
              <AirportHeliportUsage gml:id="AHU01">
                <type>FORBID</type>
                <selection>
                  <ConditionCombination gml:id="CC01">
                  <logicalOperator>OR</logicalOperator>
                    <flight>
                      <FlightCharacteristic gml:id="FC01">
                        <rule>VFR</rule>
                      </FlightCharacteristic>
                    </flight>
                    <flight>
                      <FlightCharacteristic gml:id="FC02">
                        <purpose>NON_SCHEDULED</purpose>
                      </FlightCharacteristic>
                    </flight>
                  </ConditionCombination>
                </selection>
              </AirportHeliportUsage>
            </usage>
          </AirportHeliportAvailability>
        </availability>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: AD CLSD SEAPLANES W/ APCH SPEED GTR THAN 320 KTS


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
```

```
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="CY01_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="CY01_TS02_TP01">
              <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>8</sequenceNumber>
          <availability>
            <AirportHeliportAvailability gml:id="ACYAVAIL_02">
              <operationalStatus>LIMITED</operationalStatus>
              <usage>
                <AirportHeliportUsage gml:id="AHU01">
                  <type>FORBID</type>
                  <selection>
                    <ConditionCombination gml:id="CC01">
                      <logicalOperator>AND</logicalOperator>
                      <aircraft>
                        <AircraftCharacteristic gml:id="AC01">
                          <type>SEAPLANE</type>
                        </AircraftCharacteristic>
                      </aircraft>
                      <aircraft>
                        <AircraftCharacteristic gml:id="AC02">
                          <speed uom="KT">320</speed>
                          <speedInterpretation>ABOVE</speedInterpretation>
                        </AircraftCharacteristic>
                      </aircraft>
                    </ConditionCombination>
                  </selection>
                </AirportHeliportUsage>
              </usage>
            </AirportHeliportAvailability>
          </availability>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


10.7 Translation Templates

10.7.1 FAA

AD *status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***] [DUE TO** *note***] WEF**

10.7.2 ICAO E Line

AD *status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]**
[DUE TO *note***] WEF**

10.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Status: *status*

[Restriction(s): **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***][DUE TO** *note***]]**

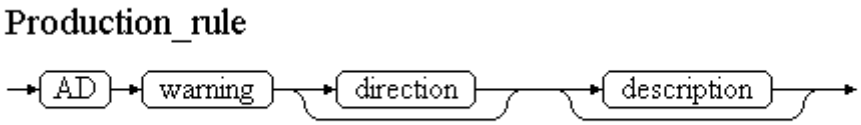
10.8 Additional Analysis

From Susan Gardner (SME from Airports):
Regarding Civil and GA – although some people use the terms interchangeably, Civil is all non-military aviation, whereas GA is a subset of Civil Aviation. I think we need to keep both as options.

Regarding Fixed vs ROTARY, we do need both terms – at a high level, it's the difference between an airplane and helicopter, and there could be reasons for an airport/runway to be closed to one or the other.

11 Aerodrome – Construction Status

Specify construction type hazards on and around an Aerodrome.



11.1 Example NOTAMs

1. !IAD 10/006 IAD AD EXCAVATION N INT OF TWY Y,E BARRICADED AND LGTD
2. !MCO 06/026 MCO AD OPEN TRENCH 90 N TWY F 297 E TWY E4 383 W TWY E5 LGTD AND BARRICADED

Source: US NOTAM Repository

11.2 AIXM Mapping and Translation

11.2.1 Scenario Details

TABLE 11.1

Attribute	Value
Description	Specify a construction hazard on the aerodrome.
Maps to Keyword	AD
Feature Type Id	AirportHeliport
Feature Path	aixm:AirportHeliport
AIXM Mapping Diagrams	AirportHeliport AirportHeliportAvailability
NOTAM lifespan	
Start ASAP	No

11.2.2 Designator [*designator*] – Aerodrome

Description: A coded designator for an Aerodrome/Heliport.

The rules according to which this identifier should be formed are as follows:

a. If the AD/HP has an ICAO four-letter location indicator, then this one will become the CODE_ID for the Aerodrome/Heliport;

b. If the AD/HP does not have an ICAO four-letter location indicator, but it has an IATA three letter code, then this one will become the CODE_ID for the Aerodrome/Heliport;

c. If the AD/HP has neither an ICAO four-letter location indicator nor an IATA three letter code, then an artificial generated code will be used. This will contain a group of letters and a number. The group of letters could be the two-letter code of the State responsible for the Aerodrome/Heliport, and the number could be an integer between 0001 and 9999.

Source: User-selected from baseline data (required).

TABLE 11.2
Aerodrome FAA designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – designator (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: AirportHeliport
Type	CodeAirportHeliportDesignatorType
Min length	3
Max length	6
Pattern	([A-Z]|\d)*

Description: The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 11.3
Aerodrome ICAO designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – locationIndicatorICAO (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ locationIndicatorICAO
AIXM Mapping	Class: AirportHeliport
Type	CodeICAOType
Min length	4
Max length	4
Pattern	[A-Z]*

Description: The primary official name of an aerodrome as designated by an appropriate authroisty.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 11.4
Official Aerodrome Name

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – name (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: AirportHeliport
Type	CodeNameType
Min length	1
Max length	60
Pattern	[A-Z]*

11.2.3 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working on or near a runway).

Source: User-selected (required).

TABLE 11.5
Construction Warning

Attribute	Value		
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ warning (attribute)		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ warning		
AIXM Mapping	Class: AirportHeliportAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	OTHER:OPEN_EXCAVATION	ICAO	OPEN EXCAVATION
		FAA	OPEN EXCAVATION
		Plain Text	Open Excavation
	OTHER:STEEL_PLATES	ICAO	STEEL PLATES
		FAA	STEEL PLATES
		Plain Text	Steel Plates
	OTHER:CONSTR_AREA	ICAO	CONSTRUCTION AREA
		FAA	CONSTR AREA
		Plain Text	Construction Area

11.2.4 Cardinal Direction [warningDirection]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 11.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Airport Heliport Availability/ warningDirection		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ aim:extension/ warningDirection		
AIXM Mapping	Class: AIM Extension AirportHeliportAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE

		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

11.2.5 Description: [*note*]

Description: Additional information to describe the type or location of the construction status.

Source: User-entered (optional).

TABLE 11.7
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

11.3 Q Codes

TABLE 11.8
QCodes for Aerodrome Construction Status

AIXM Code	Q Code	
ALL	**Series**	**A**
OTHER:OPEN_EXCAVATION	Q Code	QFAXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:STEEL_PLATES	Q Code	QFAXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:CONSTR_AREA	Q Code	QFAXX
	Scope	A
	Traffic	IV
	Purpose	NBO

11.4 Business Rules

11.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. If *warning* equals null, then "Select a Construction Warning."

c. Selecting *warningDirection* is optional.

11.4.2 Policy Business Rules

None.

11.4.3 Data Encoding Business Rules

a. The element type *designator* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *warning* is required and must use a TimeSlice of type TEMPDELTA.

c. The element type *warningDirection* is optional and must use a TimeSlice of type TEMPDELTA.

d. If the element type *warningDirection* is not selected, then remove the line in the message.

11.5 Sample AIXM Message

Sample NOTAM Message: AD OPEN EXCAVATION E SIDE


```xml
<?xml version="1.0" encoding="UTF-8"?>
<fns:FNSMessage gml:id="ID_1" xsi:schemaLocation="http://www.faa.gov/aim/fns/1.0 FNS_Messages.xsd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:fns="http://www.faa.gov/aim/fns/1.0"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aixm.aero/schema/5.1">
  <fns:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>16</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
            <warning>OTHER:OPEN_EXCAVATION</warning>
            <extension>
```

```
            <aim:AirportHeliportAvailabilityExtension">
              <aim:cardinalDirection>E</aim:cardinalDirection>
            </aim:AirportHeliportAvailabilityExtension>
          </extension>
        </AirportHeliportAvailability>
      </availability>
    </AirportHeliportTimeSlice>
  </timeSlice>
</AirportHeliport>
```

11.6 Translation Templates

11.6.1 FAA

AD *warning* **[**warning*Direction*] **[**note**] WEF**

11.6.2 ICAO E Line

AD *warning* **[**warning*Direction*] **[**note**] WEF**

11.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

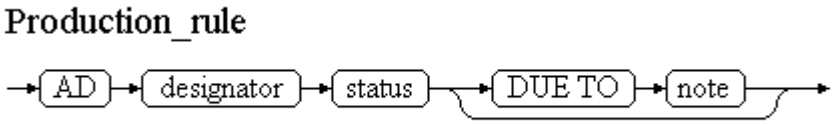
Warning: *warning*

[Location: [warning*Direction*] **[**note**]]**

11.7 Additional Analysis

12 Aerodrome – Helipad Status

Specify the operational status of a helipad.



12.1 Example NOTAMs

1. !ORD 06/211 ORD AD HELIPAD CLSD TIL 0906151300
2. !YQL 05/008 PR8 AD HELIPAD CLSD DUE TO SN TIL 1005061800
3. !YUL 05/026 SZ8 AD HELIPAD CLSD DUE TO CONST TIL 1005150300

Source: US NOTAM Repository

12.2 AIXM Mapping and Translation

12.2.1 Scenario Details

TABLE 12.1

Attribute	Value
Description	Specifies the status of the helipad.
Maps to Keyword	AD
Feature Type Id	AirportHeliport/ TouchDownLiftOff
Feature Xpath	aixm:TouchDownLiftOff
AIXM Mapping Diagram	Helicopter Surfaces/TLOF
NOTAM lifespan	
Start ASAP	No

12.2.2 Designator [*designator*]

Description: The full textual name or designator used to identify a helipad at an airport/heliport.

Source: User-selected from baseline data (required).

TABLE 12.2
Heliport Designator

Attribute	Value
AIXM Path (UML)	TouchDownLiftOff (feature)/ designator (attribute)
AIXM Element Xpath	TouchDownLiftOff/ timeSlice/ TouchDownLiftOffTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: TouchDownLiftOff
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%’\(\)*\+\-\./:;⇔\?@\[\\\]\^_|\{\}])*

12.2.3 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Helipad Closure event specification is selected. Selected by Data-Encoding Business Rules.

TABLE 12.3
Heliport Operational Status

Attribute	Value		
AIXM Path (UML)	TouchDownLiftOff (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element Xpath	TouchDownLiftOff/ timeSlice/ TouchDownLiftOffTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed

12.2.4 Due to [*note*]

Description: A reason for caution when operating at or near the facility. This is only a reason for closing (not an exception).

Source: User-selected (optional).

TABLE 12.4
Reason for Heliport Operational Status

Attribute	Value		
AIXM Path (UML)	TouchDownLiftOff (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element Xpath	TouchDownLiftOff/ timeSlice/ TouchDownLiftOffTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	DUE TO WIP	ICAO	WIP
		FAA	WIP
		Plain Text	Work in progress
	DUE TO MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE
		Plain Text	Maintenance
	DUE TO SNOW	ICAO	SNOW
		FAA	SNOW
		Plain Text	Snow
	DUE TO CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTR

		Plain Text	Construction
	DUE TO USER SUPPLIED FREE TEXT	ICAO	User Supplied
		FAA	
		Plain Text	

12.3 Q Codes

TABLE 12.5
QCodes for Helipad Status

AIXM Code	Q Code	
Closed	Series	A
	Q Code	QXXLC
	Scope	A
	Traffic	IV
	Purpose	NBO

12.4 Business Rules

12.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."

12.4.2 Policy Business Rules

None.

12.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

c. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

d. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

e. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators or identified by UUID in a TimeSlice of type TEMPDELTA.

12.5 Sample AIXM Message

Sample NOTAM Message: AD HELIPAD B CLSD

```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TouchDownLiftOff gml:id="TDLO01">
```

```
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TouchDownLiftOffTimeSlice gml:id="TDLO01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TDLO01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>HELIPAD B</designator>
        <associatedAirportHeliport xlink:href="#BWI"/>
      </TouchDownLiftOffTimeSlice>
    </timeSlice>
    <timeSlice>
      <TouchDownLiftOffTimeSlice gml:id="TDLO01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TDLO01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-10T19:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>3</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <operationalStatus>CLOSED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </TouchDownLiftOffTimeSlice>
    </timeSlice>
  </TouchDownLiftOff>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="BWI">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="BWI_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="BWI_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>BWI</designator>
        <name>BALTIMORE WASHINGTON INTERNATION AIRPORT</name>
        <locationIndicatorICAO>KBWI</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.108 -76.403</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

12.6 Translation Templates

12.6.1 FAA

AD *designator status* **[DUE TO** *note***] WEF**

12.6.2 ICAO E Line

AD *designator status* **[DUE TO** *note***] WEF**

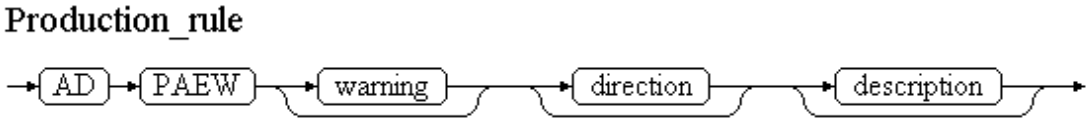
12.6.3 Plain Language

Affected Airport: *affectedAirport*
NOTAM Number: XX/XXX
Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*
Helipad: *designator*
Status: *status* **[DUE TO** *note***]**

12.7 Additional Analysis

13 Aerodrome – Personnel and Equipment Working

Specify personnel and equipment working warning for the entire airport.



13.1 Example NOTAMs

1. !RNO 01/098 05U AD PAEW WEF 0901251720

Source: US NOTAM Repository

13.2 AIXM Mapping and Translation

13.2.1 Scenario Details

TABLE 13.1

Attribute	Value
Description	Specify a wildlife hazard or a personnel warning for the entire airport
Maps to Keyword	AD
Feature Type Id	AirportHeliport
Feature Path	Aixm:AirportHeliport
AIXM Mapping Diagrams	AirportHeliport AirportHeliportAvailability
NOTAM lifespan	
Start ASAP	No

13.2.2 Designator [*designator*] – Aerodrome

Description: A coded designator for an Aerodrome/Heliport.

The rules according to which this identifier should be formed are as follows:

a. If the AD/HP has an ICAO four-letter location indicator, then this one will become the CODE_ID for the Aerodrome/Heliport;

b. If the AD/HP does not have an ICAO four-letter location indicator, but it has an IATA three letter code, then this one will become the CODE_ID for the Aerodrome/Heliport;

c. If the AD/HP has neither an ICAO four-letter location indicator nor an IATA three letter code, then an artificial generated code will be used. This will contain a group of letters and a number. The group of letters could be the two-letter code of the State responsible for the Aerodrome/Heliport, and the number could be an integer between 0001 and 9999.

Source: User-selected from baseline data (required).

TABLE 13.2
Aerodrome FAA designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – designator (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice

	[interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: AirportHeliport
Type	CodeAirportHeliportDesignatorType
Min length	3
Max length	6
Pattern	([A-Z]|\d)*

Description: The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 13.3
Aerodrome ICAO designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – locationIndicatorICAO (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ locationIndicatorICAO
AIXM Mapping	Class: AirportHeliport
Type	CodeICAOType
Min length	4
Max length	4
Pattern	[A-Z]*

Description: The primary official name of an aerodrome as designated by an appropriate authroisty.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 13.4
Official Aerodrome Name

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – name (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: AirportHeliport
Type	CodeNameType
Min length	1
Max length	60
Pattern	[A-Z]*

13.2.3 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working on or near a runway).

Source: User-selected (optional).

TABLE 13.5
Personnel and Equipment Working Warning

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ warning (attribute)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ warning

AIXM Mapping	Class: AirportHeliportAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	EQUIP	ICAO	PERSONNEL AND EQUIPMENT WORKING
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	RUBBER_REMOVAL	ICAO	RUBBER REMOVAL
		FAA	RUBBER REMOVAL
		Plain Text	rubber removal
	RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	PAVING	ICAO	SFC PAVING
		FAA	SFC PAVING
		Plain Text	surface paving
	PAINTING	ICAO	SFC PAINTING
		FAA	SFC PAINTING
		Plain Text	surface painting
	INSPECTION	ICAO	INSPECTION
		FAA	INSPECTION
		Plain Text	inspection
	GRASS_CUTTING	ICAO	GRASS CUTTING
		FAA	GRASS CUTTING
		Plain Text	grass cutting
	CALIBRATION	ICAO	CLBR WORK
		FAA	CLBR WORK
		Plain Text	calibration
	OTHER:CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	OTHER:SNOW_REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow removal
	OTHER:MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE
		Plain Text	Maintenance
	OTHER:ICE_REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	OTHER:CONT_BURN	ICAO	CONTROLLED BURN/ HEAVY SMOKE
		FAA	CONTROLLED BURN/ HEAVY SMOKE
		Plain Text	Controlled Burn and Heavy Smoke
	OTHER:HEAVY_EQUIP	ICAO	HEAVY EQUIP
		FAA	HEAVY EQUIPMENT
		Plain Text	Heavy Equipment

NOTE: *The default value is EQUIP (PAEW).*

13.2.4 Cardinal Direction [warningDirection]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 13.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Airport Heliport Availability/ warningDirection		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ aim:extension/ warningDirection		
AIXM Mapping	Class: AIM Extension AirportHeliportAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

13.2.5 Description: [*note*]

Description: Additional information to describe the type or location of Personnel and Equipment Working.

Source: User-entered (optional).

TABLE 13.7
Additional User-Entered Information

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/

	Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

13.3 Q Codes

TABLE 13.8
QCodes for Aerodrome PAEW

AIXM Code	Q Code	
ALL	**Series**	**A**
EQUIP (ALL)	Q Code	QFAHW
	Scope	A
	Traffic	IV
	Purpose	NBO

13.4 Business Rules

13.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. EQUIP is the default value for the field *warning*. If an option other than EQUIP is selected, the NOTAM should read "PAEW *warning*".

c. Selecting *warning* and *warningDirection* is optional.

13.4.2 Policy Business Rules

None.

13.4.3 Data Encoding Business Rules

a. The element type *designator* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *warning* is required and must use a TimeSlice of type TEMPDELTA. If the user does not select a specific reason, then *warning* will be EQUIP.

c. The element type *warningDirection* is optional and must use a TimeSlice of type TEMPDELTA.

d. If the element type *warningDirection* is not selected, then remove the line in the message.

13.5 Sample AIXM Message

Sample NOTAM Message: AD PAEW E SIDE 1300 – 1900 DLY


```
<?xml version="1.0" encoding="UTF-8"?>
<fns:FNSMessage gml:id="ID_1" xsi:schemaLocation="http://www.faa.gov/aim/fns/1.0 FNS_Messages.xsd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:fns="http://www.faa.gov/aim/fns/1.0"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aixm.aero/schema/5.1">
  <fns:hasMember>
  <AirportHeliport gml:id="ACY01">
```

```
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
            <timeInterval>
              <Timesheet gml:id="TIMSH01">
                <timeReference>UTC</timeReference>
                <day>ANY</day>
                <startTime>13:00</startTime>
                <endTime>19:00</endTime>
                <daylightSavingAdjust>YES</daylightSavingAdjust>
              </Timesheet>
            </timeInterval>
            <warning>EQUIP</warning>
            <extension>
              <aim:AirportHeliportAvailabilityExtension>
                <aim:cardinalDirection>E</aim:cardinalDirection>
              </aim:AirportHeliportAvailabilityExtension>
            </extension>
          </AirportHeliportAvailability>
        </availability>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</fns:hasMember>
```


13.6 Translation Templates

13.6.1 FAA

AD PAEW [*warning***] [**warning*Direction*] **WEF**

13.6.2 ICAO E Line

AD PAEW [*warning***] [**warning*Direction***] WEF**

13.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Personnel and Equipment Working (PAEW)

Warning: PAEW [*warning***]**

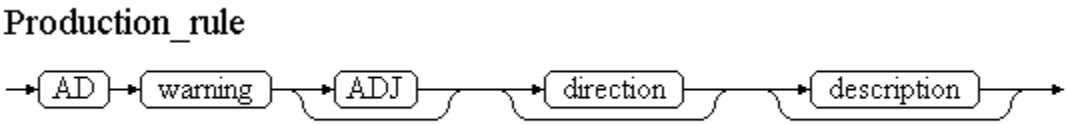
[Location: warning*Direction***]**

13.7 Additional Analysis

SME review indicates that we need to provide optional directionality. Indicating Adjacent, however, does not make sense.

14 Aerodrome – Wildlife Hazard

Specify a wildlife hazard for the entire airport.



14.1 Example NOTAMs

1. !IPT 05/155 LHV AD BIRD ACTIVITY

Source: US NOTAM Repository

14.2 AIXM Mapping and Translation

14.2.1 Scenario Details

TABLE 14.1

Attribute	Value
Description	Specify a wildlife hazard
Maps to Keyword	AD
Feature Type Id	AirportHeliport
Feature Path	aixm:AirportHeliport
AIXM Mapping Diagrams	AirportHeliport AirportHeliportAvailability
NOTAM lifespan	
Start ASAP	Yes

14.2.2 Designator [*designator*] – Aerodrome

Description: A coded designator for an Aerodrome/Heliport.

The rules according to which this identifier should be formed are as follows:

a. If the AD/HP has an ICAO four-letter location indicator, then this one will become the CODE_ID for the Aerodrome/Heliport;

b. If the AD/HP does not have an ICAO four-letter location indicator, but it has an IATA three letter code, then this one will become the CODE_ID for the Aerodrome/Heliport;

c. If the AD/HP has neither an ICAO four-letter location indicator nor an IATA three letter code, then an artificial generated code will be used. This will contain a group of letters and a number. The group of letters could be the two-letter code of the State responsible for the Aerodrome/Heliport, and the number could be an integer between 0001 and 9999.

Source: User-selected from baseline data (required).

TABLE 14.2
Aerodrome FAA designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – designator (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice

	[interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: AirportHeliport
Type	CodeAirportHeliportDesignatorType
Min length	3
Max length	6
Pattern	([A-Z]|\d)*

Description: The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO DOC 7910.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 14.3
Aerodrome ICAO designator

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – locationIndicatorICAO (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ locationIndicatorICAO
AIXM Mapping	Class: AirportHeliport
Type	CodeICAOType
Min length	4
Max length	4
Pattern	[A-Z]*

Description: The primary official name of an aerodrome as designated by an appropriate authroisty.

Source: User-selected from baseline data – translated from FAA designator.

TABLE 14.4
Official Aerodrome Name

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature) – name (attribute)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: AirportHeliport
Type	CodeNameType
Min length	1
Max length	60
Pattern	[A-Z]*

14.2.3 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, animal hazard [birds, dogs, elk, frogs] on or near a runway).

Source: User-selected (required).

TABLE 14.5
Bird or Wildlife Warning

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ warning (attribute)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation:TEMPDELTA]/ availability/ AirportHeliportAvailability/ warning

AIXM Mapping	Class: AirportHeliportAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	BIRD	ICAO	BIRD ACT
		FAA	BIRD ACTIVITY
		Plain Text	bird activity
	ANIMAL	ICAO	ANIMAL HAZARD
		FAA	WILDLIFE HAZARD
		Plain Text	wildlife hazard

14.2.4 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the aerodrome.

Source: User-selected (optional).

TABLE 14.6
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Airport Heliport Availability/ warningAdjacent		
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ aim:extension/ warningAdjacent		
AIXM Mapping	Class: AIM Extension AirportHeliportAvailability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

14.2.5 Cardinal Direction [warningDirection]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 14.7
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Airport Heliport Availability/ warningDirection		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ availability/ AirportHeliportAvailability/ aim:extension/ warningDirection		
AIXM Mapping	Class: AIM Extension AirportHeliportAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE

		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

14.2.6 Description: [*note*]

Description: A specific wildlife hazard (for example, animal hazard [birds, dogs, elk] on or near an aerodrome).

Source: User-entered (optional).

TABLE 14.8
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

14.3 Q Codes

TABLE 14.9
QCodes for Aerodrome Bird/Wildlife Hazard

AIXM Code	Q Code	
ALL	**Series**	**A**
BIRD	Q Code	QFAHX (aerodrome concentration of birds)
	Scope	A
	Traffic	IV

	Purpose	NBO
ANIMAL	Q Code	QFAXX (aerodrome plain language)
	Scope	A
	Traffic	IV
	Purpose	NBO

14.4 Business Rules

14.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *warning* equal to null, then "Select a wildlife Hazard."

c. When *warningAdjacent* equals null, then "Specify if Warning is Adjacent."

d. The field for *warningDirection* is optional.

14.4.2 Policy Business Rules

None.

14.4.3 Data Encoding Business Rules

a. The element type *designator* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *warningAdjacent* is required and must use a TimeSlice of type TEMPDELTA.

c. The element type *warning* is required and must use a TimeSlice of type TEMPDELTA. If the user does not select a specific reason, then *warning* will be EQUIP.

d. The element type *warningDirection* is optional and must use a TimeSlice of type TEMPDELTA.

e. If the element type *warningDirection* is not selected, then remove the line in the message.

14.5 Sample AIXM Message

AD BIRD ACTIVITY N SIDE


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="CY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="CY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <availability>
          <AirportHeliportAvailability gml:id="ACYAVAIL_02">
            <warning>BIRD</warning>
            <extension>
              <aim:AirportHeliportAvailabilityExtension>
                <aim:warningAdjacent>NO</aim:warningAdjacent>
                <aim:warningDirection>N</aim:warningDirection>
              </aim:AirportHeliportAvailabilityExtension>
            </extension>
          </AirportHeliportAvailability>
        </availability>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


14.6 Translation Templates

14.6.1 FAA

AD *warning* **[***note***]** *warningAdjacent* **[**warning*Direction***] WEF**

14.6.2 ICAO E Line

AD *warning* **[***note***]** *warningAdjacent* **[**warning*Direction***] WEF**

14.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

WildLife Hazard

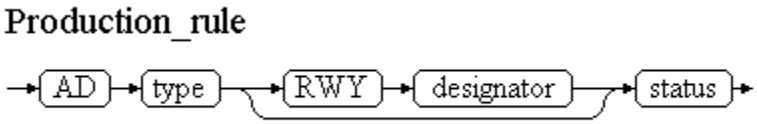
Warning: *warning* **[***note***]**
[Location: *warningAdjacent* **[**warning*Direction***]]**

14.7 Additional Analysis

SME review indicates that we need to provide optional directionality.

15 Aerodrome – Wind Indicator Status

Light status for identifying lights out for a Wind Direction Indicator (WDI) in close proximity to a runway.



15.1 Example NOTAMs

1. !ACY 10/081 ACY RWY 31 WDI UNLGTD
2. !ACY 10/082 ACY RWY 22 WDI LGTS OTS

Source: US NOTAM Repository

15.2 NOTAM Manager NOTAMs

1. AD WDI UNLGTD
2. AD WINDCONE UNLGTD
3. AD WDI UNAVAILABLE
4. AD WINDCONE UNAVAILABLE
5. AD WDI RWY 14 UNLGTD
6. AD WDI RWY 14 UNAVAILABLE
7. AD WINDCONE RWY 14 UNLGTD
8. AD WINDCONE RWY 14 UNAVAILABLE

Source: Donna McCord and seconded by Gary Prock, Susan Gardner, and Bruce Landry

15.3 AIXM Mapping and Translation

15.3.1 Scenario Details

TABLE 15.1

Attribute	Value
Description	Specify when Wind Direction Indicator Lights are Out of Service.
Maps to Keyword	AD
Feature Type Id	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Wind Direction Indicator
AIXM Mapping Diagram	AirportHeliport
Feature Xpath	aim:WindDirectionIndicator
NOTAM lifespan	
Start ASAP	Yes

15.3.2 Type [*type*]

Description: A textual of the wind direction indicator as either a windcone, wind tee, or tetrahedron.

Source: User-selected (required).

TABLE 15.2
Wind Indicator Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / type (attribute)		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ type		
AIXM Mapping	Class: AIM Extension Wind Direction Indicator		
Enumeration	AIM Extension: CodeWindDirectionIndicatorType		
	AIXM	**Translations**	
	WINDCONE	ICAO	WINDCONE
		FAA	WINDCONE
		Plain Text	Windcone
	TETRAHEDRON	ICAO	WDI
		FAA	WDI
		Plain Text	Wind Direction Indicator
	WIND TEE	ICAO	WIND TEE
		FAA	WIND TEE
		Plain Text	Wind Tee

15.3.3 Associated AirportHeliport

Description: The associated AirportHeliport where the Wind Indicator is located.

Source: User-selected from baseline data (required).

TABLE 15.3
Associated Aerodrome

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / +associatedAirportHeliport (xlink:href)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ associatedAirportHeliport/ xlink:href
AIXM Mapping	AirportHeliport

15.3.4 Location [Associated Runway Direction]

Description: The associated Runway Direction that the Wind Indicator is associated with, such to distinguish it from other Wind Indicators at the airport.

Source: User-selected from baseline data (optional).

TABLE 15.4
Associated Approach Runway End

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / +associatedRunwayDirection (xlink:href)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ associatedRunwayDirection/ xlink:href
AIXM Mapping	RunwayDirection

15.3.5 Location [Associated Runway]

Description: The associated Runway that the Wind Indicator is associated with, such to distinguish it from other Wind Indicators at the airport.

Source: User-selected from baseline data (optional).

TABLE 15.5
Associated Runway

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / +associatedRunway (xlink:href)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ associatedRunway/ xlink:href
AIXM Mapping	Runway

15.3.6 Location [note]

Description: Additional information describing the location, which would be captured in baseline data.

Source: Additional location information (stored in baseline data ex: midfield).

TABLE 15.6
Additional Descriptive Location Information

Attribute	Value	
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / annotation	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ associatedRunway/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	associatedRunway
	purpose	REMARK
Enumeration	TextNoteType	

15.3.7 Status [operationalStatus]

Description: The operational status of the lighting of the Wind Direction Indicator (WDI).

Source: User-selected (required).

TABLE 15.7
Wind Indicator Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / operationalStatus (attribute)		
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ extension/ aim:operationalStatus		
AIXM Mapping	Class: AIM Extension Wind Direction Indicator		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	UNSERVICABLE
		FAA	UNAVBL

		Plain Text	Unavailable
	DOWNGRADED*	ICAO	UNLIGHTED
		FAA	UNLGTD
		Plain Text	Unlighted
	DOWNGRADED*	ICAO	UNRELIABLE
		FAA	UNRELIABLE
		Plain Text	Unreliable
	DOWNGRADED*	ICAO	NOT ROTATING
		FAA	NOT ROTATING
		Plain Text	Not Rotating
DOWNGRADED*	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ WindDirectionIndicator (feature) / annotation		
	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: TEMPDELTA]/ associatedRunway/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	aim:operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		

NOTE: *operationalStatus of Downgraded requires an annotation to describe the condition. The note will have the ICAO translation appended.*

15.4 Q Codes

TABLE 15.8
QCodes for Wind Indicator Status

AIXM Code	**Q Code**	
ALL	**Series**	**A**
DOWNGRADED	Q Code	QFWXX
	Scope	A
	Traffic	IV
	Purpose	M
UNSERVICEABLE	Q Code	QFWAS
	Scope	A
	Traffic	IV
	Purpose	M

15.5 Business Rules

15.5.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *operationalStatus* equals null, then "Select a status."

c. The inclusion of RWY *designator* is optional; however, the available options for designator must come from the baseline data.

15.5.2 Policy Business Rules

None.

15.5.3 Data Encoding Business Rules

a. The elements of type *designator* (Airport) and *type* are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *designator* (Runway and/or RunwayDirection) is optional and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA. These should be associated using xlink:href.

c. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

d. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

15.6 Sample AIXM Message

Sample NOTAM Message: AD WINDCONE RWY 04/22 UNLGTD


```xml
<?xml version="1.0" encoding="UTF-8"?>
<fns:FNSMessage gml:id="ID_1" xsi:schemaLocation="http://www.faa.gov/aim/fns/1.0 FNS_Messages.xsd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:fns="http://www.faa.gov/aim/fns/1.0"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aixm.aero/schema/5.1">
<aim:hasMember>
  <aim:WindDirectionIndicator gml:id="WDI01" >
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <aim:timeSlice>
      <aim:WindDirectionIndicatorTimeSlice gml:id="WDI01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="WDI01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <aim:type>WINDCONE</aim:type>
        <aim:associatedRunway xlink:href="#RWY01"/>
        <aim:associatedAirport xlink:href="#AD_ACY" />
      </aim:WindDirectionIndicatorTimeSlice>
    </aim:timeSlice>
    <aim:timeSlice>
      <aim:WindDirectionIndicatorTimeSlice gml:id="WDI01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="WDI01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <aim:operationalStatus>DOWNGRADED</aim:operationalStatus>
      </aim:WindDirectionIndicatorTimeSlice>
    </aim:timeSlice>
  </aim:WindDirectionIndicator>
</aim:hasMember>
< notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
```

```
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</ notamMessage:hasMember>
< notamMessage:hasMember>
  <AirportHeliport gml:id="AD_ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="AD_ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AD_ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</ notamMessage:hasMember>
```


15.7 Translation Templates

15.7.1 FAA

AD *aim:type* **[***location***]** *aim:operationalStatus*

15.7.2 ICAO E Line

AD *aim:type* **[***location***]** *aim:operationalStatus*

15.7.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Wind Indicator: *aim:type*

[Affected Location: *location***]**

Status: *aim:operationalStatus*

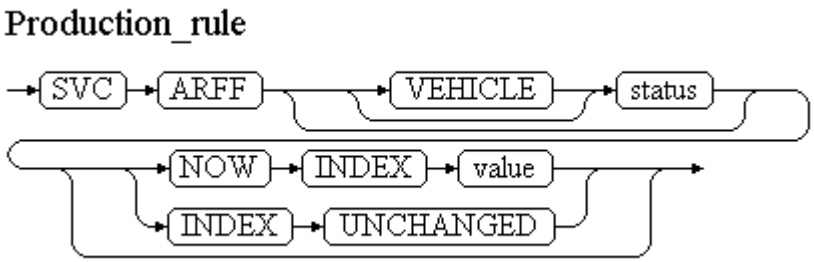
15.8 Additional Analysis

Depending on the type of WDI, LGTS OTS and UNLGTD, both are accepTABLE status entries. In the status drop down menu, both LGTS OTS and UNLGTD should appear such that the person entering the NOTAM can pick the option that is most relevant to the situation.

From speaking with Donna McCord (AJR-32), it was determined that Windsocks/Windcone and WDI (tetrahedron) should be differentiated from each other in the issued NOTAM. The details of the type can be captured in the text box for WDI as either tetrahedron or Windsock/Windcone. Additionally, we may move to UNLGTD for the status over LGTS OTS, if there are no objections.

16 Service – Aircraft Rescue and Fire Fighting (ARFF) Availability

Issue a NOTAM D on airports (not runways) certificated under 14 CFR Part 139 when notified by airport management that required ARFF equipment is inoperative/unavailable and replacement equipment is not available (FAA Order JO 7930.2). Air carriers and others must be notified that ARFF equipment is out of service. Each NOTAM must have an ending time as obtained from airport management. If unable to obtain an ending time, add 48 hours to the time of receipt and advise airport management. Permanent changes to the ARFF Index occurring during publication cycles are issued as FDC NOTAMs (Title 14 CFR Part 139).



16.1 Example NOTAMs

1. !TTN 05/027 TTN SVC ARFF INDEX A WEF 0805151200
2. !FTW FTW SVC ARFF VEHICLE OTS INDEX UNCHANGED TIL 0710242100
   [FAA Order JO 7930.2, para 5-1-5a Example #1]
3. !FTW FTW SVC ARFF NOW INDEX A TIL 0709072300
   [FAA Order JO 7930.2, para 5-1-5b Example]
4. !STS STS SVC ARFF UNAVBL/AP CLSD TO ACR MORE THAN 30 PAX
   [FAA Order JO 7930.2, para 5-1-5c Example]

Source: US NOTAM Repository

16.2 AIXM Mapping and Translation

16.2.1 Scenario Details

TABLE 16.1

Attribute	Value
Description	ARFF index change, OTS or vehicle change.
Maps to Keyword	SVC
Feature Type Id	Service
Feature Xpath	aixm:FireFightingService
AIXM Mapping Diagram	Service/Service Overview Service/Airport Ground Services
NOTAM lifespan	48 hours
Start ASAP	Yes

16.2.2 Index Value [*category*]

Description: Indicates the airport index. This index determines the number of ARFF vehicles required and the minimum types and quantities of extinguishing agents carried by those vehicles.

Source: User-selected (optional).

TABLE 16.2
Index of Aircraft Rescue and Firefighting Equipment

14 CFR–PART 139 CERTIFICATED AIRPORTS: INDICES AND AIRCRAFT RESCUE AND FIRE FIGHTING EQUIPMENT REQUIREMENTS

Airport Index	Required No. Vehicles	Aircraft Length	Scheduled Departures	Agent + Water for Foam
A	1	< 90’	≥1	500#DC or HALON 1211 or 450#DC + 100gal H_2O
B	1 or 2	≥ 90’ , < 126’	≥ 5	Index A + 1500gal H_2O
		≥ 126’ , < 159’	< 5	
C	2 or 3	≥ 126’ , < 159’	≥ 5	Index A + 3000gal H_2O
		≥ 159’ , < 200’	< 5	
D	3	≥ 159’ , < 200’		Index A + 4000gal H_2O
		> 200’	< 5	
E	3	≥ 200’	≥ 5	Index A + 6000gal H_2O

Source: Airport/Facility Directory Index

16.2.3 Standard – Baseline [*standard*]

Description: Set Standard to FAA

Source: Baseline data.

TABLE 16.3
FAA Standard

Attribute	Value	
AIXM Path (UML)	AirportHeliport/ AirportGroundService/ FirefightingService/ standard	
AIXM Element X Path	FireFightingService/ timeSlice/ FireFightingServiceTimeSlice [interpretation:SNAPSHOT]/ standard	
AIXM Mapping	Class: FireFightingService	
Enumeration	CodeAviationStandardsType	
	FAA	…

16.2.4 Index Value – Baseline [*category*]

Description: Indicates the airport index. This index determines the number of ARFF vehicles required and the minimum types and quantities of extinguishing agents carried by those vehicles.

Source: Baseline Data.

TABLE 16.4
Baseline Index Value

Attribute	Value		
AIXM Path (UML)	AirportHeliport/ AirportGroundService/ FirefightingService/ category		
AIXM Element X Path	FireFightingService/ timeSlice/ FireFightingServiceTimeSlice [interpretation:SNAPSHOT]/ category		
AIXM Mapping	Class: FireFightingService		
Enumeration	CodeFireFightingType		
	AIXM	**Translations**	
	OTHER:A	ICAO	A
		FAA	A
		Plain Text	A

	OTHER:B	ICAO	B
		FAA	B
		Plain Text	B
	OTHER:C	ICAO	C
		FAA	C
		Plain Text	C
	OTHER:D	ICAO	D
		FAA	D
		Plain Text	D
	OTHER:E	ICAO	E
		FAA	E
		Plain Text	E

16.2.5 Status [operationalStatus]

Description: Indicates the operational capability of the service.

Source: User-selected (required).

TABLE 16.5
ARFF Operational Status

Attribute	Value		
AIXM Path (UML)	FireFightingService (feature)/ ServiceOperationalStatus		
AIXM Element X Path	FireFightingService/ timeSlice/ FireFightingServiceTimeSlice [interpretation:TEMPDELTA]/ availability/ ServiceOperationalStatus/ operationalStatus		
AIXM Mapping	ServiceOperationalStatus		
Enumeration	CodeStatusServiceType		
	AIXM	**Translations**	
	DOWNGRADED	ICAO	-
		FAA	-
		Plain Text	-
	UNSERVICEABLE	ICAO	VEHICLE OUT OF SERVICE
		FAA	VEHICLE OTS
		Plain Text	Vehicle Out of Service

16.3 Q Codes

TABLE 16.6
QCodes for ARFF

AIXM Code	Q Code	
ALL	**Series**	**A**
DOWNGRADED	Q Code	QFFCG
	Scope	A
	Traffic	IV
	Purpose	NBO
UNSERVICEABLE	Q Code	QFFAS
	Scope	A
	Traffic	IV
	Purpose	NBO

16.4 Business Rules

16.4.1 Template Business Rules

a. When *operationalStatus* and *value* equal to null, then "Select a status or airport index."

b. When *operationalStatus* equals "UNSERVICABLE" and baseline status equal to "UNSERVICABLE," then "ARFF is already UNSERVICABLE."

c. When *operationalStatus* equals "DOWNGRADED" then the user should only be able to select Index values lower than the baseline data value (A is lowest, E is highest)

16.4.2 Policy Business Rules

a. When baseline *index* equals "A" and *status* equals "UNSERICABLE," then issue the following NOTAM: "→ SVC ARFF UNAVBL/AP CLSD TO ACR MORE THAN 30 PAX →"
(FAA Order JO 7930.2, paragraph 5-1-5c).

b. Airport management can only report temporary (< 48 hours) changes to the airport index. Permanent changes are FDC NOTAMs (Title 14 CFR Part 139).

c. Only airports certificated under 14 CFR Part 139 can submit this type of NOTAM. It is conceivable that this information could be provided to FNS by AGIS in the future; however, for now it is suggested that this information be stored in a field in the airport/LOA TABLE suggested for the LOA issue with the Alternating Runway Closed for Snow/Ice Removal NOTAM scenario (see documentation on Alternating Runway Closed for Snow/Ice Removal NOTAM scenario for more information). This temporary work-around would allow FNS to determine if the Location ID matches a Part 139 Airport Location ID, thus allowing the airport to submit an ARFF NOTAM. If the Location ID does not match a Part 139 Airport Location ID, then the airport would not be allowed to create the NOTAM.

16.4.3 Data Encoding Business Rules

a. The element types *standard* and *category* (baseline) is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

c. The element type *category* (not baseline) is optional and must use a TimeSlice of type TEMPDELTA.

d. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

16.5 Sample AIXM Message

Sample NOTAM Message: SVC ARFF OTC NOW INDEX A


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <FireFightingService gml:id="FFSERV01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
```

```
      <timeSlice>
        <FireFightingServiceTimeSlice gml:id="FFSERV01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="Runway01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <airportHeliport xlink:href="#ACY"/>
          <category>OTHER:C</category>
          <standard>FAA</standard>
        </FireFightingServiceTimeSlice>
      </timeSlice>
      <timeSlice>
        <FireFightingServiceTimeSlice gml:id="FFSERV01_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="FFSERV01_TS02_TP01">
              <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-04-10T09:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>5</sequenceNumber>
          <availability>
            <ServiceOperationalStatus gml:id="SERVOPSTAT01">
              <operationalStatus>LIMITED</operationalStatus>
            </ServiceOperationalStatus>
          </availability>
          <category>OTHER:A</category>
        </FireFightingServiceTimeSlice>
      </timeSlice>
    </FireFightingService>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

16.6 Translation Templates

16.6.1 FAA

SVC ARFF VEHICLE *status* **[NOW INDEX** *index***] [INDEX UNCHANGED]**

16.6.2 ICAO E Line

SERVICE ARFF VEHICLE *status* **[NOW INDEX** *index***] [INDEX UNCHANGED]**

16.6.3 Plain Language

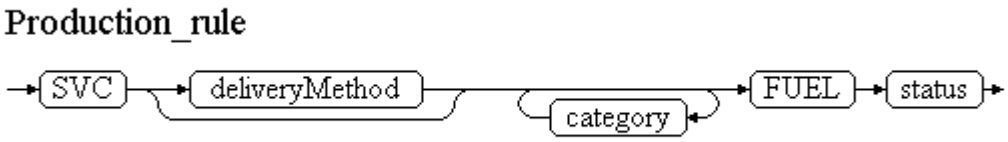
Accountable Airport: *accountableFacility*
Affected Airport: *affectedFacility*
NOTAM Number: XX/XXX
Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*
Aircraft Rescue and Fire Fighting Equipment
Status: Vehicle *operationalStatus*
[NOW INDEX *index***] [INDEX UNCHANGED]**

16.7 Additional Analysis

None.

17 Service – Fuel Availability

Issue a NOTAM if any type of fuel, as published, is temporarily unavailable.



17.1 Example NOTAMs

1. !BPI 12/015 BPI SVC 100LL FUEL UNAVBL
2. !CLI 09/002 CLI SVC JET A FUEL AVBL
3. !BDR 07/142 8B5 SVC FUEL UNAVBL EXC PPR 508-867-3585
4. !CVN 06/002 CVN SVC SELF SERVE FUEL UNAVBL

Source: US NOTAM Repository

17.2 AIXM Mapping and Translation

17.2.1 Scenario Details

TABLE 17.1

Attribute	Value
Description	Specify the availability of fuel
Maps to Keyword	SVC
Feature Type Id	Service
Feature Xpath	aixm:AirportSuppliesService
AIXM Mapping Diagram	Service/Service Overview Service/Airport Ground Services
NOTAM lifespan	
Start ASAP	No

17.2.2 Delivery Method [*deliveryMethod*]

Description: Indicates the delivery method of the fuel.

Source: User-selected (optional)

TABLE 17.2
Fuel Delivery Method

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Services/ Airport Ground Services Extension/ Fuel (object)/ deliveryMethod (attribute)
AIXM Element X Path	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation: SNAPSHOT]/ fuelSupply/ Fuel/ aim:extension/ deliveryMethod
AIXM mapping	Class: AIM Extension Airport Ground Services Extension

Enumeration	Aim Extension: CodeDeliveryMethodType		
	AIXM	**Translations**	
	SELF_SERVE	ICAO	SELF SERVE
		FAA	SELF SERVE
		Plain Text	Self serve
	MOBILE	ICAO	MOBILE
		FAA	MOBILE
		Plain Text	Mobile
	ALL	ICAO	**…**
		FAA	**…**
		Plain Text	ALL

17.2.3 Fuel Type [*category*]

Description: A code indicating a type of fuel for aircraft and helicopters (e.g. OCT73, OCT80-87, AVGAS, OCT100-130, OCT115-145, MOGAS, JET, A1, A1+, B, JP4, JP5).

Source: User-selected (required).

TABLE 17.3
Fuel Type

Attribute	Value		
AIXM Path (UML)	AirportHeliport/ AirportGroundService/ AirportSuppliesService/ Fuel/ category		
AIXM Element X Path	AirportSuppliesService/ timeSlice/ AirportSuppliesServiceTimeSlice [interpretation SNAPSHOT]/ fuelSupply/ Fuel/ category		
AIXM Mapping	Class: Fuel		
Enumeration	CodeFuelType		
	AIXM	**Translations**	
	A	ICAO	JET A
		FAA	JET A
		Plain Text	Jet A
	AVGAS_LL	ICAO	100LL
		FAA	100LL
		Plain Text	Octane 100 Low Lead
	MOGAS	ICAO	MOGAS
		FAA	MOGAS
		Plain Text	MOGAS
	OTHER:ALL	ICAO	…
		FAA	…
		Plain Text	All

17.2.4 Status [operationalStatus]

Description: Indicates the operational capability of the service.

Source: Assumed when Fuel Availability event specification is selected. Specific restriction selected by Data Encoding Business Rules.

TABLE 17.4
Fuel Operational Status

Attribute	Value		
AIXM Path (UML)	AirportHeliport/ AirportGroundService/ AirportSuppliesService/ Fuel/ operationalStatus		
AIXM Element X Path	AirportSuppliesService/ timeSlice/ AirportSuppliesServiceTimeSlice [interpretation SNAPSHOT]/ operationalStatus		
AIXM Mapping	ServiceOperationalStatus		
Enumeration	CodeStatusServiceType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	UNAVAILABLE
		FAA	UNAVBL
		Plain Text	Unavailable
	LIMITED	ICAO	UNSERVICEABLE EXC PRIOR PERMISSION
		FAA	UNAVBL EXC PPR
		Plain Text	Unavailable except by prior permission

17.3 Q Codes

TABLE 17.5
QCodes for Fuel Availabiliy

AIXM Code	Q Code	
ALL	**Series**	**A**
NORMAL	Q Code	QFUAU
	Scope	A
	Traffic	IV
	Purpose	NBO
LIMITED (w/ prior permission)	Q Code	QFUAP
	Scope	A
	Traffic	IV
	Purpose	NBO

17.4 Business Rules

17.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. If *category* equal null, then "Select a fuel type."

c. The user shall be able to select multiple *category* values.

d. When *operationalStatus* equals null, then "Select a status."

17.4.2 Policy Business Rules

None.

17.4.3 Data Encoding Business Rules

a. The element of type *category* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element of type *deliveryMethod* is optional and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

c. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

d. The *contactInformation* for Prior Permission is optional and must use a TimeSlice of type TEMPDELTA.

e. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT.

17.5 Sample AIXM Message

SVC MOBILE JET A FUEL UNAVBL


```
< ?xml version="1.0" encoding="UTF-8" ?>
<fns:FNSMessage gml:id="ID_1" xsi:schemaLocation="http://www.faa.gov/aim/fns/1.0 FNS_Messages.xsd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:fns="http://www.faa.gov/aim/fns/1.0"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns="http://www.aixm.aero/schema/5.1">
<fns:hasMember>
  <AirportSuppliesService gml:id="ADSUPPSERV01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportSuppliesServiceTimeSlice gml:id="ADSUPPSERV01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ADSUPPSERV01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <airportHeliport xlink:href="#ACY"/>
        <fuelSupply>
          <Fuel gml:id="FUEL01">
            <category>A</category>
            <extension>
              <aim:FuelExtension>
                <aim:deliveryMethod>MOBILE</aim:deliveryMethod>
              </aim:FuelExtension>
            </extension>
          </Fuel>
        </fuelSupply>
      </AirportSuppliesServiceTimeSlice>
    </timeSlice>
    <timeSlice>
      <AirportSuppliesServiceTimeSlice gml:id="ADSUPPSERV01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="ADSUPPSERV01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>7</sequenceNumber>
        <availability>
          <ServiceOperationalStatus gml:id="SERVOPSTAT01">
            <operationalStatus>UNAVAILABLE</operationalStatus>
          </ServiceOperationalStatus>
```

```
        </availability>
      </AirportSuppliesServiceTimeSlice>
    </timeSlice>
  </AirportSuppliesService>
</fns:hasMember>
<fns:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
```


17.6 Translation Templates

17.6.1 FAA

SVC [*deliveryMethod***]** *category* **FUEL** *operationalStatus*

17.6.2 ICAO E Line

SERVICE [*deliveryMethod***]** *category* **FUEL** *operationalStatus*

17.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Fuel Type: *category*

[Delivery Method: *deliveryMethod***]**

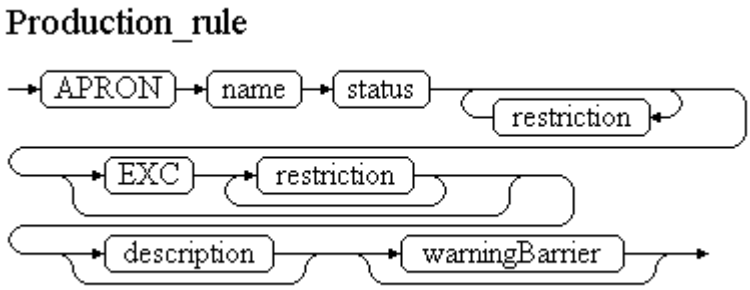
Status: *operationalStatus*

17.7 Additional Analysis

None.

18 Apron – Closure

Specify that an Apron/Ramp is closed or closed only to specific aircraft/operations.



18.1 Example NOTAMs

1. !KOA 05/025 KOA APRON SOUTH TRML SPOT 8 APRON CLSD TIL 0906200130 0810061600-0810062000
2. !SFO 10/033 SFO APRON GATE G92 CLSD 0530-1300 DLY WEF 0810130500-0810171300
3. !BGR 10/040 0B1 APRON CLSD SOUTH END BTWN TWY A AND TWY B WEF 0910171200-0910172030
4. !DFW 07/181 DFW APRON AEP 46 CLSD EXC AIRCRAFT WITH WINGSPAN 120 OR LESS

Source: US NOTAM Repository

18.2 AIXM Mapping and Translation

18.2.1 Scenario Details

TABLE 18.1

Attribute	Value
Description	Specifies the status of the apron/ramp.
Maps to Keyword	APRON
Feature Type Id	AirportHeliport/ Apron
Feature Xpath	aixm:Apron
AIXM Mapping Diagram	Apron Apron Area Availability
NOTAM lifespan	
Start ASAP	No

18.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 18.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)

AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

18.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (required – links to designator).

TABLE 18.3
Geometry of Apron

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element Xpath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

18.2.4 Status [operationalStatus]

Description: A unitary restriction or permission concerning the availability of an Apron for aircraft types during specific hours.

Source: Assumed when Apron Closure event specification is selected. Selected by Data-Encoding Business Rules.

TABLE 18.4
Apron Operational Status

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ operationalStatus		
AIXM Mapping	ApronAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed To

18.2.5 Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (by selecting an item from template as either as a restriction or exclusion).

TABLE 18.5
Designation of Restriction/Exception

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ type (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ type		
AIXM Mapping	ApronAreaUsage		
Enumeration	CodeUsageLimitationType		
	AIXM	**Translations**	
	RESERV	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

18.2.6 Aircraft Restrictions [*type*]

Description: Aircraft type restrictions.

Source: User-selected (optional).

TABLE 18.6
Operations Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ ConditionCombination (object)/ AircraftCharacteristic (object)/ type (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeAircraftType		
	AIXM	**Translations**	
	HELICOPTER	ICAO	HEL
		FAA	HEL
		Plain Text	helicopter
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	seaplane
	GLIDER	ICAO	GLD
		FAA	GLDR
		Plain Text	glider
	OTHER:SKIPLANES	ICAO	SKI PLANE

		FAA	SKI
		Plain Text	ski plane
	OTHER:ROTARYWING	ICAO	ROTARY WING
		FAA	ROTARY WING
		Plain Text	ROTARY wing
	OTHER:FIXEDWING	ICAO	FIXED WING
		FAA	FIXED WING
		Plain Text	fixed wing
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	charters
	OTHER:AIRCARRIERS	ICAO	AIR CARRIERS
		FAA	AIR CARRIERS
		Plain Text	air carriers
	OTHER:EXPERIMENTAL	ICAO	EXPERIMENTAL
		FAA	EXPERIMENTAL
		Plain Text	experimental

18.2.7 Operations Restrictions [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 18.7
Flight Status Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ / UsageCondition (object)/ / ConditionCombination (object)/ FlightCharacteristic (object)/ status (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight
	SAR	ICAO	SEARCH AND RESCUE
		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA
		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

18.2.8 Operations Restrictions [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 18.8
Military Flight Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ / UsageCondition (object)/ / ConditionCombination (object)/ FlightCharacteristic (object)/ / military (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV
		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation
	OTHER:ANG_ALERTACFT	ICAO	AIR NATIONAL GUARD ALERT ACFT
		FAA	ANG ALERT ACFT
		Plain Text	ANG Alert Aircraft
	OTHER:USCG_ACFT	ICAO	US COAST GUARD ACFT
		FAA	USCG ACFT
		Plain Text	U.S. Coast Guard Aircraft

18.2.9 Operations Restrictions [*note*]

Description: Annotation to describe whether limitations are inbound or outbound.

Source: User-entered (optional).

TABLE 18.9
Inbound/Outbound Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ annotation		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	INBOUND	ICAO	INBOUND
		FAA	INBOUND
		Plain Text	Inbound Aircraft
	OUTBOUND	ICAO	OUTBOUND
		FAA	OUTBOUND
		Plain Text	Outbound Aircraft

18.2.10 Aircraft Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft

Source: User-entered (optional).

TABLE 18.10
Aircraft Wingspan Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ UsageCondition (object)/ ConditionCombination (object)/ AircraftCharacteristic (object)/ wingspan (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [*wingspan*]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ UsageCondition (object)/ ConditionCombination (object)/ AircraftCharacteristic (object)/ wingspanInterpretation (attribute)		

AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*>
		FAA	GTR THAN <*value*>
		Plain Text	Greater than <*value*>
	BELOW (*type* = PERMIT)	ICAO	LESS THAN <*value*>
		FAA	LESS THAN <*value*>
		Plain Text	Less than <*value*>

18.2.11 Aircraft Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft

Source: User-entered (optional).

TABLE 18.11
Aircraft Weight Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ UsageCondition (object)/ ConditionCombination (object)/ AircraftCharacteristic (object)/ weight (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [*weight*]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronUsage (object)/ UsageCondition (object)/ ConditionCombination (object)/ AircraftCharacteristic (object)/ weightInterpretation (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ selection/ ConditionalCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	OVR <*value*>
		FAA	OVR <*value*>
		Plain Text	Over <*value*>
	AT_OR_BELOW (*type* = PERMIT)	ICAO	AT BLW <*value*>
		FAA	AT BLW <*value*>

		Plain Text	And below <*value*>

18.2.12 Description: [*annotation*]

Description: Brief additional description of the operational situation.

Source: User-entered free text. (optional)

TABLE 18.12
User-entered Restrictions/Exceptions

Attribute	Value	
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ annotation	
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	REMARK
Enumeration	TextNoteType	

18.2.13 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 18.13
Protective Barrier

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Apron Area Availability Extension/ aim:warningBarrier (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningBarrier		
AIXM Mapping	Class: AIM Extension Apron AreaAvailability		
Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

18.3 Q Codes

TABLE 18.14
QCodes for Apron Closure

AIXM Code	QCode	
ALL	**Series**	**A**
CLOSED	Q Code	QMNLC
	Scope	A
	Traffic	IV
	Purpose	NBO
ANY RESTRICTION/EXCEPTION COMBINATION	Q Code	QMNLT
	Scope	A
	Traffic	IV
	Purpose	NBO

18.4 Business Rules

18.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."
b. The addition of *restriction(s)* is optional. The user may be allowed to enter multiple *restrictions*.
c. The same *restriction* must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections)
d. A number (greater than zero) must be entered for *wingspan, weight*, and *speed* if selected.
e. When *restriction* equal to OTHER then enter text in additional text box. Please provide user with contraction look up TABLE.

18.4.2 Policy Business Rules

None.

18.4.3 Data Encoding Business Rules

a. For entering *name* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

c. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

d. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

e. For restrictions, *type* is FORBID. The values for wingspan Interpretation and weight Interpretation depend on *type* FORBID.

f. For exceptions, *type* is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on *type* PERMIT.

g. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

18.5 Sample AIXM Message (Closed)

Sample NOTAM Message: APRON GA APRON CLSD


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApronElement gml:id="AE01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AE01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedApron xlink:href="#RAMP01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </ApronElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS02">
        <gml:validTime></gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
```

```
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ApronAreaAvailability  gml:id="AAA01">
            <operationalStatus>CLOSED</operationalStatus>
          </ApronAreaAvailability>
        </availability>
      </ApronElementTimeSlice>
    </timeSlice>
  </ApronElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Apron gml:id="RAMP01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronTimeSlice gml:id="RAMP01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RAMP01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <name>GA</name>
      </ApronTimeSlice>
    </timeSlice>
  </Apron>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


18.6 Sample AIXM Message (CLSD w/ Exceptions)

Sample NOTAM Message: APRON GA APRON CLSD TO ARCT GTR THAN 118


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
```

```
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApronElement gml:id="AE01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AE01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedApron xlink:href="#RAMP01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </ApronElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RAPM01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <availability>
          <ApronAreaAvailability  gml:id="AAA01">
          <operationalStatus>LIMITED</operationalStatus>
            <usage>
              <ApronAreaUsage gml:id="APRONAREAUSAGE01">
                <type>FORBID</type>
                <selection>
                  <ConditionCombination gml:id="CC01">
                    <aircraft>
                      <AircraftCharacteristic gml:id="ARCTCHAR01">
                        <wingspan uom="FT">118</wingspan>
                        <wingSpanInterpretation>ABOVE</wingSpanInterpretation>
                      </AircraftCharacteristic>
                    </aircraft>
                  </ConditionCombination>
```

```
                    </selection>
                  </ApronAreaUsage>
                </usage>
              </ApronAreaAvailability>
            </availability>
          </ApronElementTimeSlice>
        </timeSlice>
      </ApronElement>
    </notamMessage:hasMember>
    <notamMessage:hasMember>
      <Apron gml:id="RAMP01">
      <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
        <timeSlice>
          <ApronTimeSlice gml:id="RAMP01_TS01">
            <gml:validTime>
              <gml:TimeInstant gml:id="RAMP01_TS01_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <sequenceNumber>4</sequenceNumber>
            <name>GA</name>
          </ApronTimeSlice>
        </timeSlice>
      </Apron>
    </notamMessage:hasMember>
    <notamMessage:hasMember>
      <AirportHeliport gml:id="ACY">
      <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
        <timeSlice>
          <AirportHeliportTimeSlice gml:id="ACY_TS01">
            <gml:validTime>
            <gml:TimeInstant gml:id="ACY_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <designator>ACY</designator>
            <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
            <locationIndicatorICAO>KACY</locationIndicatorICAO>
            <ARP>
              <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
                <gml:pos>39.27 -74.34</gml:pos>
              </ElevatedPoint>
            </ARP>
          </AirportHeliportTimeSlice>
        </timeSlice>
      </AirportHeliport>
    </notamMessage:hasMember>
    </notamMessage:AIXMBasicMessage>
```


18.7 Translation Templates

18.7.1 FAA

APRON *name status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]** **[***/restriction/restriction/…***] [***description***] [***warningBarrier***] WEF**

18.7.2 ICAO E Line

APRON *name status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] [***description***] [***warningBarrier***] WEF**

18.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Apron: *name*

Status: *status*

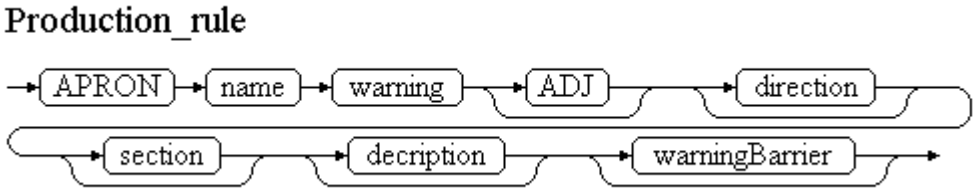
[Restriction(s): [*restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]**
[*warningBarrier***]]**
[Additional Information: *description***]**

18.8 Additional Analysis

None.

19 Apron – Construction Status

Specify construction type hazards on and around an Apron.



19.1 Example NOTAMs

1. !SDL 01/005 SDL APRON RAMP TRENCH 15 FT E CITY HANGARS/SHADES MARKED WITH CONES/BARRICADES 1 HR PPR 480-312-8418 FOR ACCESS TIL 1001052330

2. !HPN 07/020 HPN RAMP HANGER A OPEN EXCAVATION SE SIDE ADJ TO HANGER G LGTD AND BARRICADED

3. !SUX 08/017 SUX RAMP OPEN EXCAVATION APROX 450X150 FT BTN TWY C/ NORTH RAMP LGT/BARRICADED

Source: US NOTAM Repository

19.2 AIXM Mapping and Translation

19.2.1 Scenario Details

TABLE 19.1

Attribute	Value
Description	Specifies construction related hazards on or near the apron/ramp.
Maps to Keyword	APRON
Feature Type Id	AirportHeliport/ Apron
Feature Xpath	aixm:Apron
AIXM Mapping Diagram	Apron Apron Area Availability
NOTAM lifespan	
Start ASAP	No

19.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 19.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

19.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (required – links to designator).

TABLE 19.3
Apron Geometry

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element Xpath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

19.2.4 Warning Reason [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working on or near a runway).

Source: User-selected (required).

TABLE 19.4
Construction Warning

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ warning (attribute)		
AIXM Element X Path	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ warning		
AIXM Mapping	Class: ApronAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	OTHER:OPEN_EXCAVATION	ICAO	OPEN EXCAVATION
		FAA	OPEN EXCAVATION
		Plain Text	Open Excavation
	OTHER:STEEL_PLATES	ICAO	STEEL PLATES
		FAA	STEEL PLATES
		Plain Text	Steel Plates
	OTHER:CONSTR_AREA	ICAO	CONSTRUCTION AREA
		FAA	CONSTR AREA
		Plain Text	Construction Area

19.2.5 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the apron.

Source: User-selected (optional, required with warningSection and warningDirection).

TABLE 19.5
Adjacent

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningAdjacent (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/

	availability/ ApronAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ApronAreaAvailiability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

19.2.6 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional, required with warningSection).

TABLE 19.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningDirection (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ApronAreaAvailiability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	N	ICAO	N
		FAA	N
		Plain Text	North
	NE	ICAO	NE
		FAA	NE
		Plain Text	Northeast
	E	ICAO	E
		FAA	E
		Plain Text	East
	SE	ICAO	SE
		FAA	SE
		Plain Text	Southeast
	S	ICAO	S
		FAA	S
		Plain Text	South
	SW	ICAO	SW
		FAA	SW
		Plain Text	Southwest
	W	ICAO	W
		FAA	W
		Plain Text	West
	NW	ICAO	NW
		FAA	NW
		Plain Text	Northwest

19.2.7 Apron Section [warning*Section*]

Description: A code indicating the position of an item on a surface of an apron.

Source: User-selected (optional, but required with warningDirection).

TABLE 19.7
Warning Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningSection (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension Apron AreaAvailability		
Enumeration	AIM Extension: CodeApronSectionType		
	AIXM	**Translations**	
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	OTHER:END	ICAO	END
		FAA	END
		Plain Text	end
	OTHER:SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

19.2.8 Description: [*annotation*]

Description: Brief additional description of the operational situation.

Source: User-entered free text. (optional)

TABLE 19.8
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ annotation	
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	REMARK
Enumeration	TextNoteType	

19.2.9 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 19.9
Protective Barrier

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningBarrier (attribute)

AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningBarrier		
AIXM Mapping	Class: AIM Extension Apron AreaAvailability		
Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

19.3 Q Codes

TABLE 19.10
QCodes for Apron Construction Status

AIXM Code	**Q Code**	
ALL	**Series**	**A**
ALL AIXM CODES	Q Code	QMNHW
	Scope	A
	Traffic	IV
	Purpose	BO

19.4 Business Rules

19.4.1 Template Business Rules

a. When *name* equal to null, then "Specify an apron."

b. When *warning* equal to null, then "Select a Construction Warning."

c. When *warningAdjacent* equal to YES, then *warningDirection* and *warningSection* are required.

d. When *warningAdjacent* equal to NO, then *warningDirection* and *warningSection* are optional.

19.4.2 Policy Business Rules

None.

19.4.3 Data Encoding Business Rules

a. The element type *name* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *warningAdjacent* is required and must use a TimeSlice of type TEMPDELTA.

c. The element type *warning* is required and must use a TimeSlice of type TEMPDELTA. If the user does not select a specific reason, then *warning* will be EQUIP.

d. The element types *warningDirection* and *warningSection* are optional and must use a TimeSlice of type TEMPDELTA.

e. If the element types warningDirection and warningSection are not selected, then remove the line in the message.

f. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT.

19.5 Sample AIXM Message

Sample NOTAM Message: APRON FAA RAMP STEEL PLATES ADJ E SIDE APROX 450X150 FT


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApronElement gml:id="AE01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AE01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedApron xlink:href="#RAMP01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </ApronElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronTimeSlice gml:id="RAMP01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RAPM01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <annotation>
```

```
            <Note gml:id="NOTE01">
              <propertyName>warning</propertyName>
              <purpose>REMARK</purpose>
              <translatedNote>
                <LinguisticNote gml:id="LN01">
                  <note> APROX 450X150 FT </note>
                </LinguisticNote>
              </translatedNote>
            </Note>
          </annotation>
          <availability>
            <ApronAreaAvailability gml:id="RAMP01_AV">
              <warning>OTHER:STEEL PLATES</warning>
              <extension>
                <aim:ApronAreaAvailabilityExtension>
                  <aim:warningAdjacent>YES</aim:warningAdjacent>
                  <aim:warningDirection>E</aim:warningDirection>
                  <aim:warningSection>OTHER:SIDE</ aim:warningSection >
                </aim: ApronAreaAvailabilityExtension>
              </extension>
            </ApronAreaAvailability>
          </availability>
        </ApronElementTimeSlice>
      </timeSlice>
    </ApronElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Apron gml:id="RAMP01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <ApronTimeSlice gml:id="RAMP01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RAMP01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <name>FAA</name>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </ApronTimeSlice>
      </timeSlice>
    </Apron>
  </notamMessage:hasMember>
  </notamMessage:AIXMBasicMessage><notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="ACY_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
```

```
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


19.6 Translation Templates

19.6.1 FAA

APRON *name warning warningAdjacent* **[***warningDirection***] [***warningSection***] [***description***] [***warningBarrier***] WEF**

19.6.2 ICAO E Line

APRON *name warning warningAdjacent* **[***warningDirection***] [***warningSection***] [***description***] [***warningBarrier***]**

19.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Apron: *name*

Warning: *warning*

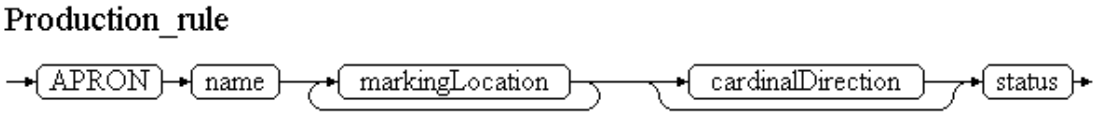
[Location: *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***warningBarrier***]]**
[Additional Information: *description***]**

19.7 Additional Analysis

None.

20 Apron – Ground Markings Status

Apron ground marking status for identifying which ground markings are not visible.



20.1 Example NOTAMs

1. !AKN 08/045 AKN EAST RAMP NONSTD MARKING

Source: US NOTAM Repository

20.2 AIXM Mapping and Translation

20.2.1 Scenario Details

TABLE 20.1

Attribute	Value
Description	Specify the status of the markings on a Apron
Maps to Keyword	Apron
Feature Type Id	AirportHeliport/ Marking
Feature Xpath	aixm:ApronMarking
AIXM Mapping Diagram	Markings/Surface Marking
NOTAM lifespan	
Start ASAP	Yes

20.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 20.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

20.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (required – links to designator).

TABLE 20.3
Apron Geometry

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

20.2.4 Marking Type [*markingLocation*]

Description: A code indicationg the location of the marking relative to the surface.

Source: User-selected (*markingLocation* or *type* required)

TABLE 20.4
Ground Marking Location

Attribute	Value		
AIXM Path (UML)	ApronMarking (feature)/ markingLocation (attribute)		
AIXM Element XPath	ApronMarking/ timeSlice/ ApronMarkingTimeSlice [interpretation SNAPSHOT]/ markingLocation		
AIXM Mapping	Class: ApronMarking		
Enumeration	CodeApronSectionType		
	AIXM	**Translations**	
	EDGE	ICAO	EDGE LINE
		FAA	EDGE LN
		Plain Text	Edge Line
	OTHER:CENTERLINE	ICAO	CENTERLINE
		FAA	CL
		Plain Text	Centerline
	OTHER:ALL	ICAO	…
		FAA	…
		Plain Text	…

20.2.5 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional)

TABLE 20.5
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Markings/ ApronMarking (extension)/ cardinalDirection (attribute)		
AIXM Element X Path	ApronMarking/ timeSlice/ ApronMarkingTimeSlice [interpretation SNAPSHOT]/ extension/ aim:cardinalDirection		
AIXM Mapping	Class: AIM Extension ApronMarking		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE

		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

20.2.6 Status [*status*]

Description: The operational status of the surface markings.

Source: User-selected (required).

TABLE 20.6
Ground Marking Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Markings/ ApronMarking (extension)/ status (attribute)		
AIXM Element XPath	ApronMarking/ timeSlice/ ApronMarkingTimeSlice [interpretation SNAPSHOT]/ extension/ aim:status		
AIXM Mapping	Class: AIM Extension ApronMarking		
Enumeration	AIM Extension:CodeMarkingStatusType		
	AIXM	**Translations**	
	OBSC	ICAO	MARKINGS OBSCURED
		FAA	MARKINGS OBSC
		Plain Text	Markings Obscured
	PART_OBSC	ICAO	MARKINGS PARTIALLY OBSCURED
		FAA	MARKINGS PARTIALLY OBSC
		Plain Text	Markings Partially Obscured
	FADED	ICAO	MARKINGS FADED
		FAA	MARKINGS FADED
		Plain Text	Faded
	REMOVED	ICAO	MARKINGS REMOVED
		FAA	MARKINGS REMOVED
		Plain Text	MARKINGS REMOVED
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	Unmarked
	NON_STANDARD	ICAO	NONSTD MARKINGS
		FAA	NONSTD MARKINGS
		Plain Text	Non-Standard Markings

20.3 Q Codes

TABLE 20.7
QCodes for Ground Marking Status

AIXM Code	Q Code	
ALL	Series	A
	Q Code	QMMXX
	Scope	A
	Traffic	IV
	Purpose	MNBO

20.4 Business Rules

20.4.1 Template Business Rules

a. If *designator* equal to null then "Select a designator."

b. When *type* equals null then "Select a Marking Type."

c. One of the element types, *markingLocation* or *type* is required. Multiple selections are allowed.

d. Location is optional.

e. If *condition* or *apronMarkingType* are null, then "Select the Marking Status."

20.4.2 Policy Business Rules

None

20.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *condition* and additional information use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required and should point to the associated Taxiway and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

d. The associated Apron should have interpretation SNAPSHOT and contain the designator and an xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT.

20.5 Sample AIXM Message (Closed)

Sample NOTAM Message: APRON FAA APRON EDGE LN PARTIALLY OBSC


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApronMarking gml:id="AM01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronMarkingTimeSlice gml:id="AM01_TS01">
```

```
        <gml:validTime>
          <gml:TimeInstant gml:id="AM01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <markingLocation>EDGE</markingLocation>
        <markedApron xlink:href="#APRON01"/>
      </ApronMarkingTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronMarkingTimeSlice gml:id="AM01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="AM01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
          <extension>
            <aim:ApronGroundMarkingExtension>
              <aim:status>PART_OBSC</aim:status>
            </aim: ApronGroundMarkingExtension >
          </extension>
      </ApronMarkingTimeSlice>
    </timeSlice>
  </ApronMarking>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Apron gml:id="APRON01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronTimeSlice gml:id="APRON01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="APRON01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <name>FAA RAMP</name>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </ApronTimeSlice>
    </timeSlice>
  </Apron>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
```

```
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


20.6 Translation Templates

20.6.1 FAA

APRON *name* [*markingLocation*] [*type*] [*location*] [*status*]

20.6.2 ICAO E Line

APRON *name* [*markingLocation*] [*type*] [*location*] [*status*]

20.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *afffectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Apron Surface Markings

Affected Apron: *designator*

Marking Type: [*markingLocation*] [*type*]

Location: [*location*]

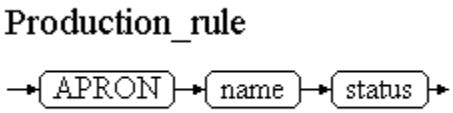
Status: [*condition*] [*apronMarkingType*]

20.7 Additional Analysis

None.

21 Apron – Ground Lighting Status

Apron lights are out of service.



21.1 Example NOTAMs

1. !AKN 03/011 AKN RAMP GA RAMP LGTS OTS

Source: US NOTAM Repository

21.2 AIXM Mapping and Translation

21.2.1 Scenario Details

TABLE 21.1

Attribute	Value
Description	Specifies lights out of service on the apron/ramp.
Maps to Keyword	APRON
Feature Type Id	AirportHeliport/ Lighting/ Surface Lighting Elements
Feature Xpath	aixm:ApronLightSystem
AIXM Mapping Diagram	Lighting/Surface Lighting Elements
NOTAM lifespan	
Start ASAP	No

21.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 21.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

21.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (required – links to designator).

TABLE 21.3
Apron Geometry

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

21.2.4 Status [operationalStatus]

Description: A unitary restriction or permission concerning the availability of an Apron for aircraft types, during specific hours.

Source: Assumed when Apron Closure event specification is selected. Selected by Data Encoding Business Rules. (required)

TABLE 21.4
Ground Lighting Operational Status

Attribute	Value		
AIXM Path (UML)	ApronLightSystem (feature)/ GroundLightingAvailability (object)/ operationalStatus (attribute)		
AIXM Element Xpath	ApronLightSystem/ timeSlice/ ApronLightSystemTimeSlice [interpretation TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus		
AIXM Mapping	GroundLightingAvailability		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	LGTS OUT OF SERVICE
		FAA	LGTS OTS
		Plain Text	Lights Out of service
	DOWNGRADED*	ICAO	For segment, see above. For the rest, see below.
		FAA	
		Plain Text	
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ annotation		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		
	NON_STANDARD	ICAO	LGTS NONSTD
		FAA	LGTS NONSTD
		Plain Text	Lights Non-Standard
	OBSC	ICAO	LGTS OBSCURED
		FAA	LGTS OBSC
		Plain Text	Lights Obscured

21.3 Q Codes

TABLE 21.5
QCodes for Ground Lighting Status

AIXM Code	Q Code	
ALL	**Series**	**A**
UNSERVICEABLE	Q Code	QXXXX (LGTS OTS)
	Scope	A
	Traffic	IV
	Purpose	NBO
DOWNGRADED	Q Code	QXXXX (SECTION LGTS OTS)
	Scope	A
	Traffic	IV
	Purpose	NBO

21.4 Business Rules

21.4.1 Template Business Rules

a. If *name* equals null, then "Select a designator."

b. When *status* equals null, then "Select a status."

21.4.2 Policy Business Rules

None.

21.4.3 Data Encoding Business Rules

a. For entering association (xlink:href) to lightedApron, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and use a TimeSlice of type TEMPDELTA.

c. If lights are out of service for the entire Apron, *operationalStatus* is UNSERVICEABLE.

d. If lights are out of service for only a segment of an Apron, *operationalStatus* is DOWNGRADED.

e. The associated Apron should have interpretation SNAPSHOT and contain the name of the affected Apron and the associated (xlink:href) AirportHeliport.

f. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

21.5 Sample AIXM Message

Sample NOTAM Message: APRON GA RAMP LGTS OTS


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
```

```
  <ApronLightSystem gml:id="ALS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronLightSystemTimeSlice gml:id="ALS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ALS01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <lightedApron xlink:href="#RAMP01"/>
      </ApronLightSystemTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronLightSystemTimeSlice gml:id="ALS01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="ALS01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <availability>
          <GroundLightingAvailability gml:id="GLA01">
            <operationalStatus>UNSERVICEABLE</operationalStatus>
          </GroundLightingAvailability>
        </availability>
      </ApronLightSystemTimeSlice>
    </timeSlice>
  </ApronLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Apron gml:id="RAMP01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
      <ApronTimeSlice gml:id="RAMP01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RAMP01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <name>GA</name>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </ApronTimeSlice>
    </timeSlice>
  </Apron>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
```

```
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


21.6 Translation Templates

21.6.1 FAA

APRON *name operationalStatus*

21.6.2 ICAO E Line

APRON *name operationalStatus*

21.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Apron Lighting

Apron: *name*

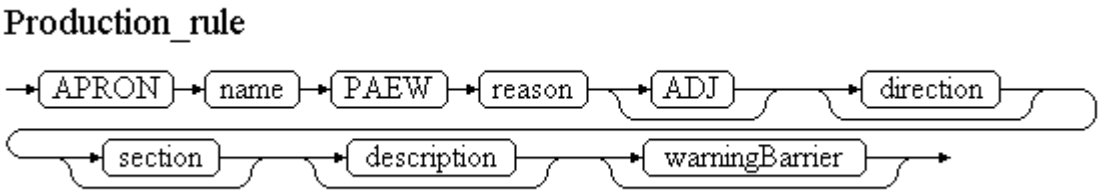
Status: *operationalStatus*

21.7 Additional Analysis

A search of the NOTAM database from the past year revealed that there were only five cases (out of 3,060 with a keyword "APRON") reporting APRON LGTS OTS. The majority of the NOTAMS with the keyword "APRON" were related to closing an apron or reporting snow/ice conditions on the apron.

22 Apron – Personnel and Equipment Working

Specify personnel warning for an apron.



22.1 Example NOTAMs

1. !ORF 06/054 ORF APRON MAIN APRON PAEW WEF 0906301900
2. !MHT 07/049 MHT APRON TRML APRON PAEW AT GATES 7,8,7A TIL 0908212100

Source: US NOTAM Repository

22.2 AIXM Mapping and Translation

22.2.1 Scenario Details

TABLE 22.1

Attribute	Value
Description	Specifies a personnel warning on or near the apron/ramp.
Maps to Keyword	APRON
Feature Type Id	AirportHeliport/ Apron
Feature Xpath	aixm:Apron
AIXM Mapping Diagram	Apron Apron Area Availability
NOTAM lifespan	
Start ASAP	No

22.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 22.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

22.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (required – links to designator).

TABLE 22.3
Apron Geometry

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element Xpath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

22.2.4 Warning Reason [*warning*]

Description: A code indicating a reason for caution in airport operations. For example, work in progress on an apron.

Source: User-selected (required). Default is EQUIP.

TABLE 22.4
Personnel and Equipment Working Warning

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ warning (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ warning		
AIXM Mapping	Class: ApronAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	EQUIP*	ICAO	PERSONNEL AND EQUIPMENT WORKING
		FAA	PAEW
		Plain Text	Personnel and equipment working
	RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	PAVING	ICAO	SFC PAVING
		FAA	SFC PAVING
		Plain Text	surface paving
	PAINTING	ICAO	SFC PAINTING
		FAA	SFC PAINTING
		Plain Text	surface painting
	GRASS_CUTTING	ICAO	GRASS CUTTING
		FAA	GRASS CUTTING
		Plain Text	grass cutting
	OTHER:CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTR
		Plain Text	Construction
	OTHER:MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE

		Plain Text	Maintenance
	OTHER:SNOW_REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow removal
	OTHER:ICE_REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	OTHER:CONT_BURN	ICAO	CONTROLLED BURN/HEAVY SMOKE
		FAA	CONTROLLED BURN/HEAVY SMOKE
		Plain Text	Controlled Burn and Heavy Smoke
	OTHER:HEAVY_EQUIP	ICAO	HEAVY EQUIPMENT
		FAA	HEAVY EQUIPMENT
		Plain Text	Heavy Equipment

**If no reason is selected, the default is EQUIP.*

22.2.5 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the apron.

Source: User-selected (optional, required with warningSection and warningDirection).

TABLE 22.5
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningAdjacent (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ApronAreaAvailiability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

22.2.6 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional, required with warningSection).

TABLE 22.6
Cardinal Direction

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningDirection (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningDirection
AIXM Mapping	Class: AIM Extension ApronAreaAvailiability

Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	N	ICAO	N
		FAA	N
		Plain Text	North
	NE	ICAO	NE
		FAA	NE
		Plain Text	Northeast
	E	ICAO	E
		FAA	E
		Plain Text	East
	SE	ICAO	SE
		FAA	SE
		Plain Text	Southeast
	S	ICAO	S
		FAA	S
		Plain Text	South
	SW	ICAO	SW
		FAA	SW
		Plain Text	Southwest
	W	ICAO	W
		FAA	W
		Plain Text	West
	NW	ICAO	NW
		FAA	NW
		Plain Text	Northwest

22.2.7 Apron Section [warning*Section*]

Description: A code indicating the position of an item on a surface of an apron.

Source: User-selected (optional, but required with warningDirection).

TABLE 22.7
Warning Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningSection (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension Apron AreaAvailability		
Enumeration	AIM Extension: CodeApronSectionType		
	AIXM	**Translations**	
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	OTHER:END	ICAO	END
		FAA	END
		Plain Text	end
	OTHER:SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

22.2.8 Description: [*annotation*]

Description: Brief additional description of the operational situation.

Source: User-entered free text. (optional)

TABLE 22.8
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Apron (feature)/ ApronAreaAvailability (object)/ ApronAreaUsage (object)/ UsageCondition (object)/ annotation	
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ usage/ ApronAreaUsage/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	REMARK
Enumeration	TextNoteType	

22.2.9 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 22.9
Protective Barrier

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Apron Area Availability (extension)/ warningBarrier (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation TEMPDELTA]/ availability/ ApronAreaAvailability/ extension/ aim:warningBarrier		
AIXM Mapping	Class: AIM Extension Apron AreaAvailability		
Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

22.3 Q Codes

TABLE 22.10
QCodes for Apron PAEW

AIXM Code	Q Code	
ALL	**Series**	**A**
ALL AIXM CODES	Q Code	QMNHW (apron work in progress)
	Scope	A
	Traffic	IV
	Purpose	BO

22.4 Business Rules

22.4.1 Template Business Rules

a. When *name* equal to null, then "Specify an apron."

b. For warning, Personnel and Equipment Working (EQUIP) is the default value. Additional reasons are not required (but are accepTABLE). If an option other than EQUIP is selected, the NOTAM should read "PAEW *warning*".

c. When *warningAdjacent* equal to YES, then *warningDirection* and *warningSection* are required.

d. When *warningAdjacent* equal to NO, then *warningDirection* and *warningSection* are optional.

22.4.2 Policy Business Rules

None.

22.4.3 Data Encoding Business Rules

a. The element type *name* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *warningAdjacent* is required and must use a TimeSlice of type TEMPDELTA.

c. The element type *warning* is required and must use a TimeSlice of type TEMPDELTA. If the user does not select a specific reason, then *warning* will be EQUIP.

d. The element types *warningDirection* and *warningSection* are optional and must use a TimeSlice of type TEMPDELTA.

e. If the element types *warningDirection* and *warningSection* are not selected, then remove the line in the message.

f. An xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT.

g. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

22.5 Sample AIXM Message

Sample NOTAM Message: APRON FAA RAMP PAEW ADJ N SIDE


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation=http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApronElement gml:id="AE01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AE01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedApron xlink:href="#RAMP01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </ApronElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronTimeSlice gml:id="RAMP01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RAPM01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <availability>
          <ApronAreaAvailability gml:id="RAMP01_AV">
            <warning>EQUIP</warning>
            <extension>
              <aim:ApronAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>E</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim: ApronAreaAvailabilityExtension>
```

```
            </extension>
          </ApronAreaAvailability>
        </availability>
      </ApronElementTimeSlice>
    </timeSlice>
  </ApronElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Apron gml:id="RAMP01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
      <ApronTimeSlice gml:id="RAMP01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RAMP01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <name>FAA</name>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </ApronTimeSlice>
    </timeSlice>
  </Apron>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage><notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


22.6 Translation Templates

22.6.1 FAA

APRON *name* **PAEW [***reason***]** *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***note***] [***warningBarrier***] WEF**

22.6.2 ICAO E Line

APRON *name* **PAEW [***reason***]** *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***note***] [***warningBarrier***]**

22.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Personnel and Equipment Working

[Warning: *reason***]** (if different from EQUIP)

Affected Apron: *name*

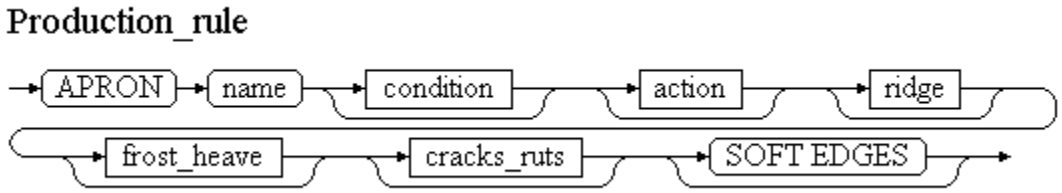
[Location: *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***note***] [***warningBarrier***]]**

22.7 Additional Analysis

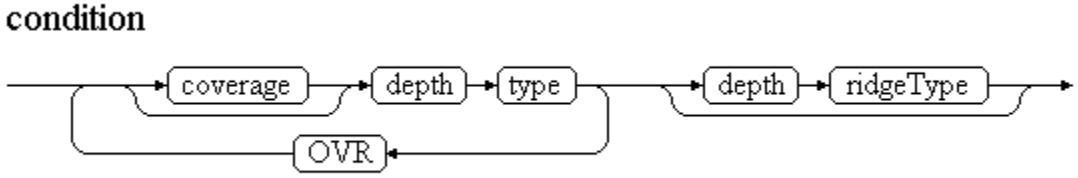
None.

23 Apron – Surface Condition

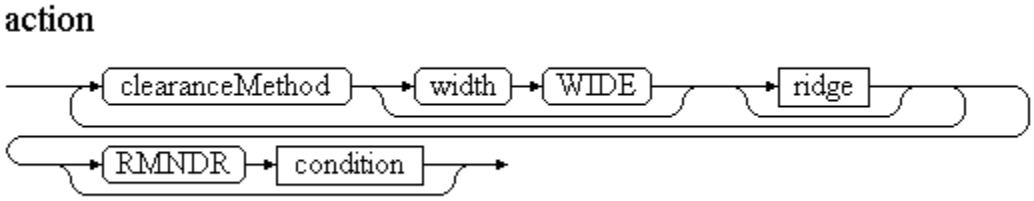
This scenario is used to report snow, ice, slush, water conditions and actions such as plowed, swept, sanded and deiced as outlined in Order 7930.2M section 5-1-4.



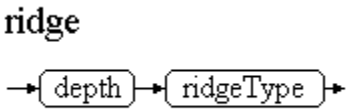
Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



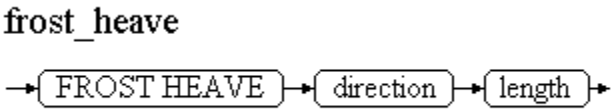
Action(s) – plowed, swept, sanded, deiced, etc.



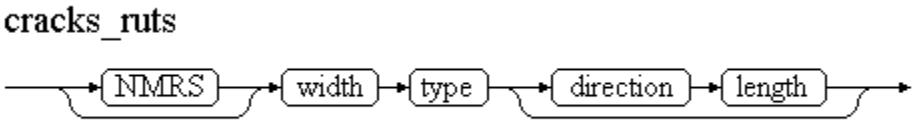
Ridge – snowbank, berm and windrows



Frost Heave



Cracks/Ruts



23.1 Example NOTAMs

1. !MEM MEM RAMP FEDEX FEEDER RAMP 1 IN ICE WEF 0711220815
2. !BNA BNA APRON AIR CARGO APRON THN ICE WEF 0712020200

Source: FAA Order JO 7930.2

23.2 AIXM Mapping and Translation General

23.2.1 Scenario Details

TABLE 23.1

Attribute	Value
Description	Specify the surface conditions for an apron.
Feature Type Id	Apron
Feature XPath	aixm:Apron
AIXM Mapping Diagram	Surface Contamination
NOTAM lifespan	24 Hours
Start ASAP	Yes

23.2.2 Name [*name*]

Description: The full textual name or designator used to identify an apron at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 23.2
Apron Name (designator)

Attribute	Value
AIXM Path (UML)	Apron (feature)/ name (attribute)
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: Apron
Min length	1
Max length	60
Enumeration	TextNameType

23.2.3 Apron Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

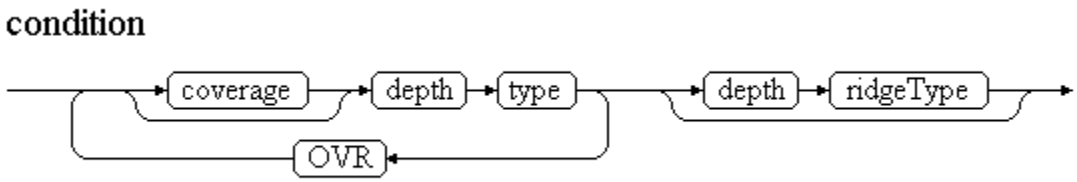
Source: User-selected from baseline data (required – links to designator).

TABLE 23.3
Apron Geometry

Attribute	Value
AIXM Path (UML)	ApronElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	ApronElement/ timeSlice/ ApronElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

23.3 AIXM Mapping and Translation Condition(s)

Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



23.3.1 Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 23.4
Surface Coverage

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ proportion(attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ proportion		
AIXM Mapping	Class: ApronContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…
		Plain Text	Fully Covered
	50	Text NOTE	
AIXM Path (UML)	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ note (attribute		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	proportion	
	purpose	DESCRIPTION	

Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

23.3.2 Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 23.5
Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ depth		
AIXM Mapping	Class: ApronContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

23.3.3 Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 23.6
Layer Order

Attribute	Value
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer
Datatype	NoSequenceType
Min inclusive	0

23.3.4 Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

TABLE 23.7
Type of Surface Contamination

Attribute	Value
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/

	SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLUSH
		Plain Text	Slush
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	Ice
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PACKED SN
		Plain Text	Packed Snow
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LOOSE SN
		Plain Text	Loose Snow
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SN/ICE
		Plain Text	Snow and Ice
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WET SN
		Plain Text	Wet Snow
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding

23.3.5 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 23.8
Drift Depth

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

23.3.6 Ridge Type (DRIFT) [*ridgeType*]

Description: The type of drift (such as a snowbank).

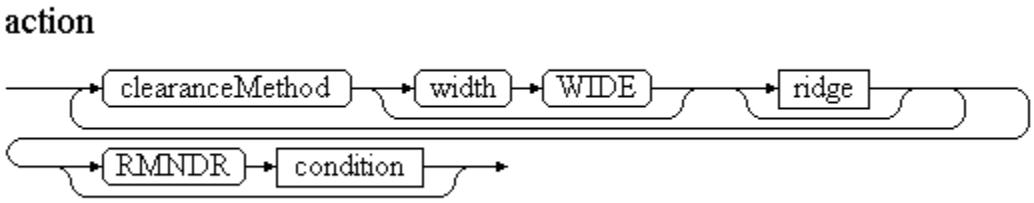
Source: In this section, constrained to be drift.

TABLE 23.9
Drift Type

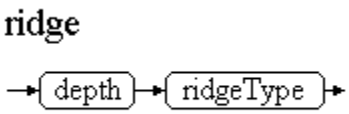
Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift

23.4 AIXM Mapping and Translation Action(s)

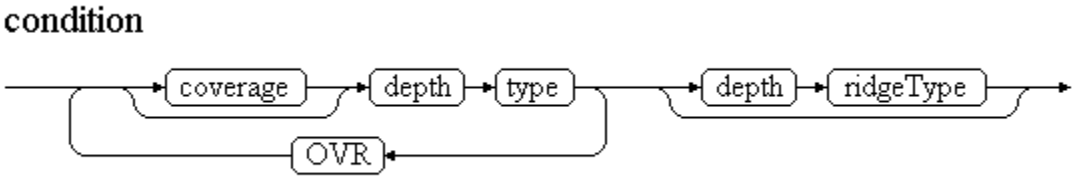
Action(s) – plowed, swept, sanded, deiced, etc.



Ridge – snowbank, berm and windrows



Condition(s) – snow, snow and ice, slush, mud, water, frost, drifts, etc.



23.4.1 Clearance Method [*clearanceMethod*]

Description: The method used to clear the surface contamination.

Source: User-selected (required with clearedWidth, ridgeType, ridgeDepth, and/or remaining conditions)

TABLE 23.9
Clearance Method

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ SurfaceContamination (extension)/ clearanceMethod (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ extension/ aim:clearanceMethod		
AIXM Mapping	Class: AIM Surface Contamination Extension		
Enumeration	AIM Extension: aim:CodeClearanceMethodType		
	AIXM	**Translations**	
	PLOWED	ICAO	PLOWED
		FAA	PLW
		Plain Text	plowed
	SANDED	ICAO	SANDED
		FAA	SA
		Plain Text	sanded
	SWEPT	ICAO	SWEPT
		FAA	SWEPT
		Plain Text	swept
	PATCHY SAND	ICAO	PATCHY SAND
		FAA	PTCHY SA
		Plain Text	patchy sand
	TREATED DEICED LIQUID	ICAO	DEICED LIQUID
		FAA	DEICED LIQUID
		Plain Text	deiced liquid
	TREATED DEICED SOLID	ICAO	DEICED SOLID
		FAA	DEICED SOLID
		Plain Text	deiced solid

23.4.2 Cleared Width [*clearedWidth*]

Description: Width of Apron cleared of contamination, if less than the total width.

Source: User-entered (optional)

TABLE 23.10
Cleared Width

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ ApronContamination (extension)/ clearedWidth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ extension/ aim:clearedWidth		
AIXM Mapping	Class: AIM Surface Contamination Extension		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

23.4.3 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 23.11
Drift Depth

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

23.4.4 Type [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

TABLE 23.2
Drift Type

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType
AIXM Mapping	Class: AIM Extension Ridge

Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift
	BERM	ICAO	BERM
		FAA	BERM
		Plain Text	berm
	SNOWBANK	ICAO	SN BANKS
		FAA	SNBNK
		Plain Text	snowbank
	WINDROWS	ICAO	WINDROWS
		FAA	WINDROWS
		Plain Text	windrows

23.4.5 Remaining Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 23.3
Remainder Surface Coverage

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ proportion(attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ proportion		
AIXM Mapping	Class: ApronContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…
		Plain Text	Fully Covered
	50	Text NOTE (below)	
AIXM Path (UML)	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ note (attribute		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant/ ApronContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	proportion	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

23.4.6 Remaining Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 23.4
Remainder Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ depth		
AIXM Mapping	Class: ApronContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

23.4.7 Remaining Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 23.5
Remainder Layer Order

Attribute	Value
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer
Datatype	NoSequenceType
Min inclusive	0

23.4.8 Remaining Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

TABLE 23.6
Remainder Type of Surface Contamination

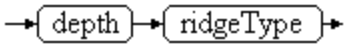
Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water

	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLUSH
		Plain Text	Slush
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	Ice
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PACKED SN
		Plain Text	Packed Snow
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LOOSE SN
		Plain Text	Loose Snow
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SN/ICE
		Plain Text	Snow and Ice
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WET SN
		Plain Text	Wet Snow
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding

23.5 AIXM Mapping and Translation Ridge

Ridge – snowbank, berm and windrows

ridge



23.5.1 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 23.7
Drift Depth

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

23.5.2 Ridge Type (DRIFT) [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

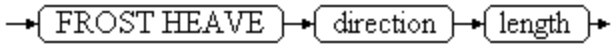
TABLE 23.8
Drift Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift

23.6 AIXM Mapping and Translation Frost Heave

Frost Heave

frost_heave



23.6.1 FROST HEAVE [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with direction or length)

TABLE 23.9
Frost Heave

Attribute	Value		
AIXM Path (UML)	Apron (feature)/ ApronSectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / ApronContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	Class: SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	OTHER:FROST_HEAVE	ICAO	FROST HEAVE
		FAA	FROST HEAVE
		Plain Text	Frost Heave

23.6.2 Frost Heave Direction [*cardinalDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 23.20
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ cardinalDirection (attribute)		
AIXM Element X Path	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / layer/ SurfaceContaminationLayer/ extension/ aim:cardinalDirection		
AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE

		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

23.6.3 Frost Heave Length [contaminantLength]

Description: Length of the contaminant.

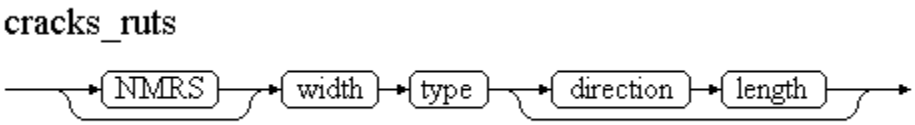
Source: User-entered (optional)

TABLE 23.10
Frost Heave Length

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ contaminantLength (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation: TEMPDELTA]/ contaminant / layer/ SurfaceContaminationLayer/ extension/ aim:contaminantLength		
AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

23.7 AIXM Mapping and Translation Cracks/Ruts and Soft Edges

Cracks/Ruts



Soft Edges

23.7.1 NMRS [numerousDefects]

Description: A code indicating whether there are numerous cracks/ruts on the surface.

Source: User-selected (optional).

TABLE 23.11
Numerous

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ numerousDefects (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:numerousDefects		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	NMRS
		FAA	NMRS
		Plain Text	NMRS
	NO	ICAO	…
		FAA	…
		Plain Text	…

23.7.2 Width [*crackWidth*]

Description: Width of a surface Defect

Source: User-entered (required, with NMRS and crackType)

TABLE 23.12
Crack Width

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackWidth (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackWidth		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN
		ICAO	CM

23.7.3 Type [*crackType*]

Description:

Source: User-selected (required with crackWidth and NMRS).

TABLE 23.13
Crack Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackType (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackType		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	AIM Extension: aim:crackType		
	AIXM	**Translations**	
	CRACKS	ICAO	CRACKS

		FAA	CRACKS
		Plain Text	cracks
	RUTS	ICAO	RUTS
		FAA	RUTS
		Plain Text	ruts

23.7.4 Direction [*crackDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 23.14
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackDirection (attribute)		
AIXM Element X Path	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackDirection		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

23.7.5 Length [*crackLength*]

Description: Length of a surface Defect

Source: User-entered (optional)

TABLE 23.15
Crack Length

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackLength (attribute)		
AIXM Element XPath	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackLength		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

23.7.6 Soft Edges [*softEdges*]

Description: A code indicating whether there are soft edges on the surface.

Source: User-selected (optional).

TABLE 23.16
Soft Edges

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ softEdges (attribute)		
AIXM Element Xpath	Apron/ timeSlice/ ApronTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:softEdges		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	SOFT EDGES
		FAA	SOFT EDGES
		Plain Text	Soft Edges
	NO	ICAO	…
		FAA	…
		Plain Text	…

23.8 Business Rules

23.8.1 Template Business Rules

Enforce required items in first (second, third) layer.

a. When *coverage1 (coverage2, coverage3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

b. When *coverage1 (coverage2, coverage3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

c. When *depth1 (depth2, depth3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

d. When *type1 (type2, type3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

Enforce range in first (second, third) layer.

e. When *depth1 (depth2, depth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the first (second, third) layer in the form (THN, 1/4, 1/2 or 1)."

f. When *depth1 (depth2, depth3)* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce range of the depth of the snowdrifts

g. When *depthOfDrift* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

h. When *depthOfDrift* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce required items in action(s) fields.

i. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

j. When *clearanceRidgeType1 (clearanceRidgeType2, clearanceRidgeType3)* and/or *clearanceRidgeDepth1 (clearanceDepthType2, clearanceDepthType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

k. When *clearanceFrictionEstimation (clearanceFrictionEstimation2, clearanceFrictionEstimation3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

l. When *remainderCoverage1 (remainderCoverage2, remainderCoverage3)* and/or *remainderDepth1 (remainderDepth2, remainderDepth3)* and/or *remainderType1 (remainderType2, remainderType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

m. When *clearanceMethod1* (*clearanceMethod2, clearanceMethod3*) is plowed, swept, plowed and swept, or plowed, swept and sanded and *width1* (*width2, width3*) equal to null then "Specify the width of the cleared area and remainder if known. Note: plowed/swept is omitted when the entire surface has been plowed."

n. When *clearanceMethod1* is null and *clearanceMethod2* and/or *clearanceMethod3* is not null then "Specify Method-1 first."

o. When *clearanceMethod2* is null and *clearanceMethod3* is not null then "Specify Method-2 before specifying Method-3."

Enforce range in action(s) fields.

p. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* equal to 0 then "Specify a width greater then 0."

q. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* greater then *ApronWidth* then "Specify a width less then or equal to the Apron width."

Enforce required items in ridge fields.

r. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* not equal to null and *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* equal to null then "Specify a ridge type."

s. When *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* not equal to null and *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* equal to null then "Specify a ridge depth."

Enforce range in ridge fields.

t. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in remainder fields.

u. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

v. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

w. When *remainderDepth1 (remainderDepth2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

x. When *remainderType1 (remainderType2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

y. When *remainderType1 (remainderType2)* not equal to null and (*clearanceMethod1* equal to null and *clearanceMethod2* and *clearanceMethod3* equal to null) then "Specify at least one clearance method."

Enforce range in remainder.

z. When *remainderDepth1 (remainderDepth2)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the remainder in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in frost heave fields.

aa. When *directionFrost* not equal to null and *sectionLengthFrost* equal to null then "Specify the length of movement area affected by frost heaves."

bb. When *sectionLengthFrost* not equal to null and *directionFrost* equal to null then "Specify a direction."

Enforce range in frost heave fields.

cc. When *sectionLengthFrost* not equal to null and *sectionLengthFrost* greater than *ApronLength* then "Specify a length less then or equal to the Apron length."

Enforce required items in cracks/ruts fields.

dd. When *cracksRutsWidth* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *typeCracksRuts* equal to null then "Specify a type of cracks/ruts."

ee. When *typeCracksRuts* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* equal to null then "Specify the width of cracks/ruts."

ff. When *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* and/or *directionCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type/direction of the cracks/ruts."

gg. When *directionCracksRuts* not equal to null and *cracksRutsWidth* and/or *sectionLengthCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type of the cracks/ruts and/or the length of the section of movement area affected by the cracks/ruts."

Enforce range in frost heave fields.

hh. When *sectionLengthCracksRuts* not equal to null and *sectionLengthCracksRuts* greater than *ApronLength* then "Specify a section length less then or equal to the Apron length."

Enforce required items in template.

ii. Set *startDate* equal to start immediately.

Other.

jj. Ensure that one of the following sections: Surface, Conditions, Action, Ridge, Frost Heave, Cracks/Ruts or Soft Edges are completed according to the above business rules before allowing the user to submit a NOTAM.

23.8.2 Policy Business Rules (from Order 7930.2M, section 5-1-4)

a. The term BARE is not to be used in NOTAMs.

b. Report the greatest depth measured.

c. Round off measurements to the next higher reporTABLE value.

d. Measurements are as follows:

THN (< ¼ ″), ¼″, ½″, 1″, 1+″ (reported as whole numbers), 35+″ (reported as multiples of feet only)

e. A surface not completely covered should be described as PTCHY. Do not use percentages.

f. Specify the width of the cleared area if less than the width of the Apron.

g. Snowbanks are assumed to be at the edge of a movement area, or at the edge of the plowed/swept area.

h. Every snow NOTAM shall have the time that the conditions were observed by the airport operator as the last element of the NOTAM.

23.8.3 Data Encoding Business Rules

a. For entering *designator* and the xlink:href reference to the associated Airport use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

c. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

d. If the user enters Conditions and Actions with Remainder, the values entered in for remainder levels should restart at 1 over 2 over 3 as it will denote an independent section.

e. Apron section information (between point 1 and point 2) should be contained within an Annotation.

23.9 Sample AIXM Message

APRON FAA APRON 4 IN DRFT


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
```

```
  <ApronElement gml:id="AE01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronElementTimeSlice gml:id="AE01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="AE01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedApron xlink:href="#RAMP01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </ApronElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApronTimeSlice gml:id="APRON01_TS02">
        <gml:validTime></gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <contaminant>
          <ApronContamination gml:id="AC01">
            <criticalRidge>
              <Ridge gml:id="RDG01">
                <depth uom="IN">5</depth>
                <extension>
                  <aim:RidgeExtension>
                    <aim:ridgeType>DRIFT</aim:ridgeType>
                  </aim:RidgeExtension>
                </extension>
              </Ridge>
            </criticalRidge>
          </ApronContamination>
        </contaminant>
      </ApronElementTimeSlice>
    </timeSlice>
  </ApronElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Apron gml:id="APRON01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApronTimeSlice gml:id="APRON01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <name>FAA</name>
```

```
        <associatedAirportHeliport xlink:href="#ACY"/>
      </ApronTimeSlice>
    </timeSlice>
  </Apron>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


23.10 Translation Templates

23.10.1 FAA

APRON *name coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceFrictionEstimation1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES WEF**

23.10.2 ICAO E Line

APRON *name coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES**

23.10.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Apron: *name*

CONDITION(S)
coverage1 depth1 type1
over *coverage2 depth2 type2*
over *coverage3 depth3 type3*
Drifts: *depthOfDrift*

CLEARANCE METHOD(S)
clearanceMethod1
clearanceWidth1 **WIDE**
Ridge: *clearanceRidgeDepth1 clearanceRidgeType1*

clearanceMethod2
clearanceWidth2 **WIDE**
Ridge: *clearanceRidgeDepth2 clearanceRidgeType2*

clearanceMethod3
clearanceWidth3 **WIDE**
Ridge: *clearanceRidgeDepth3 clearanceRidgeType3*

Remainder: *remainderCoverage1 remainderDepth1 remainderType1*
over *remainderCoverage2 remainderDepth2 remainderType2*
Drifts: *remainderDepthOfDrift*

RIDGE
ridgeDepth ridgeType

CRACKS/RUTS
cracksRutsWidth **CRACKS|RUTS**
Direction: *directionCracksRuts*
Length of Surface: *sectionLengthCracksRuts*

FROST HEAVES
Direction: *directionFrost*
Length of Surface: *sectionLengthFrost*

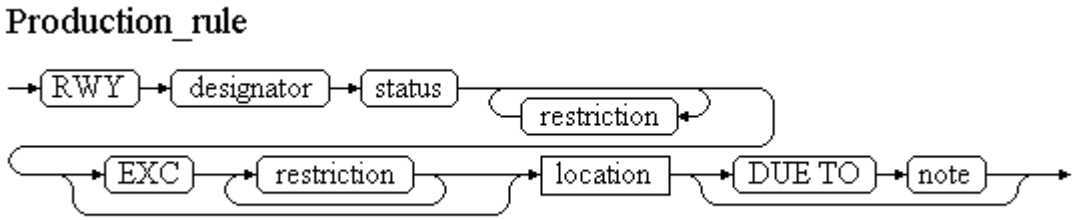
SOFT EDGES
Present|Not Present

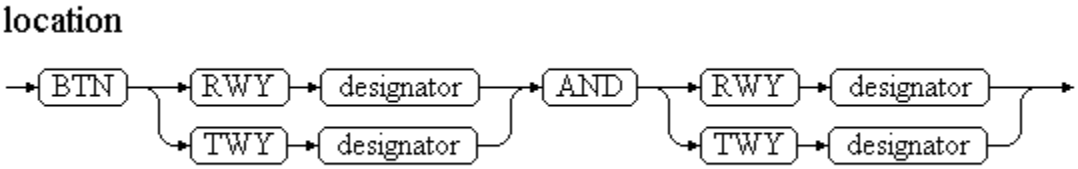
23.11 Additional Analysis

See Runway – Surface Conditions for the additional analysis. Apron – Surface Condition should be implemented similarly.

24 Runway – Closure

Specify the status of a runway by runway direction. The closure of a runway maps to Runway Direction and Runway.





24.1 Example NOTAMs

1. !SFF 10/002 SFF RWY 3L/21R CLSD EXC 15 MIN PPR 132.5 WEF 0810061600-0810062000
2. !DCA 10/069 3W3 RWY 10/28 CLSD TRANSIENT AIRCRAFT
3. !SEA 10/060 SEA RWY 16R/34L CLSD EXC FLIGHT CHECK
4. !LWC 10/015 LWC RWY 19 CLSD TKOF WEF 0810251500-0810252000

Source: US NOTAM Repository

24.2 AIXM Mapping and Translation

24.2.1 Scenario Details

TABLE 24.1

Attribute	Value
Description	Specify a the status of the runway
Maps to Keyword	Runway Runway Direction*
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature XPath	aixm:RunwayDirection
AIXM Mapping Diagram	Runway RunwayDirection
NOTAM lifespan	
Start ASAP	No

*An additional business rule is associated with Runway Direction. See the business rules below.

24.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 24.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

24.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 24.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

24.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 24.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

24.2.5 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Aerodrome Closure event specification is selected. Specific restriction selected by Data Encoding Business Rules.

TABLE 24.5
Runway Operational Status

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	LIMITED
		FAA	CLSD
		Plain Text	Closed

24.2.6 Permit/Forbid Operational Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (by selecting an item from template as either as a restriction or exclusion).

TABLE 24.6
Designation of Restriction/Exception

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)/ type (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ type		
AIXM Mapping	Class: ManoeuvringAreaUsage		
Enumeration	CodeUsageLimitationType		
	AIXM	**Translations**	
	RESERV	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

24.2.7 Operational Restriction [*operation*]

Description: A coded identifier indicating an operation executed by an aircraft in relation with an airport/heliport.

Source: User-selected (optional).

TABLE 24.7
Operations Restriction/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ operation		
AIXM Mapping	Class: ManoeuvringAreaUsage		
Enumeration	CodeOperationManoeuvringAreaType		
	AIXM	**Translations**	
	TOUCHGO	ICAO	TGL
		FAA	TGL
		Plain Text	Touch and go
	TRAIN_APPROACH	ICAO	PLA
		FAA	PLA
		Plain Text	Practice Low Approach
	LANDING	ICAO	LDG
		FAA	LDG
		Plain Text	landing
	TAKEOFF	ICAO	TKOF
		FAA	TKOF
		Plain Text	Takeoff
	OTHER:TRANSIENT	ICAO	TRANSIENT
		FAA	TSNT
		Plain Text	transient
	OTHER:AIRSHOW	ICAO	AIRSHOW ACFT
		FAA	AIRSHOW ACFT
		Plain Text	Airshow Aircraft
	OTHER:HELIPORT	ICAO	HELI
		FAA	HELI
		Plain Text	heliport
	OTHER:TAXI	ICAO	AVAILABLE FOR TAX
		FAA	AVBL FOR TAXI
	(only EXC restriction)	Plain Text	Available for Taxi
	OTHER:DEPARTURES	ICAO	DEPARTURES
		FAA	DEPARTURES
		Plain Text	Departures

24.2.8 Operational Restriction [*rule*]

Description: Flight rules to be observed by aircraft. For example, VFR or IFR.

Source: User-selected (optional).

TABLE 24.8
Flight Rules Restriction/Exceptions

Attribute	Value

AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperatorOR]/ flight/ FlightCharacteristic/ rule		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightRuleType		
	AIXM	**Translations**	
	IFR	ICAO	IFR
		FAA	IFR
		Plain Text	instrument flight rules
	VRF	ICAO	VFR
		FAA	VFR
		Plain Text	visual flight rules

24.2.9 Operational Restriction [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 24.9
Military Flight Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV
		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation
	OTHER:ANG_ALERTACFT	ICAO	AIR NATIONAL GUARD ALERT ACFT
		FAA	ANG ALERT ACFT
		Plain Text	ANG Alert Aircraft
	OTHER:USCG_ACFT	ICAO	US COAST GUARD ACFT
		FAA	USCG ACFT
		Plain Text	U.S. Coast Guard Aircraft

24.2.10 Operational Restriction [*purpose*]

Description: A code indicating the purpose of the flight.

Source: User-selected (optional).

TABLE 24.10
Flight Purpose Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)/ ManoeuvringAreaUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ purpose (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ purpose		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightPurposeType		
	AIXM	**Translations**	
	SCHEDULED	ICAO	SKED ACFT
		FAA	SKED ACFT
		Plain Text	scheduled aircraft
	NON_SCHEDULED	ICAO	UNSKED ACFT
		FAA	UNSKED ACFT
		Plain Text	unscheduled aircraft
	AIR_TRAINING	ICAO	STUDENT
		FAA	STUDENT
		Plain Text	Student

24.2.11 Aircraft Restriction [*type*]

Description: Indicating the type of an aircraft.

Source: User-selected (optional).

TABLE 24.11
Aircraft Type Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeAircraftType		
	AIXM	**Translations**	
	HELICOPTER	ICAO	HEL
		FAA	HEL
		Plain Text	helicopter
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	seaplane

	GLIDER	ICAO	GLD
		FAA	GLDR
		Plain Text	glider
	OTHER:SKIPLANES	ICAO	SKI PLANE
		FAA	SKI
		Plain Text	ski plane
	OTHER:ROTARYWING	ICAO	ROTARY WING
		FAA	ROTARY WING
		Plain Text	ROTARY wing
	OTHER:FIXEDWING	ICAO	FIXED WING
		FAA	FIXED WING
		Plain Text	fixed wing
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	charters
	OTHER:AIRCARRIERS	ICAO	AIR CARRIERS
		FAA	AIR CARRIERS
		Plain Text	air carriers
	OTHER:EXPERIMENTAL	ICAO	EXPERIMENTAL
		FAA	EXPERIMENTAL
		Plain Text	experimental

24.2.12 Operational Restriction [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 24.12
Flight Status Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)/ ManoeuvringAreaUsage (object)/ UsageCondition (object)/ ConditionalCombination (object)/ FlightCharacteristic (object)/ status (attribute)		
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight
	SAR	ICAO	SEARCH AND RESCUE
		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA

		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

24.2.13 Wingspan Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft.

Source: User-entered (optional).

TABLE 24.13
Aircraft Wingspan Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [*wingspan*]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*>
		FAA	GTR THAN <*value*>
		Plain Text	Greater than <*value*>
	BELOW (*type* = PERMIT)	ICAO	LESS THAN <*value*>
		FAA	LESS THAN <*value*>
		Plain Text	Less than <*value*>

24.2.14 Weight Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft.

Source: User-entered (optional).

TABLE 24.14
Aircraft Weight Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [*weight*]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	OVR <*value*>
		FAA	OVR <*value*>
		Plain Text	Over <*value*>
	AT_OR_BELOW (*type* = PERMIT)	ICAO	AT BLW <*value*>
		FAA	AT BLW <*value*>
		Plain Text	And below <*value*>

24.2.15 Approach Speed Restriction [*speed*]

Description: Speed and speed interpretation of the aircraft.

Source: User-entered (optional).

TABLE 24.15
Aircraft Speed Restrictions/Exceptions

Attribute	Value
AIXM Path	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/

(UML)	UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ speed		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValSpeedType		
Min inclusive	0		
Enumeration	Units of Measure: 1 KT = 1.852 KM_H		
	UomDistanceType	FAA	KT
		Plain Text	Knots
		ICAO	KM_H
		Plain Text	Kilometers/hour
	AIXM	**Translations**	
	Aircraft Restriction [*speed*]	ICAO	APCH SPD
		FAA	approach speed
		Plain Text	APCH SPD
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionalCombination (object)/ [logicalOperator OR]/ AircraftCharacteristic (object)/ speedInterpretation (attribute)		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*> KTS
		FAA	> <*value*> KTS
		Plain Text	GTR THAN <*value*> KTS

24.2.16 Other Restrictions [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 24.16
User-entered Restrictions/Exceptions

Attribute	Value	
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)	
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

24.2.17 Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 24.17
Location Description

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	designator	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

24.2.18 Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 24.18
Location Description

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	designator	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

24.2.19 Due to [*note*]

Description: A reason for caution when operating at or near the facility. This is only a reason for closing (not an exception).

Source: User-selected (optional).

TABLE 24.19
User-entered text explanation

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	REMARK	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	DUE TO WIP	ICAO	WIP
		FAA	WIP
		Plain Text	Work in progress
	DUE TO DISABLED AIRCRAFT	ICAO	DISABLED ACFT
		FAA	DISABLD ACFT
		Plain Text	Disabled Aircraft
	DUE TO RUBBER REMOVAL	ICAO	RUBBER REMOVAL
		FAA	RUBBER REMOVAL
		Plain Text	Rubber Removal
	DUE TO PAVING	ICAO	PAVING
		FAA	PAVING
		Plain Text	Paving
	DUE TO RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	DUE TO SNOW REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow Removal
	DUE TO ICE REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	DUE TO CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	DUE TO USER SUPPLIED FREE TEXT	ICAO	User Supplied
		FAA	
		Plain Text	

24.3 Q Codes

TABLE 24.20
QCodes for Runway Closure

AIXM Code	QCode	
ALL	**Series**	**A**
CLOSED	Q Code	QMRLC
	Scope	A
	Traffic	IV
	Purpose	NBO
ANY RESTRICTION/ EXCEPTION COMBINATION	Q Code	QMRLT
	Scope	A
	Traffic	IV
	Purpose	NBO

24.4 Business Rules

24.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."

b. The addition of *restriction(s)* is optional. The user may be allowed to enter multiple *restrictions*.

c. The same *restriction* must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections)

d. A number (greater than zero) must be entered for *wingspan, weight*, and *speed* if selected.

e. When *restriction* equal to OTHER then enter text in additional text box. Please provide user with contraction look up TABLE.

f. For Runway Direction Closure, the must be a restriction or an exception in addition to CLSD. *Example*: RWY 04 CLSD TKOFF

24.4.2 Policy Business Rules

None.

24.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. If closing a full runway (both runway directions), both runway directions need to be closed, or restricted.

c. For entering *operationalStatus* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

d. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

e. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

f. For restrictions, *type* is FORBID. The values for wingspan Interpretation and weight Interpretation depend on *type* FORBID.

g. For exceptions, *type* is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on *type* PERMIT.

h. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

i. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

j. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

24.5 Sample AIXM Message (Closed)

RWY 04/22 CLSD DUE TO WIP


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-15T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
```

```
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
              <aixm:annotation>
                <aixm:Note gml:id="CY01_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY01_TS02_NT02">
                      <aixm:note lang="eng">DUE TO WIP</aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>CLOSED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
            <gml:timePosition>2010-04-15T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>22</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
```

```
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA02">
              <aixm:annotation>
                <aixm:Note gml:id="CY01_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY01_TS02_NT02">
                      <aixm:note lang="eng">DUE TO WIP</aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>CLOSED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
```

```
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


24.6 Sample AIXM Message (Closed with Exceptions)

RWY 13/31 CLSD EXC ANG ALERT ACFT


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
```

```
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <operationalStatus>LIMITED</operationalStatus>
            <usage>
              <ManoeuvringAreaUsage gml:id="MAU01">
                <type>PERMIT</type>
                <selection>
                  <ConditionCombination gml:id="CC01">
                    <flight>
                      <FlightCharacteristic gml:id="FC01">
                        <military>OTHER:ANG_ALERTACFT</military>
                      </FlightCharacteristic>
                    </flight>
                  </ConditionCombination>
                </selection>
              </ManoeuvringAreaUsage>
            </usage>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>31</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
```

```
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA02">
            <operationalStatus>LIMITED</operationalStatus>
            <usage>
              <ManoeuvringAreaUsage gml:id="MAU02">
                <type>PERMIT</type>
                <selection>
                  <ConditionCombination gml:id="CC02">
                    <flight>
                      <FlightCharacteristic gml:id="FC02">
                        <military>OTHER:ANG_ALERTACFT</military>
                      </FlightCharacteristic>
                    </flight>
                  </ConditionCombination>
                </selection>
              </ManoeuvringAreaUsage>
            </usage>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
```

```
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13/31</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


24.7 Translation Templates

24.7.1 FAA

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] [**DUE TO *note***] WEF**

24.7.2 ICAO E Line

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] [**DUE TO *note***] WEF**

24.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway: *designator*

Status: *status*

[Restriction(s): [*restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]**
[DUE TO *note***] WEF]**

24.8 Additional Analysis

See AD, APRON, and TAXIWAY Closure for AIXM 5.1 sample message examples that are similar.

25 ALL Runways – Continuous Snow or Ice Removal

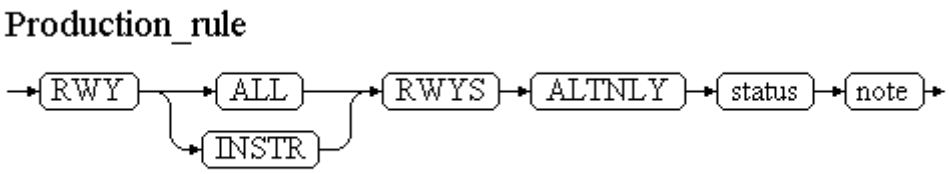
A single NOTAM may be issued for continuous snow removal operations on alternating runways when all of the following conditions are met:

a. The air traffic control tower is in operation during the valid period of the NOTAM.

b. Anticipated alternating closure time for each runway is two hours or less.

c. Maximum valid time is limited to the period of continuous alternating snow removal.

d. Operations are based on a Letter of Agreement (LOA) between airport management and the FSS and ATCT.



25.1 Example NOTAMs

1. !DEN DEN RWY ALL RWYS ALTNLY CLSD SNOW REMOVAL WEF 0710231500
[FAA Order JO 7930.2, para 5-1-6 Example #1]

2. !SLC SLC RWY INSTR RWYS ALTNLY CLSD SNOW REMOVAL WEF 0711241600
[FAA Order JO 7930.2, para 5-1-6 Example #2]

3. !DEN DEN RWY ALL RWYS ALTNLY CLSD ICE REMOVAL WEF 0712251700
[FAA Order JO 7930.2, para 5-1-6 Example #3]

4. !SLC SLC RWY INSTR RWYS ALTNLY CLSD ICE REMOVAL WEF 0711261800
[FAA Order JO 7930.2, para 5-1-6 Example #4]

Source: FAA Order JO 7930.2

25.2 AIXM Mapping and Translation

25.2.1 Scenario Details

TABLE 25.1

Attribute	Value
Description	Specify a the status of the runway
Maps to Keyword	Runway Runway Direction*
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature XPath	aixm:RunwayDirection
AIXM Mapping Diagram	Runway
NOTAM lifespan	
Start ASAP	No

25.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.

Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 25.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

Description: The user decision to close ALL RWYS or only INSTR RWYS can be mapped to AIXM and stored for input into a future graphical display component of the FNS. The option of ALL RWYS would include all Approach Guidance Types and INSTR RWYS would include all except for NON_PRECISION.

Source: Baseline Data

TABLE 25.3
Instrument Runway

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ precisionApproachGuidance (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation SNAPSHOT]/ precisionApproachGuidance		
AIXM Mapping	Class: RunwayDirection		
Enumeration	CodeApproachGuidanceType		
	AIXM	**Translations**	
	NON_PRECISION	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_I	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_II	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_IIIA	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_IIIB	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_IIIC	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument
	ILS_PRECISION_CAT_IIID	ICAO	INSTRUMENT
		FAA	INSTR

		Plain Text	Instrument
	MLS_PRECISION	ICAO	INSTRUMENT
		FAA	INSTR
		Plain Text	Instrument

25.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.

Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 25.4
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

25.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 25.5
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

25.2.5 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Aerodrome Closure event specification is selected. Specific restriction selected by Data Encoding Business Rules.

TABLE 25.6
Runway Operational Status

Attribute	Value
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/

	ManoeuvringAreaAvailability/ operationalStatus		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	LIMITED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed

25.2.6 Due to [*note*]

Description: A reason for caution when operating at or near the facility. This is only a reason for closing (not an exception).

Source: User-selected (required).

TABLE 25.7
User-entered text explanation

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	propertyName	
	purpose	purpose	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	ALTERNATIVELY CLSD DUE TO SNOW REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow Removal
	ALTERNATIVELY CLSD DUE TO ICE REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal

25.3 Q Codes

TABLE 25.8
QCode for Alternative Runway Closure

AIXM Code	Q Code	
ALL	**Series**	**A**
	Q Code	QMRXX
	Scope	A
	Traffic	IV
	Purpose	NBO

25.4 Business Rules

25.4.1 Template Business Rules

a. If *designator* equal to null, then "Select a designator."

b. The only *designator* that has the event specification available is "ALL."

c. This event specification must be tied to a current LOA.

d. If *warning* equal to null, then "Select a condition."

25.4.2 Policy Business Rules

A Continuous Snow/Ice Removal NOTAM can only be issued by an airport whose operations are based on an LOA between airport management and the FSS and ATCT. However, there is currently no digital source of LOA data. LOAs can be found at loa.faa.gov (for example, LOA: Snow Removal OPS on Multiple RWYs). The LOAs are stored here as numerous PDF documents that have to be searched through. Because this is how the FAA currently stores LOAs, there is no good way to automatically incorporate LOAs into the FNS business rules engine. Aaron has spoken with the CSSD team about their LOA/SOP capture tool. The idea of this tool is to digitize the information gathered in the LOAs and SOPs on the website listed above. They have already added the continuous snow removal LOAs to the list of information they need to capture. After this is done, the FNS tool should just be able to query the LOA/SOP data using the business rule: Continuous snow removal NOTAM scenario available if "LOA for snow removal is not NULL" (in SQL speak). Until the LOA/SOP tool is developed, the only feasible way to verify this information is to manually go through the list of airports receiving the NOTAM tool and cross reference that list with the LOA list on the website. A very simple TABLE could be built into the FNS database with a list of which airports have the proper LOA and use the above business rule while doing the query on the FNS database TABLE instead using of the LOA/SOP tool. Other airport information could also be stored in this TABLE including which airports are Part 139 airports which is needed for other NOTAM scenarios such as the aircraft rescue and fire fighting scenario (see ARFF scenario documentation for more information on this topic).

25.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For closing ALL full runways (both runway directions), all runway directions need to be closed or restricted.

c. For entering *operationalStatus* and additional restriction/exception information, use a TimeSlice of type TEMPDELTA.

d. An annotation needs to be included under the *warning* of type REMARK to include the information: **RUNWAY ALTERNATIVELY CLOSED**.

e. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

25.5 Sample AIXM Message

Sample NOTAM Message: RWY ALL RWYS ALTNLY CLSD SNOW REMOVAL

```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
```

```
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
              <aixm:annotation>
                <aixm:Note gml:id="CY01_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY01_TS02_NT02">
                      <aixm:note lang="eng">RUNWAY ALTERNATIVELY CLOSED DUE TO SNOW</aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>LIMITED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>31</designator>
```

```
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA02">
              <aixm:annotation>
                <aixm:Note gml:id="CY02_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY02_TS02_NT02">
                      <aixm:note lang="eng"> RUNWAY ALTERNATIVELY CLOSED DUE TO SNOW </aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>LIMITED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
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  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR03_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR03_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <usedRunway xlink:href="#RWY02"/>
        <startingElement xlink:href="#RE02"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR03_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR03_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
```

```
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA03">
              <aixm:annotation>
                <aixm:Note gml:id="CY03_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY03_TS02_NT02">
                      <aixm:note lang="eng"> RUNWAY ALTERNATIVELY CLOSED DUE TO SNOW </aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>LIMITED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
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<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR04">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR04_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR04_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>22</designator>
        <usedRunway xlink:href="#RWY02"/>
        <startingElement xlink:href="#RE02"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR04_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR04_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA04">
              <aixm:annotation>
                <aixm:Note gml:id="CY04_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY04_TS02_NT02">
                      <aixm:note lang="eng"> RUNWAY ALTERNATIVELY CLOSED DUE TO SNOW </aixm:note>
                    </aixm:LinguisticNote>
```

```
                    </aixm:translatedNote>
                  </aixm:Note>
                </aixm:annotation>
              <operationalStatus>LIMITED</operationalStatus>
            </ManoeuvringAreaAvailability>
          </availability>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE01_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
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          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13/31</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
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      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE02_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE02_TI01">
```

```
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedRunway xlink:href="#RWY01"/>
        <extent>
        <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
          <gml:patches>
            <gml:PolygonPatch>
              <gml:exterior>
                <gml:LinearRing>
                  <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                </gml:LinearRing>
              </gml:exterior>
            </gml:PolygonPatch>
          </gml:patches>
        </ElevatedSurface>
        </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY02_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
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    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
```

```
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


25.6 Translation Templates

25.6.1 FAA

RWY ALL RWYS ALTNLY *operationalStatus note*

RWY INSTR RWYS ALTNLY *operationalStatus note*

25.6.2 ICAO E Line

RWY ALL RWYS ALTNLY *operationalStatus note*

RWY INSTR RWYS ALTNLY *operationalStatus note*

25.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Usage Limitation

Runways: *Alternately closed*

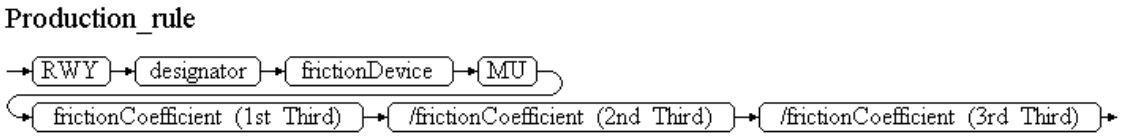
Reason: *Continuous warning*

25.7 Additional Analysis

None.

26 Runway – Friction Measurements

Specify the friction measurements in thirds of a runway for the landing runway. (Do not combine multiple runways into a single NOTAM).



26.1 Example NOTAMs

1. RWY 18 RFT MU 52/30/42*
2. RWY 36 TAP MU 20/20/20*
3. !FWA 12/022 FWA RWY 32 BOW MU 37/42/38

Source: US NOTAM Repository

***Source:** FAA Order JO 7930.2

26.2 AIXM Mapping and Translation

26.2.1 Scenario Details

TABLE 26.1

Attribute	Value
Description	Specifies the friction reading of a runway (defined in thirds).
Maps to Keyword	RunwayDirection
Feature Type Id	AirportHeliport/ Runway
Feature XPath	aixm:Runway
AIXM Mapping Diagram	Runway RunwayDirection Surface Contamination
NOTAM lifespan	2 Hours
Start ASAP	YES

26.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 26.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

26.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 26.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

26.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 26.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

26.2.5 Runway Section [*section*]

Description: The type of equipment used to determine the reported friction coefficient.

Source: Assumed in placement of values in the template (1st third, 2nd third, 3rd third).

TABLE 26.5
Reading Location

Attribute	Value		
AIXM Path (UML)	Runway(feature)/ Runway Contamination (object) (in Surface Contamination)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ areaContaminant/ RunwaySectionContaminant/ section		
AIXM Mapping	Class: RunwaySectionContaminant		
Enumeration	CodeRunwaySectionType		
	AIXM	**Translations**	
	1_THIRD	ICAO	…
		FAA	…
		Plain Text	…

	2_THIRD	ICAO	…
		FAA	…
		Plain Text	…
	3_THIRD	ICAO	…
		FAA	…
		Plain Text	…

26.2.6 Friction Measuring Device [*frictionDevice*]

Description: The type of equipment used to determine the reported friction coefficient.

Source: User-selected (required).

TABLE 26.6
Friction Measuring Device

Attribute	Value		
AIXM Path (UML)	Runway(feature)/ Runway Contamination (object) (in Surface Contamination)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ areaContaminant/ RunwaySectionContaminant/ frictionDevice		
AIXM Mapping	Class: RunwaySectionContaminant		
Enumeration	CodeFrictionDeviceType		
	AIXM	**Translations**	
	OTHER:BOW	ICAO	BOWMONK DECELEROMETER
		FAA	BOW
		Plain Text	Bowmonk Decelerometer
	BRD	ICAO	BRD
		FAA	BRD
		Plain Text	Brakementer-Dynometer
	OTHER:ERD	ICAO	ELECTRONIC RECORDING DECELEROMETER
		FAA	ERD
		Plain Text	Electronic Recording Decelerometer
	GRT	ICAO	GRT
		FAA	GRT
		Plain Text	Griptester
	MUM	ICAO	MUM
		FAA	MUM
		Plain Text	Mark 4 Mu Meter
	RFT	ICAO	RFT
		FAA	RFT
		Plain Text	Runway Friction Tester
	SFH	ICAO	SFH
		FAA	SFH
		Plain Text	Surface Friction Tester (high pressure tire)
	SFL	ICAO	SFL
		FAA	SFL
		Plain Text	Surface Friction Tester (low pressure tire)
	SKH	ICAO	SKH
		FAA	SKH
		Plain Text	Skiddometer (high

			pressure tire)
	SKL	ICAO	SKL
		FAA	SKL
		Plain Text	Skiddometer (low pressure tire)
	TAP	ICAO	TAP
		FAA	TAP
		Plain Text	Tapley Decelerometer
	OTHER:VER	ICAO	VERICOM
		FAA	VER
		Plain Text	Vericom
	OTHER:NAC	ICAO	Neubert
		FAA	NAC
		Plain Text	Neubert Aero Corp.

26.2.7 Friction Coeffieient [*frictionCoefficient*]

Description: The average friction coefficient (labeled by Runway thirds).

Source: User-selected (required).

TABLE 26.7
Friction Coefficient

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ Runway Contamination (object) (in Surface Contamination)	
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ areaContaminant/ RunwaySectionContaminant/ frictionCoefficient	
AIXM Mapping	Class: RunwaySectionContaminant	
Enumeration	ValFrictionType	
Pattern	0\.[0-9]{2} [0.XX]	
Unit Conversion	FAA	<value>*100
	ICAO	<value>

26.3 Q Codes

TABLE 26.8
QCodes for Friction Measurements

AIXM Code	Q Code	
YES	**Series**	**S**
	Q Code	QMRXX
	Scope	A
	Traffic	IV
	Purpose	NBO

26.4 Business Rules

26.4.1 Template Business Rules

a. When *designator* equal to null, then "Select a designator."

b. When *frictionDevise* equal to null, then "Select a friction measuring devise."

c. When any *frictionCoefficient* equal to null, then "Enter a friction measurement."

d. When any *frictionCoefficient* equals a number greater than 40, then "Maximum reporTABLE MU value is 40."

e. All (3) *frictionCoefficient* values must individually equal a number between 0 and 40.

26.4.2 Policy Business Rules (from FAA Order JO 7930.2, paragraph 5-1-3c4(a))

a. Readings are issued in thirds of a runway for the landing runways only.

b. Do not combine runways into a single NOTAM.

c. The next issue of the JO 7930.2 will state that 40 means 40 and above.

26.4.3 Policy Business Rules (from AC 150/5200-30C, paragraph 5-5 a (1))

a. Friction values may be reported under the following conditions: When compacted snow and/or ice are present on the center portion of the runway, and the friction values are 40 or below on any zone of the runway.

b. Note 1: Current friction measurement technologies are not reliable in determining braking effectiveness of a contaminated surface condition above measurements of 40. Therefore, 40 is the highest value for reporting friction measurements on contaminated surfaces.

26.4.4 Data Encoding Business Rules

a. The element *designator* is required and must use a TimeSlice of type SNAPSHOT.

b. The elements of type *section*, *frictionCoefficient*, and *frictionDevice* are required and must use a TimeSlice of type TEMPDELTA.

c. Enter a new areaContaminant section for each third of the runway.

d. The *frictionCoefficient* must be stored in AIXM as a decimal with two significant figures. Ex: 20 (FAA) = 0.20 (AIXM).

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. The timePosition for the SNAPSHOT should correspond to the beginPosition.

g. An xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

h. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

26.5 Sample AIXM Message

Sample NOTAM Message: RWY 04 BOW MU 20/20/20


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
```

```
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime></gml:validTime>
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        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS02">
        <gml:validTime></gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
```

```
        <areaContaminant>
          <RunwaySectionContamination gml:id="RWYSEC01">
            <frictionCoefficient>0.20</frictionCoefficient>
            <frictionDevice>OTHER:BOW</frictionDevice>
            <section>1_THIRD</section>
          </RunwaySectionContamination>
        </areaContaminant>
        <areaContaminant>
          <RunwaySectionContamination gml:id="RWYSEC02">
            <frictionCoefficient>0.20</frictionCoefficient>
            <frictionDevice>OTHER:BOW</frictionDevice>
            <section>2_THIRD</section>
          </RunwaySectionContamination>
        </areaContaminant>
        <areaContaminant>
          <RunwaySectionContamination gml:id="RWYSEC03">
            <frictionCoefficient>0.20</frictionCoefficient>
            <frictionDevice>OTHER:BOW</frictionDevice>
            <section>3_THIRD</section>
          </RunwaySectionContamination>
        </areaContaminant>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


26.6 Translation Templates

26.6.1 FAA

RWY *designator frictionDevice* **MU** *frictioncoefficient1/frictioncoefficient2/frictioncoefficient3*

26.6.2 ICAO E Line

RWY *designator frictionDevice* **MU** *frictioncoefficient1/frictioncoefficient2/frictioncoefficient3*

26.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Friction Measurement

Affected Runway: *designator*

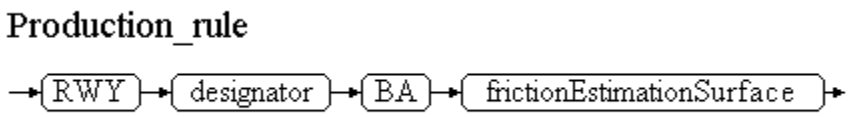
MU: *frictionDevice frictioncoefficient1/frictioncoefficient2/frictioncoefficient3*

26.7 Additional Analysis

ALL Runways is not a valid option.

27 Runway – Braking Action

This scenario is used to report the braking action on a Runway.



27.1 Example NOTAMs

1. !CDV 11/007 CDV RWY 9/27 THN SIR SA/DEICED SOLID 80 WIDE RMNDR BA FAIR WEF 0811012357
2. ! ANC ANC **RWY** 14/32 BA POOR WEF 0702061500*
3. ! ANC Z15 **RWY** 1/19 BA NIL WEF 0709041100*

Source: US NOTAM Repository
***Source**: AC 150/5200 28d

27.2 AIXM Mapping and Translation General

27.2.1 Scenario Details

TABLE 27.1

Attribute	Value
Description	Specify the braking action for a runway.
Feature Type Id	Runway
Feature XPath	aixm:Runway
AIXM Mapping Diagram	Surface Contamination
NOTAM lifespan	24 Hours
Start ASAP	Yes

27.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 27.2
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

27.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 27.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

27.2.4 Braking Action [*frictionEstimation*]

Description: A qualitative estimate of the friction.

Source: User-selected (required).

TABLE 27.4
Braking Action

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ frictionEstimation (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ frictionEstimation		
AIXM Mapping	Class: SurfaceContamination		
Enumeration	CodeFrictionEstimateType		
	AIXM	**Translations**	
	OTHER:FAIR	ICAO	FAIR
		FAA	FAIR
		Plain Text	fair
	POOR	ICAO	POOR
		FAA	POOR
		Plain Text	poor
	OTHER:NIL	ICAO	NIL
		FAA	NIL
		Plain Text	nil

27.3 Business Rules

27.3.1 Template Business Rules

a. When *designator* equals to null, then "Select a designator."

b. When *frictionEstimation* equals to null, then "Select the Braking Action."

27.3.2 Policy Business Rules (from AC 150/5200-28D)

a. When reported by airport management, braking action is described as "fair," "poor," and "nil." Classify braking action according to the most critical term used.

b. "Good" braking action is not a reportable condition.

c. When reporting braking action, do not give the type of vehicle making the report.

27.3.3 Data Encoding Business Rules

a. For entering *designator* and the xlink reference to the associated Airport use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

27.4 Sample AIXM Message

RWY 13/31 BA NIL


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-01-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWY01_TS02_TP01">
            <gml:beginPosition>2010-01-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-01-08T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <overallContaminant>
          <RunwayContamination gml:id="RC01">
            <frictionEstimation>OTHER:NIL</frictionEstimation>
          </RunwayContamination>
        </overallContaminant>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
```

```
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-01-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

27.5 Translation Templates

27.5.1 FAA

RWY *designator* **BA** *frictionEstimationSurface*

27.5.2 ICAO E Line

RWY *designator* **BA** *frictionEstimationSurface*

27.5.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*

Braking Action: *clearanceFrictionEstimation*

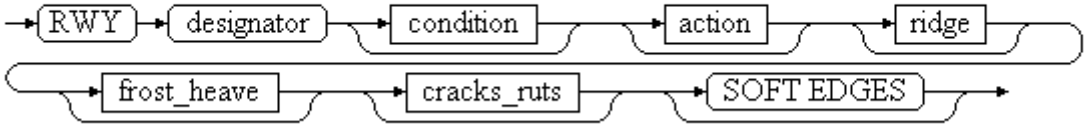
27.6 Additional Analysis

None.

28 Runway – Surface Condition

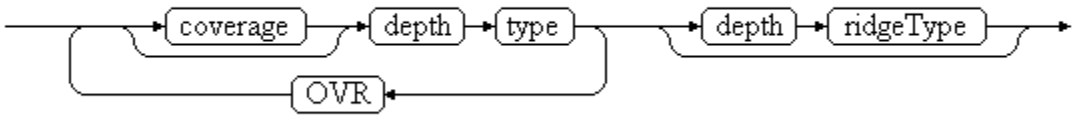
This scenario is used to report snow, ice, slush, water conditions and actions such as plowed, swept, sanded and deiced as outlined in FAA Order JO 7930.2M section 5-1-4.

Production_rule



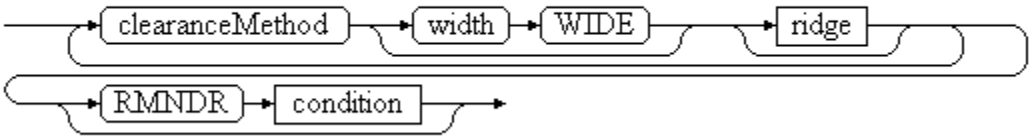
Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.

condition



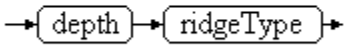
Action(s) – plowed, swept, sanded, deiced, etc.

action



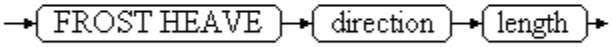
Ridge – snowbank, berm and windrows

ridge

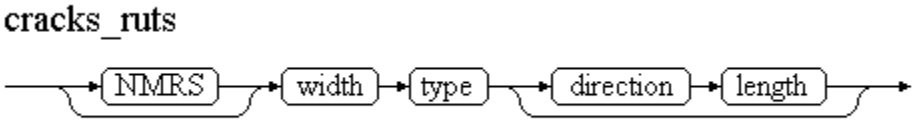


Frost Heave

frost_heave



Cracks/Ruts



28.1 Example NOTAMs

1. !BTL 11/022 BTL RWY 5/23 THN WSR OVR PTCHY THN IR 1 IN DRFT WEF 0811302050
2. !CMX 11/070 CMX RWY 13/31 1 IN DRFT OVR THN IR WEF 0811281317
3. !OTZ 12/399 OTZ RWY 9/27 THN LSR OVR PTCHY 1/2 IN DRFT OVR PTCHY THN SIR WEF 0812251550
4. !BGR 02/100 BGR RWY 15/33 THN LSR OVR THN PTCHY PSR PLW 180 WIDE SA 50 WIDE 18 IN DRFT WEF 0902192330
5. !BET 11/111 BET RWY 18/36 PTCHY THN DRFT OVR THN FROST WEF 0811092115
6. !OTZ 02/291 OTZ RWY 9/27 PTCHY 1/2 IN DRFT OVR PTCHY THN SIR SWEPT 100 WIDE SA 60 WIDE 4 FT BERM 15 FT INSIDE RWY LGTS N SIDE 24 IN BERM INSIDE RWY LGTS S SIDE WEF 0902200159
7. !CQM 01/001 CQM RWY 13/31 FROST HEAVE NW 1000 WEF 0901201730
8. !FAI 04/213 FAI RWY 1R/19L FROST HEAVE S 2600 WEF 0904120903
9. !MRI 02/097 MRI RWY 4/22 3 IN PTCHY SIR 5 IN RUTS WEF 0902180709
10. !HVN 09/001 HVN RWY 2/20 RWY UNEVEN 6IN RUTS E 1000
11. !DRI 06/354 OPL RWY 18/36 NMRS 2 IN CRACKS WEF 0906241520
12. !JST 07/008 JST RWY 5/23 SOFT EDGES
13. !CDV 11/007 CDV RWY 9/27 THN SIR SA/DEICED SOLID 80 WIDE RMNDR BA FAIR WEF 0811012357
14. !ADQ 11/238 ADQ RWY 7/25 4 IN LSR OVR PTCHY THN IR BA POOR WEF 0811221429

Source: US NOTAM Repository

28.2 AIXM Mapping and Translation General

28.2.1 Scenario Details

TABLE 28.1

Attribute	Value
Description	Specify the surface conditions for a runway.
Feature Type Id	Runway
Feature XPath	aixm:Runway
AIXM Mapping Diagram	Surface Contamination
NOTAM lifespan	24 Hours
Start ASAP	Yes

28.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 28.2
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

28.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

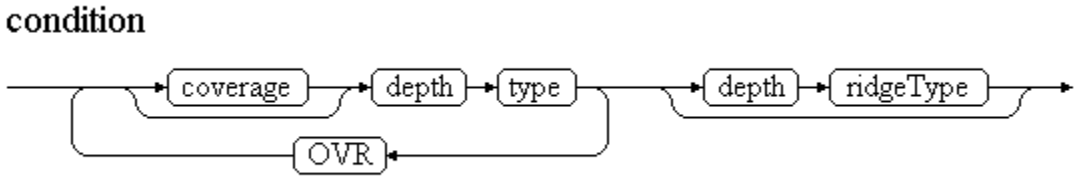
Source: User-selected from baseline data (optional).

TABLE 28.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

28.3 AIXM Mapping and Translation Condition(s)

Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



28.3.1 Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 28.4
Surface Coverage

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ proportion(attribute)

AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ proportion		
AIXM Mapping	Class: RunwayContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…
		Plain Text	Fully Covered
	50	Text NOTE	
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ note (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	propertyName	
	purpose	purpose	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

28.3.2 Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 28.5
Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ depth		
AIXM Mapping	Class: RunwayContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

28.3.3 Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 28.6
Layer Order

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer
Datatype	NoSequenceType
Min inclusive	0

28.3.4 Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

TABLE 28.7
Type of Surface Contamination

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WR
		Plain Text	Water on Runway
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLR
		Plain Text	Slush on Runway
	ICE	ICAO	ICE
		FAA	IR
		Plain Text	Ice on Runway
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PSR
		Plain Text	Packed Snow on Runway
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LSR
		Plain Text	Loose Snow on Runway
	DRY_SNOW	ICAO	DRY SN
		FAA	SN

		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SIR
		Plain Text	Snow and Ice on Runway
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WSR
		Plain Text	Wet Snow on Runway
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks

28.3.5 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 28.8
Drift Depth

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

28.3.6 Ridge Type [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

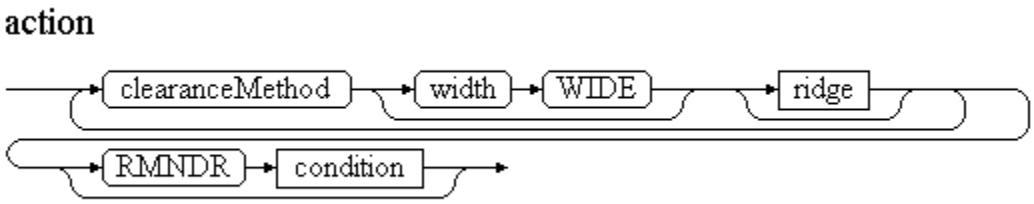
TABLE 28.9
Drift Type

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:

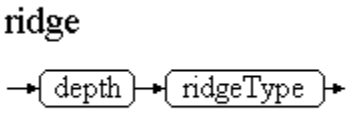
	TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift

28.4 AIXM Mapping and Translation Action(s)

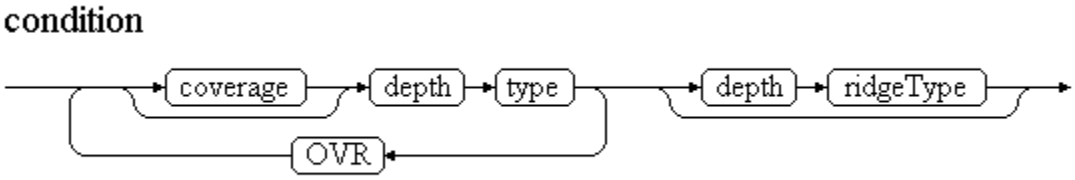
Action(s) – plowed, swept, sanded, deiced, etc.



Ridge – snowbank, berm and windrows



Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



28.4.1 Clearance Method [*clearanceMethod*]

Description: The method used to clear the surface contamination.

Source: User-selected (required with clearedWidth, ridgeType, ridgeDepth, and/or remaining conditions)

TABLE 28.10
Clearance Method

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ SurfaceContamination (extension)/ clearanceMethod (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ extension/ aim:clearanceMethod

AIXM Mapping	Class: AIM Surface Contamination Extension		
Enumeration	AIM Extension: aim:CodeClearanceMethodType		
	AIXM	**Translations**	
	PLOWED	ICAO	PLOWED
		FAA	PLW
		Plain Text	plowed
	SANDED	ICAO	SANDED
		FAA	SA
		Plain Text	sanded
	PATCHY SAND	ICAO	PATCHY SAND
		FAA	PTCHY SA
		Plain Text	Patchy sand
	SWEPT	ICAO	SWEPT
		FAA	SWEPT
		Plain Text	swept
	PLOWED AND SWEPT	ICAO	PLOWED/ SWEPT
		FAA	PLW/ SWEPT
		Plain Text	plowed and swept
	PLOWED AND SWEPT AND SANDED	ICAO	PLOWED/ SWEPT/ SANDED
		FAA	PLW/ SWEPT/ SA
		Plain Text	plowed, swept, and sanded
	TREATED DEICED LIQUID	ICAO	DEICED LIQUID
		FAA	DEICED LIQUID
		Plain Text	deiced liquid
	TREATED DEICED SOLID	ICAO	DEICED SOLID
		FAA	DEICED SOLID
		Plain Text	deiced solid

28.4.2 Cleared Width [*clearedWidth*]

Description: Width of runway cleared of contamination, if less than the total width.

Source: User-entered (optional)

TABLE 28.11
Cleared Width

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ clearedWidth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ clearedWidth		
AIXM Mapping	Class: RunwayContamination		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

28.4.3 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 28.12
Drift Depth

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

28.4.4 Type [*ridgeType*]

Description: The type of drift (such as a snowbank).
Source: In this section, constrained to be drift.

TABLE 28.13
Drift Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension: CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift
	BERM	ICAO	berm
		FAA	BERM
		Plain Text	berm
	SNOWBANK	ICAO	SN BANKS
		FAA	SNBNK
		Plain Text	snowbank
	WINDROWS	ICAO	WINDROWS
		FAA	WINDROWS
		Plain Text	windrows

28.4.5 Remaining Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 28.14
Remainder Surface Coverage

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ proportion(attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ proportion		
AIXM Mapping	Class: RunwaySectionContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…
		Plain Text	Fully Covered
	50	Text NOTE	
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ note (attribute		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	proportion	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

28.4.6 Remaining Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 28.15
Remainder Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ depth		
AIXM Mapping	Class: RunwaySectionContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

28.4.7 Remaining Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 28.16
Remainder Layer Order

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer
Datatype	NoSequenceType
Min inclusive	0

28.4.8 Remaining Contamination Type [*type*]

Description The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

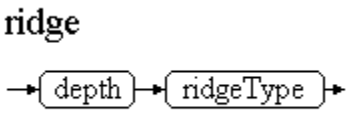
TABLE 28.17
Remainder Type of Surface Contamination

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WR
		Plain Text	Water on Runway
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLR
		Plain Text	Slush on Runway
	ICE	ICAO	ICE
		FAA	IR
		Plain Text	Ice on Runway
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PSR
		Plain Text	Packed Snow on Runway
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE

		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LSR
		Plain Text	Loose Snow on Runway
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SIR
		Plain Text	Snow and Ice on Runway
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WSR
		Plain Text	Wet Snow on Runway
	OTHER:MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks

28.5 AIXM Mapping and Translation Ridge

Ridge – snowbank, berm and windrows



28.5.1 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 28.18
Drift Depth

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35

			FT 3, 4, etc to 10
		ICAO	CM

28.5.2 Ridge Type [*ridgeType*]

Description: The type of drift (such as a snowbank).

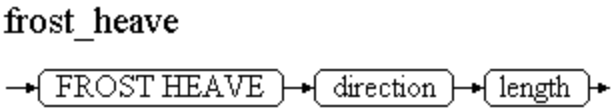
Source: In this section, constrained to be drift.

TABLE 28.19
Drift Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING SNOW	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift

28.6 AIXM Mapping and Translation Frost Heave

Frost Heave



28.6.1 FROST HEAVE [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with direction or length)

TABLE 28.20
Frost Heave

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	Class: SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	OTHER:FROST_HEAVE	ICAO	FROST HEAVE
		FAA	FROST HEAVE
		Plain Text	Frost Heave

28.6.2 Frost Heave Direction [*cardinalDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 28.21
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ cardinalDirection (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ extension/ aim:cardinalDirection		
AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

28.6.3 Frost Heave Length [contaminantLength]

Description: Length of the contaminant.

Source: User-entered (optional)

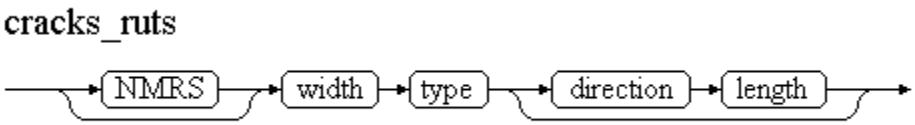
TABLE 28.22
Frost Heave Length

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ contaminentLength (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ extension/ aim:contaminentLength

AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

28.7 AIXM Mapping and Translation Cracks/Ruts and Soft Edges

Cracks/Ruts



Soft Edges

28.7.1 NMRS [*numerousDefects*]

Description: A code indicating whether there are numerous cracks/ruts on the surface.

Source: User-selected (optional).

TABLE 28.23
Numerous

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ numerousDefects (attribute)		
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:numerousDefects		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	NMRS
		FAA	NMRS
		Plain Text	NMRS
	NO	ICAO	…
		FAA	…
		Plain Text	…

28.7.2 Width [*crackWidth*]

Description: Width of a surface Defect

Source: User-entered (required, with NMRS and crackType)

TABLE 28.24
Crack Width

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackWidth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackWidth		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN
		ICAO	CM

28.7.3 Type [*crackType*]

Description:

Source: User-selected (required with crackWidth and NMRS).

TABLE 28.25
Crack Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackType (attribute)		
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackType		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	AIM Extension: aim:crackType		
	AIXM	**Translations**	
	CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	cracks
	RUTS	ICAO	RUTS
		FAA	RUTS
		Plain Text	ruts

28.7.4 Direction [*crackDirection*]

Description Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 28.26
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackDirection (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackDirection		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE

		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

28.7.5 Length [*crackLength*]

Description: Length of a surface Defect

Source: User-entered (optional)

TABLE 28.27
Crack Length

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackLength (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackLength		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

28.7.6 Soft Edges [*softEdges*]

Description: A code indicating whether there are soft edges on the surface.

Source: User-selected (optional).

TABLE 28.28
Soft Edges

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ softEdges (attribute)
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/

	SurfaceCharacteristics/ extension/ aim:softEdges		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	SOFT EDGES
		FAA	SOFT EDGES
		Plain Text	Soft Edges
	NO	ICAO	…
		FAA	…
		Plain Text	…

28.8 Business Rules

28.8.1 Template Business Rules

Enforce required items in first (second, third) layer.

a. When *coverage1 (coverage2, coverage3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

b. When *coverage1 (coverage2, coverage3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

c. When *depth1 (depth2, depth3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

d. When *type1 (type2, type3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

Enforce range in first (second, third) layer.

e. When *depth1 (depth2, depth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the first (second, third) layer in the form (THN, 1/4, 1/2 or 1)."

f. When *depth1 (depth2, depth3)* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce range of the depth of the snowdrifts

g. When *depthOfDrift* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

h. When *depthOfDrift* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce required items in action(s) fields.

i. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

j. When *clearanceRidgeType1 (clearanceRidgeType2, clearanceRidgeType3)* and/or *clearanceRidgeDepth1 (clearanceDepthType2, clearanceDepthType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

k. When *clearanceFrictionEstimation (clearanceFrictionEstimation2, clearanceFrictionEstimation3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

l. When *remainderCoverage1 (remainderCoverage2, remainderCoverage3)* and/or *remainderDepth1 (remainderDepth2, remainderDepth3)* and/or *remainderType1 (remainderType2,*

remainderType3) not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

m. When *clearanceMethod1* (*clearanceMethod2, clearanceMethod3*) is plowed, swept, plowed and swept, or plowed, swept and sanded and *width1* (*width2, width3*) equal to null then "Specify the width of the cleared area and remainder if known. Note: plowed/swept is omitted when the entire surface has been plowed."

n. When *clearanceMethod1* is null and *clearanceMethod2* and/or *clearanceMethod3* is not null then "Specify Method-1 first."

o. When *clearanceMethod2* is null and *clearanceMethod3* is not null then "Specify Method-2 before specifying Method-3."

Enforce range in action(s) fields.

p. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* equal to 0 then "Specify a width greater then 0."

q. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* greater then *runwayWidth* then "Specify a width less then or equal to the runway width."

Enforce required items in ridge fields.

r. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* not equal to null and *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* equal to null then "Specify a ridge type."

s. When *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* not equal to null and *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* equal to null then "Specify a ridge depth."

Enforce range in ridge fields.

t. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in remainder fields.

u. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

v. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

w. When *remainderDepth1 (remainderDepth2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

x. When *remainderType1 (remainderType2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

y. When *remainderType1 (remainderType2)* not equal to null and (*clearanceMethod1* equal to null and *clearanceMethod2* and *clearanceMethod3* equal to null) then "Specify at least one clearance method."

Enforce range in remainder.

z. When *remainderDepth1 (remainderDepth2)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the remainder in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in frost heave fields.

aa. When *directionFrost* not equal to null and *sectionLengthFrost* equal to null then "Specify the length of movement area affected by frost heaves."

bb. When *sectionLengthFrost* not equal to null and *directionFrost* equal to null then "Specify a direction."

Enforce range in frost heave fields.

cc. When *sectionLengthFrost* not equal to null and *sectionLengthFrost* greater than *runwayLength* then "Specify a length less then or equal to the runway length."

Enforce required items in cracks/ruts fields.

dd. When *cracksRutsWidth* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *typeCracksRuts* equal to null then "Specify a type of cracks/ruts."

ee. When *typeCracksRuts* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* equal to null then "Specify the width of cracks/ruts."

ff. When *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* and/or *directionCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type/direction of the cracks/ruts."

gg. When *directionCracksRuts* not equal to null and *cracksRutsWidth* and/or *sectionLengthCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type of the cracks/ruts and/or the length of the section of movement area affected by the cracks/ruts."

Enforce range in frost heave fields.

hh. When *sectionLengthCracksRuts* not equal to null and *sectionLengthCracksRuts* greater than *runwayLength* then "Specify a section length less then or equal to the runway length."

Enforce required items in template.

ii. Set *startDate* equal to start immediately.

Other.

jj. Ensure that one of the following sections: Surface, Conditions, Action, Ridge, Frost Heave, Cracks/Ruts or Soft Edges are completed according to the above business rules before allowing the user to submit a NOTAM.

28.8.2 Policy Business Rules (from Order 7930.2M, section 5-1-4)

a. The term BARE is not to be used in NOTAMs.

b. Report the greatest depth measured.

c. Round off measurements to the next higher reporTABLE value.

d. Measurements are as follows:

THN (< ¼ ″), ¼″, ½″, 1″, 1+″ (reported as whole numbers), 35+″ (reported as multiples of feet only)

e. A surface not completely covered should be described as PTCHY. Do not use percentages.

f. Specify the width of the cleared area if less than the width of the runway.

g. Snowbanks are assumed to be at the edge of a movement area, or at the edge of the plowed/swept area.

h. Every snow NOTAM shall have the time that the conditions were observed by the airport operator as the last element of the NOTAM.

28.8.3 Data Encoding Business Rules

a. For entering *designator* and the xlink reference to the associated Airport use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

28.9 Sample AIXM Message

RWY 13/31 4 IN SN OVR PTCHY ¼ IN IR


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <overallContaminant>
          <RunwayContamination gml:id="RC01">
            <depth uom="IN">4</depth>
            <proportion>100</proportion>
            <layer>
              <SurfaceContaminationLayer gml:id="SCL01">
                <layerOrder>1</layerOrder>
                <type>DRY_SNOW</type>
              </SurfaceContaminationLayer>
            </layer>
          </RunwayContamination>
        </overallContaminant>
        <overallContaminant>
          <RunwayContamination gml:id="RC02">
            <depth uom="IN">0.25</depth>
```

```
            <proportion>50</proportion>
            <layer>
              <SurfaceContaminationLayer gml:id="SCL02">
                <layerOrder>2</layerOrder>
                <type>ICE</type>
              </SurfaceContaminationLayer>
            </layer>
            <annotation>
              <Note gml:id="NOTE01">
                <propertyName>proportion</propertyName>
                <purpose>DESCRIPTION</purpose>
                <translatedNote>
                  <LinguisticNote gml:id="LN01">
                    <note>PATCHY</note>
                  </LinguisticNote>
                </translatedNote>
              </Note>
            </annotation>
          </RunwayContamination>
        </overallContaminant>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
```

```
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


RWY 13/31 PLW 150 WIDE 4 IN SNBNK RMDR PTCY THN SN


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <overallContaminant>
          <RunwayContamination gml:id="RC01">
            <criticalRidge>
              <Ridge gml:id="RIDGE01">
```

```
                <depth uom="IN">4</depth>
                <extension>
                  <aim:RidgeExtension>
                    <aim:ridgeType>SNOWBANK</aim:ridgeType>
                  </aim:RidgeExtension>
                </extension>
              </Ridge>
            </criticalRidge>
            <annotation>
              <Note gml:id="NOTE02">
                <propertyName>clearedWidth</propertyName>
                <purpose>REMARK</purpose>
                <translatedNote>
                  <LinguisticNote gml:id="LN02">
                    <note>PLOWED</note>
                  </LinguisticNote>
                </translatedNote>
              </Note>
            </annotation>
            <clearedWidth uom="FT">150</clearedWidth>
          </RunwayContamination>
        </overallContaminant>
        <areaContaminant>
          <RunwaySectionContamination gml:id="RSC01">
            <depth uom="IN">0.24</depth>
            <proportion>50</proportion>
            <layer>
              <SurfaceContaminationLayer gml:id="SCL01">
                <layerOrder>1</layerOrder>
                <type>DRY_SNOW</type>
              </SurfaceContaminationLayer>
            </layer>
            <annotation>
              <Note gml:id="NOTE03">
                <propertyName>proportion</propertyName>
                <purpose>DESCRIPTION</purpose>
                <translatedNote>
                  <LinguisticNote gml:id="LN03">
                    <note>PATCHY</note>
                  </LinguisticNote>
                </translatedNote>
              </Note>
            </annotation>
          </RunwaySectionContamination>
        </areaContaminant>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
```

```
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="ACY_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


RWY 13/31 NMRS 1 IN CRACKS


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
    <Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
```

```
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition></gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWY01_TS02_TP01">
            <gml:beginPosition></gml:beginPosition>
            <gml:endPosition></gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <surfaceProperties>
          <SurfaceCharacteristics gml:id="SC01">
            <extension>
              <aim:SurfaceCharacteristicsExtension>
                <aim:crackType>CRACKS</aim:crackType >
                <aim:crackWidth uom="IN">1</aim:crackWidth >
              </aim: SurfaceCharacteristicsExtension>
            </extension>
          </SurfaceCharacteristics>
        </surfaceProperties>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
```

```
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


28.10 Translation Templates

28.10.1 FAA

RWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES**

28.10.2 ICAO E Line

RWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES**

28.10.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*

CONDITION(S)
coverage1 depth1 type1
over *coverage2 depth2 type2*
over *coverage3 depth3 type3*
Drifts: *depthOfDrift*
Breaking Action: *frictionEstimationSurface*

CLEARANCE METHOD(S)
clearanceMethod1
clearanceWidth1 **WIDE**
Ridge: *clearanceRidgeDepth1 clearanceRidgeType1*
clearanceMethod2
clearanceWidth2 **WIDE**
Ridge: *clearanceRidgeDepth2 clearanceRidgeType2*
clearanceMethod3
clearanceWidth3 **WIDE**
Ridge: *clearanceRidgeDepth3 clearanceRidgeType3*
Remainder: *remainderCoverage1 remainderDepth1 remainderType1*
over *remainderCoverage2 remainderDepth2 remainderType2*
Drifts: *remainderDepthOfDrift*
Breaking Action: *remainderFrictionEstimation*

RIDGE
ridgeDepth ridgeType

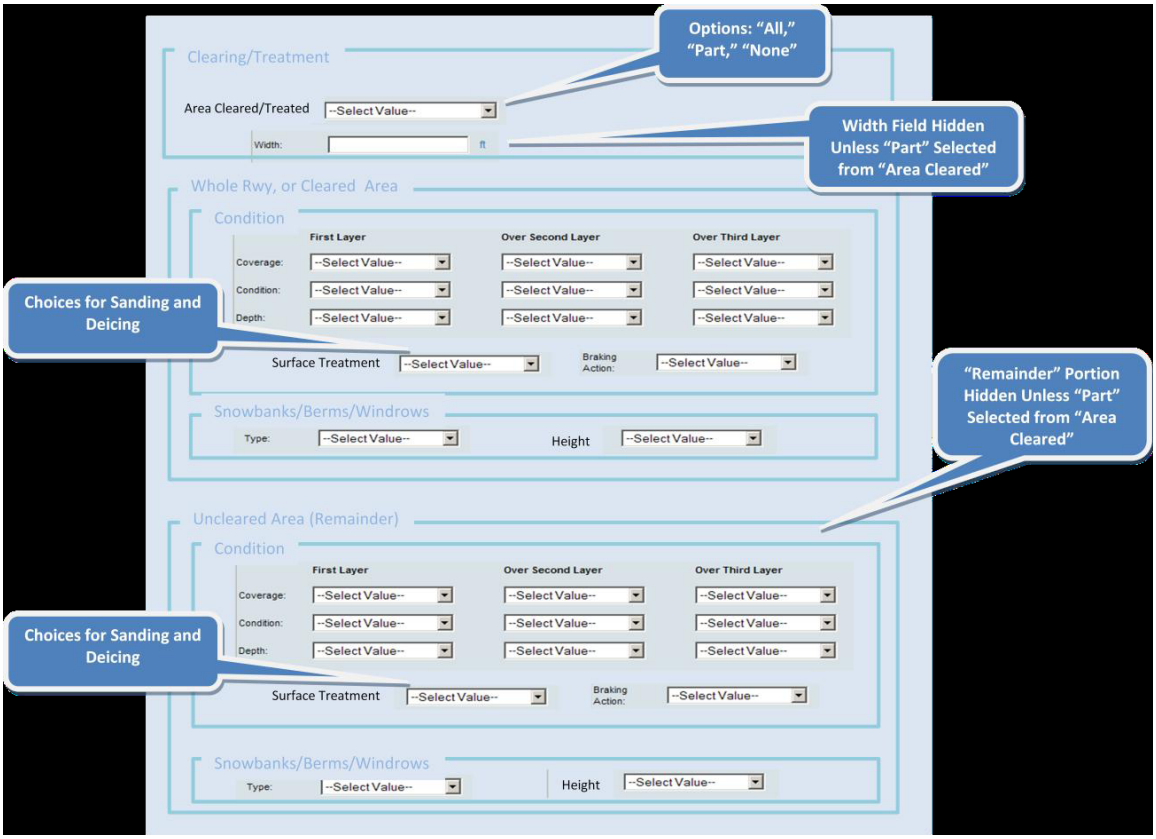
CRACKS/RUTS
cracksRutsWidth **CRACKS|RUTS**
Direction: *directionCracksRuts*
Length of Surface: *sectionLengthCracksRuts*

FROST HEAVES
Direction: *directionFrost*
Length of Surface: *sectionLengthFrost*

SOFT EDGES
Present|Not Present

28.11 Additional Analysis

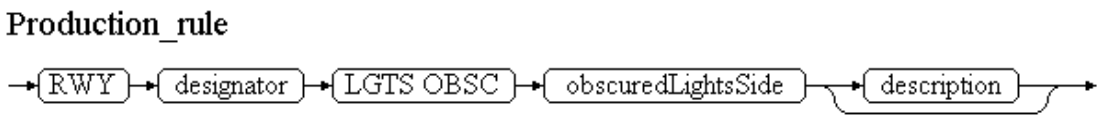
The Surface Condition template needs to be able to capture a lot of information, which leads to a very complicated and crowded user interface. The American Institutes for Research provide a Human Factors Review of the Digital NOTAM Manager Template. Their recommendation for template layout is captured below:



This template also captures the ICAO SNOWTAM format where the conditions are reported by thirds of the Runway, which is not consistent with current policy. However, the overall layout of the template could be useful to capture.

29 Runway - Lights Obscured

Specify that runway lights are obscured due to some undefined reason. Runway Lights Obscured maps to Runway.



29.1 Example NOTAMs

1. GRR 12/605 GRR RWY 8R/26L LGTS OBSC BTWN TWY B,A2 WEF 0812191115
2. !SVA 02/001 SVA RWY 5/23 RWY LGTS OBSC S SIDE WEF 0902062026
3. !BTV BTV RWY 1/19 LGTS OBSC WEF 0710131300-0710141300
[FAA Order JO 7930.2, para 5-2-2d4(c) Example #1]

Source: US NOTAM Repository

29.2 AIXM Mapping and Translation

29.2.1 Scenario Details

TABLE 29.1

Attribute	Value
Description	Specifies that runway lights are obscured
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway AirportHeliport/ SurfaceContamination
Feature XPath	aixm:Runway
AIXM Mapping Diagram	Runway Surface Contamination
NOTAM lifespan	
Start ASAP	YES

29.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 29.2
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

29.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 29.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

29.2.4 Lights Obscured [*obscuredLights*]

Description: Indicates that the surface lights are obscured.

Source: Assumed when Lights Obscured event specification is selected.

TABLE 29.4
Lights Obscured

Attribute	Value		
AIXM Path (UML)	Runway(feature)/ Runway Contamination (object) (in Surface Contamination)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ overallContaminant/ RunwayContaminant/ obscuredLights		
AIXM Mapping	Class: RunwayContamination		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	LGTS OBSC
		FAA	LGTS OBSC
		Plain Text	Lights Obscured

29.2.5 Obscured Lights Side [*obscuredLightsSide*]

Description: Indicates the side on which the lights are obscured.

Source: User-selected (required).

TABLE 29.5
Obscured Light Side

Attribute	Value
AIXM Path (UML)	Runway (feature)/ Runway Contamination (object) (in Surface Contamination)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ overallContaminant/ RunwayContaminant/ obscuredLightsSide
AIXM Mapping	Class: RunwayContamination

Enumeration	CodeSideType		
	AIXM	**Translations**	
	OTHER:NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	North Side
	OTHER:EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	East Side
	OTHER:SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	South Side
	OTHER:WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	West Side
	OTHER:NORTHWEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	Northwest Side
	OTHER:NORTHEAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	Northeast Side
	OTHER:SOUTHWEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	Southwest Side
	OTHER:SOUTHEAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	Southeast Side
	BOTH	ICAO	--
		FAA	--
		Plain Text	All Sides

29.2.6 Description: [*annotation*]

Description: Brief additional description of the operational situation.

Source: User-entered free text.

TABLE 29.6
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ Runway Contamination (object) (in Surface Contamination)	
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice[interpretation:TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	obscuredLightsSide
	purpose	REMARK
Enumeration	TextNoteType	

29.3 Q Codes

TABLE 29.7
QCode for Runway Lights Obscured

AIXM Code	Q Code	
YES	**Series**	**A**
	Q Code	QLEXX
	Scope	A
	Traffic	IV
	Purpose	NBO

29.4 Business Rules

29.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *obscuredLightsSide* equal to null, then "Select a side."

29.4.2 Policy Business Rules (from FAA Order JO 7930.2, paragraph 5-2-2d4(c))

a. Lights that are partially obscured should not be reported using this NOTAM.

b. The reason for obscuration should not be reported.

29.4.3 Data Encoding Business Rules

a. The element of type *designator* is required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The elements of type *obscuredLights* and *obscuredLightsSide* are required and must use a TimeSlice of type TEMPDELTA.

c. For entering *description*, use TimeSlice of type TEMPDELTA. If *description* is not entered by the user, then remove this from the AIXM message.

29.5 Sample AIXM Message

Sample NOTAM Message: RWY 4/22 LGTS OBSC N SIDE


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Runway gml:id="Runway01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
      <RunwayTimeSlice gml:id="Runway01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="Runway01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayTimeSlice gml:id="Runway01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="Runway01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>23</sequenceNumber>
        <overallContaminant>
          <RunwayContamination gml:id="RunwayCont01">
            <obscuredLights>YES</obscuredLights>
            <obscuredLightsSide>OTHER:NORTH</obscuredLightsSide>
          </RunwayContamination>
        </overallContaminant>
        <annotation>
          <Note gml:id="Note01">
            <translatedNote>
              <LinguisticNote gml:id="LinguisticNote01">
                <note>DESCRIPTION</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
```

```
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


29.6 Translation Templates

29.6.1 FAA

RWY *designator* **LGTS OBSC** *obscuredLightsSide description*

29.6.2 ICAO E Line

RWY *designator* **LIGHTS OBSCURED** *obscuredLightsSide description*

29.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway Lights Obscured

Affected Runway: *designator*

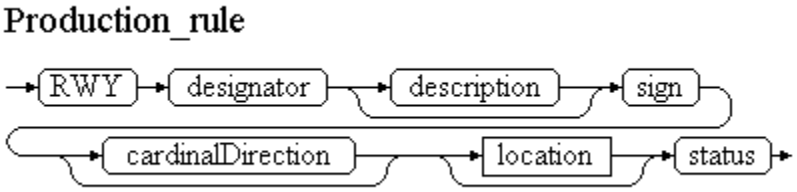
Light Status: Lights obscured on *obscuredLightsSide description*

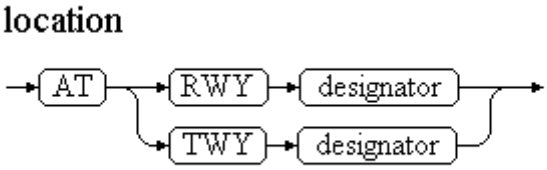
29.7 Additional Analysis

ALL Runways may not be a valid option. An airport cannot close ALL Runways (except alternatively for Snow Removal by LOA), but it is not clear if ALL Runway Lights are Obscured. We think this should be okay, but this will need to pass SME validation.

30 Runway – Lighted Sign Status

This scenario is used to specify the status of lighted signage located on the airport facility.





30.1 Example NOTAMs

1. !BTV 02/051 BTV RWY 15/33 HOLD SHORT SIGN AT TWY F UNLGTD
2. !BRO 11/015 BRO RWY 17/35 HOLD SIGN AT RWY 13R/31L UNLGTD

Source: US NOTAM Repository

30.2 AIXM Mapping and Translation

30.2.1 Scenario Details

TABLE 30.1

Attribute	Value
Description	Specify the status of signs on a runway.
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway
Feature Path	aixm:Runway
AIXM Mapping Diagram	Runway AIM Extension: AirportSign
NOTAM lifespan	
Start ASAP	Yes

30.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 30.2
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice

	[interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

30.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 30.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

30.2.4 Sign Type [*type*]

Description: The type of sign that is affected.

Source: User-selected (required)

TABLE 30.4
Sign Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ signType		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	AIM Extension: CodeSignType		
	AIXM	**Translations**	
	HOLD_INSTRUMENT_LANDING_SYSTEM	ICAO	ILS CRITICAL HOLD SIGN
		FAA	ILS CRITICAL HOLD SIGN
		Plain Text	Holding position sign for ILS critical areas
	HOLD_RUNWAY_APPROACH	ICAO	APPROACH AREA HOLD SIGN
		FAA	APPROACH AREA HOLD SIGN
		Plain Text	Holding position sign for runway approach areas
	HOLD_RUNWAY_INTERSECTION	ICAO	RWY INT HOLD SIGN
		FAA	RWY INT HOLD SIGN
		Plain Text	Holding position sign for runway/runway intersection
	HOLD_TAXIWAY_RUNWAY	ICAO	HOLD SIGN

		FAA	HOLD SIGN
		Plain Text	Holding position sign
	INFO	ICAO	INFORMATION SIGN
		FAA	INFORMATION SIGN
		Plain Text	Information sign
	INSTRUMENT_LANDING_SYSTEM_CRITICAL	ICAO	ILS CRITICAL BOUNDARY SIGN
		FAA	ILS CRITICAL BOUNDARY SIGN
		Plain Text	ILS critical boundary sign
	NO_ENTRY	ICAO	NO ENTRY SIGN
		FAA	NO ENTRY SIGN
		Plain Text	No entry sign
	OUTBOUND_DESTINATION	ICAO	OUBD DESTN SIGN
		FAA	OBND DESTN SIGN
		Plain Text	Outbound destination sign
	ROAD_STOP	ICAO	STOP SIGN
		FAA	STOP SIGN
		Plain Text	Stop sign
	RSA_RUNWAY_APPROACH	ICAO	RWY APCH BOUNDARY SIGN
		FAA	RWY APCH BOUNDARY SIGN
		Plain Text	Runway approach boundary sign
	RUNWAY_LOCATION	ICAO	RWY LOCATION SIGN
		FAA	RWY LOCATION SIGN
		Plain Text	RWY location sign
	OTHER:ALL	ICAO	ALL SIGNS
		FAA	ALL SIGNS
		Plain Text	All signs

30.2.5 Position [*location*]

Description: A code indicating the position of an item on a surface near a runway.

Source: Baseline data (required – future).

TABLE 30.5
Sign Location

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/ location (attribute)
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ location/ significantPoint/ gml:pos
AIXM Mapping	Class: AIM Extension AirportSign
Datatype	GML – decimal

30.2.6 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 30.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ cardinalDirection		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

30.2.7 At Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 30.7
Location Description

Attribute	Value	
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/	
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	type
	purpose	DESCRIPTION

Enumeration	TextNoteType		
	AIXM	**Translations**	
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

30.2.8 At Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 30.8
Location Description

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

30.2.9 Sign Status [*status*]

Description: The operational status of the lighted sign.
Source: User-selected (required).

TABLE 30.9
Airport Sign Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	Sign/ timeSlice/ SignTimeSlice [interpretation:TEMPDELTA]/ status		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeStatusType		
	AIXM	**Translations**	
	UNLIGHTED	ICAO	UNLGTD
		FAA	UNLGTD
		Plain Text	Unlighted
	OBSCURED	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Obscured
	UNSERVICEABLE	ICAO	UNAVBL
		FAA	UNAVBL

		Plain Text	Unavailable
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard

30.3 Q Codes

TABLE 30.10
QCodes for Airport Sign Status

AIXM Code	Q Code	
ALL	**Series**	**A**
UNLIGHTED	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OBSCURED	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
UNSERVICEABLE	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
NON_STANDARD	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO

30.4 Business Rules

30.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *type* equal to null, then "Select a type of lighted signage."

c. When *status* equal to null, then "Select a status for the sign."

d. Both the **description** and **location** are optional.

e. For **location**, the user should only be able to select Runways or Taxiways that intersect with the selected Runway/Taxiway.

f. For **location**, the user should only be able to enter information for FOR or BETWEEN.

30.4.2 Policy Business Rules

Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (FAA Order JO 7930.2, para 5-2-1a).

30.4.3 Data Encoding Business Rules

a. The elements of type *designator*, *type*, and **location** are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The elements of type **description**, *cardinalDirection*, *forRunway*, *for Taxiway*, and *note* are optional and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

c. The element of type *status* is required and must use a TimeSlice of type TEMPDELTA.

d. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

30.5 Sample AIXM Message

Sample NOTAM Message: RWY 13/31 HOLD SIGN AT APCH END RWY 04 UNLGTD


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <aim:AirportSign gml:id="SIGN01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <aim:timeSlice>
      <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <aim:interpretation>SNAPSHOT</aim:interpretation>
        <aim:signType>HOLD_RUNWAY_INTERSECTION</aim: signType >
        <associatedRunway xlink:href="#RWY01"/>
        <annotation>
          <Note gml:id="Note01">
          <propertyName>signType</propertyName>
          <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LinguisticNote01">
                <note>FOR APCH END RWY 04</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </aim:AirportSignTimeSlice>
    </aim:timeSlice>
    <aim:timeSlice>
      <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <aim:interpretation>TEMPDELTA</aim:interpretation>
        <sequenceNumber>13</sequenceNumber>
        <aim:status>UNLIGHTED</aim:status>
      </aim:AirportSignTimeSlice>
```

```
      </aim:timeSlice>
    </aim:AirportSign>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayTimeSlice gml:id="RWY01_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13/31</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
```

```
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


30.6 Translation Templates

30.6.1 FAA

RWY *designator* **[description]** sign*Type* **[**cardinalDirection**] [location]** *status* **WEF**

30.6.2 ICAO E Line

RWY *designator* **[description]** sign*Type* **[**cardinalDirection**] [location]** *status* **WEF**

30.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Runway: *designator*

Affected Sign: description sign*Type*

Location: location

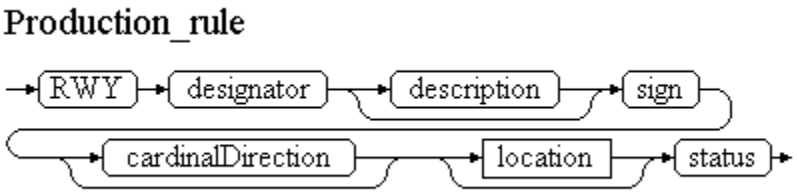
Status: *lighted*

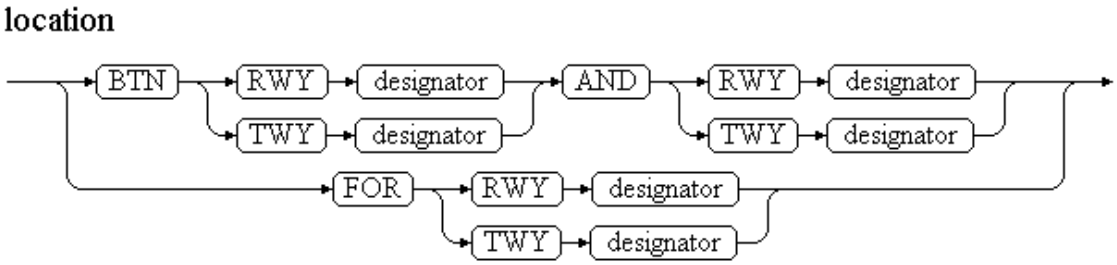
30.7 Additional Analysis

Based on SME review from Airports, Runway Safety, and the FNS team, HOLD Signs can be written under both the Taxiway Keyword and the Runway Keyword.

31 Runway Direction – Lighted Sign Status

This scenario is used to specify the status of lighted signage located on the airport facility.





31.1 Example NOTAMs

1. !PSM 05/024 PSM RWY 16 DISTANCE REMAINING SIGN OBSC
2. !ABY 03/005 ABY RWY 4 4000 FT DISTANCE REMAINING SIGN UNLGTD

Source: US NOTAM Repository

31.2 AIXM Mapping and Translation

31.2.1 Scenario Details

TABLE 31.1

Attribute	Value
Description	Specify the status of signs on a runway.
Maps to Keyword	Runway Direction
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
AIXM Mapping Diagram	RunwayDirection AIM Extension: AirportSign
NOTAM lifespan	
Start ASAP	Yes

31.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 31.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

31.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 31.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

31.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 31.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

31.2.5 Description: [*description*]

Description: Text message which appears on the sign (ie, 4000 FT, 2000 FT, etc.)

Source: User-entered (optional).

TABLE 31.5
Sign Description: (User-Entered Text)

Attribute	Value	
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/ annotation/ note	
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:TEMPDELTA]/ annotation Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	type
	purpose	DESCRIPTION
Enumeration	TextNoteType	

31.2.6 Sign Type [*type*]

Description: The type of sign that is affected.

Source: User-selected (required)

TABLE 31.6
Sign Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ signType		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	AIM Extension: CodeSignType		
	AIXM	**Translations**	
	CIVIL	ICAO	CIVIL SIGN
		FAA	CIVIL SIGN
		Plain Text	Civil aircraft area sign
	FBO	ICAO	FBO SIGN
		FAA	FBO SIGN
		Plain Text	Fixed based operator sign
	GUIDANCE	ICAO	GUIDANCE SIGN
		FAA	GUIDANCE SIGN
		Plain Text	Guidance Sign
	HOLD_INSTRUMENT_LANDING_ SYSTEM	ICAO	ILS CRITICAL HOLD SIGN
		FAA	ILS CRITICAL HOLD SIGN
		Plain Text	Holding position sign for ILS critical areas
	HOLD_RUNWAY_APPROACH	ICAO	APPROACH AREA HOLD SIGN
		FAA	APPROACH AREA HOLD SIGN
		Plain Text	Holding position sign for runway approach areas
	HOLD_RUNWAY_INTERSECTION	ICAO	RWY INT HOLD SIGN
		FAA	RWY INT HOLD SIGN
		Plain Text	Holding position sign for runway/runway intersection
	HOLD_TAXIWAY_RUNWAY	ICAO	HOLD SIGN
		FAA	HOLD SIGN

		Plain Text	Holding position sign
	INFO	ICAO	INFORMATION SIGN
		FAA	INFORMATION SIGN
		Plain Text	Information sign
	INSTRUMENT_LANDING_SYSTEM_CRITICAL	ICAO	ILS CRITICAL BOUNDARY SIGN
		FAA	ILS CRITICAL BOUNDARY SIGN
		Plain Text	ILS critical boundary sign
	INTL	ICAO	INTL SIGN
		FAA	INTL SIGN
		Plain Text	International flight area sign
	MIL	ICAO	MIL SIGN
		FAA	MIL SIGN
		Plain Text	Military aircraft area sign
	NO_ENTRY	ICAO	NO ENTRY SIGN
		FAA	NO ENTRY SIGN
		Plain Text	No entry sign
	OUTBOUND_DESTINATION	ICAO	OUBD DESTN SIGN
		FAA	OBND DESTN SIGN
		Plain Text	Outbound destination sign
	PAX	ICAO	PAX SIGN
		FAA	PAX SIGN
		Plain Text	Destination sign for areas set aside for passenger handling
	RSA_RUNWAY_APPROACH	ICAO	RWY APCH BOUNDARY SIGN
		FAA	RWY APCH BOUNDARY SIGN
		Plain Text	Runway approach boundary sign
	RUNWAY_EXIT	ICAO	RWY EXIT SIGN
		FAA	RWY EXIT SIGN
		Plain Text	Runway exit sign
	RUNWAY_LOCATION	ICAO	RWY LOCATION SIGN
		FAA	RWY LOCATION SIGN
		Plain Text	RWY location sign
	RUNWAY_DISTANCE_REMAINING	ICAO	DISTANCE REMAINING SIGN
		FAA	DISTANCE REMAINING SIGN
		Plain Text	Distance remaining sign
	TAXIWAY_DIRECTION	ICAO	TWY DIRECTION SIGN
		FAA	TWY DIRECTION SIGN
		Plain Text	Taxiway direction sign
	TAXIWAY_END	ICAO	TWY END SIGN
		FAA	TWY END SIGN
		Plain Text	Taxiway ending sign
	TAXIWAY_LOCATION	ICAO	TWY LOCATION SIGN
		FAA	TWY LOCATION SIGN
		Plain Text	Taxiway location sign
	TERMINAL	ICAO	TERMINAL SIGN
		FAA	TRML SIGN
		Plain Text	Gate positions sign
	OTHER:ALL	ICAO	ALL SIGNS

		FAA	ALL SIGNS
		Plain Text	All signs

31.2.7 Position [*location*]

Description: A code indicating the position of an item on a surface near a runway.

Source: Baseline data (required – future).

TABLE 31.7
Sign Location

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/ location (attribute)
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ location/ significantPoint/ gml:pos
AIXM Mapping	Class: AIM Extension AirportSign
Datatype	GML – decimal

31.2.8 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 31.8
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ cardinalDirection		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side

	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

31.2.9 At Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 31.9
Location Description

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>

31.2.10 At Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 31.10
Location Description

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

31.2.11 Between Location 1 and Location 2 [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 31.11
Location Description

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: AIM Extension AirportSign		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	BETWEEN <*designator1*> and <*designator2*>	ICAO	BETWEEN <*designator1*> and <*designator2*>
		FAA	BTN <*designator1*> and <*designator2*>
		Plain Text	Between <*designator1*> and <*designator2*>

31.2.12 Sign Status [*status*]

Description: The operational status of the lighted sign.

Source: User-selected (required).

TABLE 31.12
Airport Sign Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	Sign/ timeSlice/ SignTimeSlice [interpretation:TEMPDELTA]/ status		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeStatusType		
	AIXM	**Translations**	
	UNLIGHTED	ICAO	UNLGTD
		FAA	UNLGTD
		Plain Text	Unlighted
	OBSCURED	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Obscured
	UNSERVICEABLE	ICAO	UNAVBL
		FAA	UNAVBL
		Plain Text	Unavailable
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD

		Plain Text	Non-Standard

31.3 Q Codes

TABLE 31.13
QCodes for Airport Sign Status

AIXM Code	Q Code	
ALL	**Series**	**A**
UNLIGHTED	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OBSCURED	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
UNSERVICEABLE	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
NON_STANDARD	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO

31.4 Business Rules

31.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *type* equal to null, then "Select a type of lighted signage."

c. When *status* equal to null, then "Select a status for the sign."

d. Both the **description** and **location** are optional.

e. For **location**, the user should only be able to select Runways or Taxiways that intersect with the selected Runway/Taxiway.

f. For **location**, the user should only be able to enter information for FOR or BETWEEN.

31.4.2 Policy Business Rules

Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (FAA Order JO 7930.2, para 5-2-1a).

31.4.3 Data Encoding Business Rules

a. The elements of type *designator*, *type*, and **location** are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The elements of type **description**, *cardinalDirection*, *forRunway*, *for Taxiway*, and *note* are optional and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

c. The element of type *status* is required and must use a TimeSlice of type TEMPDELTA.

d. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

e. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

31.5 Sample AIXM Message

Sample NOTAM Message: RWY 13 HOLD SIGN FOR RWY 4/22 UNLGTD


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <aim:AirportSign gml:id="SIGN01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <aim:timeSlice>
      <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <aim:interpretation>SNAPSHOT</aim:interpretation>
        <aim:signType>HOLD_RUNWAY_INTERSECTION</aim: signType >
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
        <annotation>
          <Note gml:id="Note01">
          <propertyName>signType</propertyName>
          <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LinguisticNote01">
                <note>FOR RWY 4/22</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </aim:AirportSignTimeSlice>
    </aim:timeSlice>
    <aim:timeSlice>
      <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <aim:interpretation>TEMPDELTA</aim:interpretation>
        <sequenceNumber>13</sequenceNumber>
        <aim:status>UNLIGHTED</aim:status>
      </aim:AirportSignTimeSlice>
    </aim:timeSlice>
  </aim:AirportSign>
```

```
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
```

```
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


31.6 Translation Templates

31.6.1 FAA

RWY *designator* **[description]** sign*Type* **[**cardinalDirection**] [location]** *status* **WEF**

31.6.2 ICAO E Line

RWY *designator* **[description]** sign*Type* **[**cardinalDirection**] [location]** *status* **WEF**

31.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Runway: *designator*

Affected Sign: description sign*Type*

Location: location

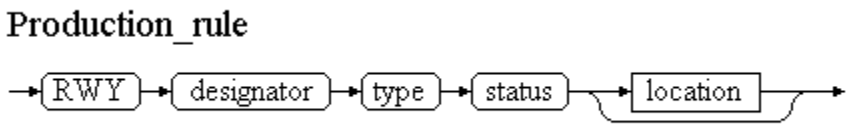
Status: *lighted*

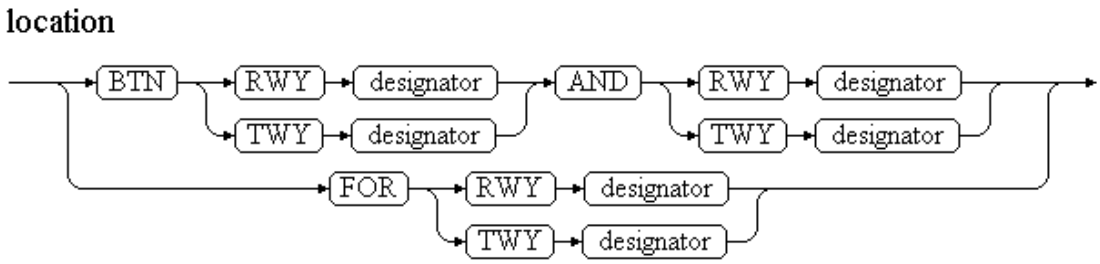
31.7 Additional Analysis

About half of the NOTAMs issued for Runway Hold Signs in the last year call the sign a "Hold Sign" and the other half call it a "Hold Short Sign."

32 Runway – Ground Lighting Status

This scenario is used to specify the status of the lighting system provided for a landing and take-off direction of a runway.





32.1 Example NOTAMs

1. !FAI 12/521 51Z RWY 2/20 MIRL CMSN WEF 0812120100
2. !DFW 03/249 DFW RWY 18L/36R RWSL OTS

Source: US NOTAM Repository

32.2 AIXM Mapping and Translation

32.2.1 Scenario Details

TABLE 32.1

Attribute	Value
Description	Specify status of the lighting system provided for a landing and take-off direction of a runway
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Lighting/ Surface Lighting Elements
Feature XPath	aixm:RunwayDirectionLightSystem
AIXM Mapping	Runway SurfaceLightingElements
NOTAM lifespan	
Start ASAP	YES

32.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 32.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

32.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 32.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

32.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 32.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

32.2.5 Type [*lightType*]

Description: The type of runway light

Source: User-selected (required)

TABLE 32.5
Runway Ground Light Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Runway Direction Light System Extension/ Runway Direction Light System/ RunwayDirectionLightSystem/ lightType		
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:SNAPSHOT]/ extension/ lightType		
AIXM Mapping	Class: RunwayDirectionLightSystem		
Enumeration	AIMExtension: CodeLightingType		
	AIXM	**Translations**	
	RCLL	ICAO	RCLL
		FAA	RCLL
		Plain Text	Runway centerline lighting
	EDGE	ICAO	RWY LGTS
		FAA	RWY LGTS
		Plain Text	Runway edge lights
	LIRL	ICAO	LOW INTST RWY LGT
		FAA	LIRL
		Plain Text	Low intensity runway lights
	MIRL	ICAO	MEDIUM INTST RWY LGT
		FAA	MIRL
		Plain Text	Medium intensity runway lights
	HIRL	ICAO	HIGH INTST RWY LGT
		FAA	HIRL
		Plain Text	High intensity runway lights
	RWY_INT	ICAO	RWY GUARD
		FAA	RWY GUARD
		Plain Text	runway guard
	OTHER:STOP_BAR	ICAO	STOP BAR LGTS
		FAA	STOP BAR LGTS
		Plain Text	Stop Bar Lights
	OTHER:ELV_GUARD*	ICAO	ELEVATED GUARD
		FAA	ELEVATED GUARD
	Airport Specific (FAI)	Plain Text	Elevated Guard

32.2.6 Status [operationalStatus]

Description: An indication of the operational status of the lighting system.

Source: User-selected (required).

TABLE 32.6
Runway Ground Light Operational Status

Attribute	Value
AIXM Path (UML)	GroundLightSystem (feature)/ GroundLightingAvailability (object)/ operationalStatus (attribute)
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus
AIXM Mapping	GroundLightingAvailability

Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service
	OTHER:COMMISSIONED	ICAO	COMMISSIONED
		FAA	CMSN
		Plain Text	Commissioned
	OTHER:DECOMMISSIONED	ICAO	DECOMMISSIONED
		FAA	DCMSN
		Plain Text	Decommissioned
	DOWNGRADED*	ICAO	For segment, see above. For the rest, see below.
		FAA	
		Plain Text	
AIXM Path (UML)	GroundLightSystem (feature)/ GroundLightingAvailability (object)/ annotation		
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ GroundLightingAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non Standard

32.2.7 Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 32.7
Location

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ annotation (object)/ note		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and

			<designator2>
	Full Taxiway	ICAO	AT TWY *<designator>*
		FAA	AT TWY *<designator>*
		Plain Text	at Taxiway *<designator>*
	Full Runway	ICAO	AT RWY *<designator>*
		FAA	AT RWY *<designator>*
		Plain Text	At Runway *<designator>*

32.3 Q Codes

TABLE 32.8
QCodes (2nd and 3rd letter) Runway Ground Lighting Status

AIXM Code	Translations	
RCLL	Q Code (second & third)	QLC-- (runway centre line lights …)
EDGE	Q Code (second & third)	QLE-- (runway edge lights…)
LIRL	Q Code (second & third)	QLL-- (low intensity runway lights…)
MIRL	Q Code (second & third)	QLM-- (medium intensity runway lights…)
HIRL	Q Code (second & third)	QLH-- (high intensity runway lights…)
RWY GUARD/ ELEV GUARD	Q Code (second and third)	QXX--

TABLE 32.9 QCodes
(4th and 5th letter) Runway Ground Lighting Status

AIXM Code	Translations	
ALL	**Series**	**A**
UNSERVICEABLE	ICAO	OUT OF SERVICE
	FAA	OTS
	Plain Text	Out of service
	Q Code (fourth & fifth)	Q—AS (…OTS)
	Scope	A
	Traffic	IV
	Purpose	NBO
NON_STD	ICAO	NON STD
	FAA	NON STD
	Plain Text	Non Standard
	Q Code (fourth & fifth)	Q—XX
	Scope	A
	Traffic	IV
	Puporse	NBO
COMMISSIONED	ICAO	INSTALLED (INSTL)
	FAA	CMSN
	Plain Text	Commissioned

	Q Code (fourth & fifth)	Q--CS (…installed)
	Scope	A
	Traffic	IV
	Purpose	NBO
DECOMMISSIONED	ICAO	COMPLETELY WITHDRAWN
	FAA	DCMSN
	Plain Text	Decommissioned
	Q Code (fourth & fifth)	Q--AW (…completely withdrawn)
	Scope	A
	Traffic	IV
	Purpose	NBO

32.4 Business Rules

32.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *type* equal to null, then "Select a type of runway lighting system."

c. When *status* equal to null, then "Select a status for the light system."

d. When *status* equal to CMSND and *type* equal to EDGE, then "When commissioning a runway edge light system, select the exact type of runway edge light system (LIRL, MIRL, HIRL)."

32.4.2 Policy Business Rules (from FAA Order JO 7930.2, chapter 5, section 2)

a. Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (para 5-2-1a).

b. When commissioning runway edge light systems, indicate the exact type of system; e.g., LIRL, MIRL, HIRL, etc. Once commissioned and published, runway edge lights shall only be shown as RWY LGTS (para 5-2-2d4).

32.4.3 Data Encoding Business Rules

a. The elements of type *designator*, *type,* and either *alignmentIndicator* or *sequencedFlashing* are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

c. For entering *operationalStatus* COMMISSIONED use a Timeslice of type BASELINE and for *operationalStatus* DECOMMISSIONED use a TimeSlice of type PERMDELTA.

d. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

e. The associated Runway should have interpretation SNAPSHOT and contain the designator;an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

32.5 Sample AIXM Message

Sample NOTAM Message: RWY 04/22 RCLL OTS


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation=http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="RWYDIRLGTSYS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIRLGTSYS01_TS01_TI01">
            <gml:timePosition></gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <extension>
          <aim:RunwayDirectionLightSystemExtension>
            <aim:lightType>RCLL</aim:lightType>
          </aim: RunwayDirectionLightSystemExtension>
        </extension>
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIRLGTSYS01_TS02_TP01">
            <gml:beginPosition></gml:beginPosition>
            <gml:endPosition></gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>16</sequenceNumber>
        <availability>
          <GroundLightingAvailability gml:id="GLA01">
            <operationalStatus>UNSERVICEABLE</operationalStatus>
          </GroundLightingAvailability>
        </availability>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
  </RunwayDirectionLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="RWYDIRLGTSYS02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIRLGTSYS02_TS01_TI01">
            <gml:timePosition></gml:timePosition>
          </gml:TimeInstant>
```

```
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <extension>
            <aim:RunwayDirectionLightSystemExtension>
              <aim:lightType>RCLL</aim:lightType>
            </aim: RunwayDirectionLightSystemExtension>
          </extension>
          <associatedRunwayDirection xlink:href="#RWYDIR02"/>
        </RunwayDirectionLightSystemTimeSlice>
      </timeSlice>
      <timeSlice>
        <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS02_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="RWYDIRLGTSYS02_TS02_TP01">
              <gml:beginPosition></gml:beginPosition>
              <gml:endPosition></gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>16</sequenceNumber>
          <availability>
            <GroundLightingAvailability gml:id="GLA02">
              <operationalStatus>UNSERVICEABLE</operationalStatus>
            </GroundLightingAvailability>
          </availability>
        </RunwayDirectionLightSystemTimeSlice>
      </timeSlice>
    </RunwayDirectionLightSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04</designator>
          <usedRunway xlink:href="#RWY01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>22</designator>
```

```
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
```

```
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


32.6 Translation Templates

32.6.1 FAA

RWY *designator type operationalStatus* **WEF**

32.6.2 ICAO E Line

RWY *designator type operationalStatus* **WEF**

32.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*

Lighting System: *type*

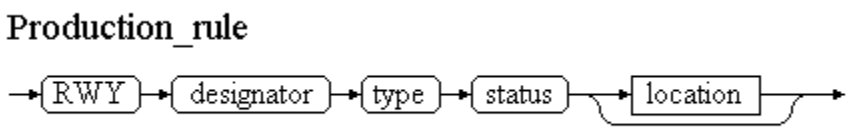
Status: *operationalStatus*

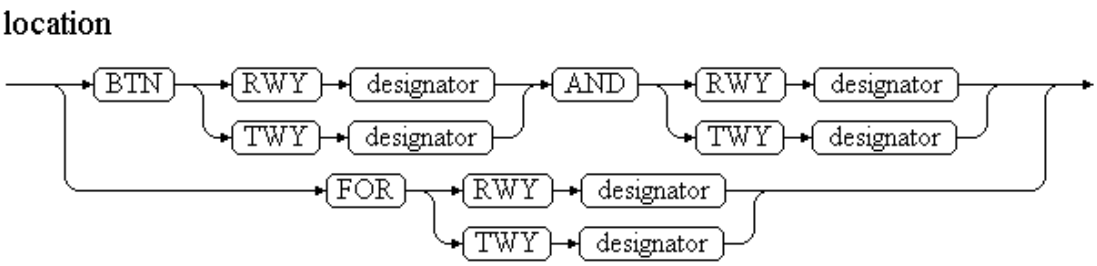
32.7 Additional Analysis

None.

33 Runway Direction – Ground Lighting Status

This scenario is used to specify the status of the lighting system provided for a landing and take-off direction of a runway.





33.1 Example NOTAMs

1. !ORD 05/097 ORD RWY 28 TDZ MARKINGS REMOVED TIL 0910011100
2. !DEN 08/328 DEN RWY 8/26 RLLS AT TWY M, R9, R8 OTS TS
3. !MKC 04/017 MKC RWY 1 RLLS OTS

Source: US NOTAM Repository

33.2 AIXM Mapping and Translation

33.2.1 Scenario Details

TABLE 33.1

Attribute	Value
Description	Specify status of the lighting system provided for a landing and take-off direction of a runway
Maps to Keyword:	Runway Direction
Feature Type Id	AirportHeliport/ Lighting/ Surface Lighting Elements
Feature XPath	aixm:RunwayDirectionLightSystem
AIXM Mapping	RunwayDirection SurfaceLightingElements
NOTAM lifespan	
Start ASAP	YES

33.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 33.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

33.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 33.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

33.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 33.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

33.2.5 Type [*lightType*]

Description: The type of runway light

Source: User-selected (required)

TABLE 33.5
Runway Ground Light Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Runway Direction Light System Extension/ Runway Direction Light System/ RunwayDirectionLightSystem/ lightType		
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:SNAPSHOT]/ extension/ lightType		
AIXM Mapping	Class: RunwayDirectionLightSystem		
Enumeration	AIMExtension: CodeLightingType		
	AIXM	**Translations**	
	TDZL	ICAO	RTZL
		FAA	TDZ LGTS
		Plain Text	Touchdown zone lights
	THR	ICAO	THR LGT
		FAA	THR LGTS
		Plain Text	Threshold lights
	TLOF	ICAO	LEAD OFF LGTS
		FAA	LEAD OFF LGTS
		Plain Text	Taxiway centerline lead-off lights
	LEAD_ON	ICAO	LEAD ON LGTS
		FAA	LEAD ON LGTS
		Plain Text	Taxiway centerline lead-on lights
	LAHSO	ICAO	LAHSO LGTS
		FAA	LAHSO LGTS
		Plain Text	Land and hold short operations lights
	FAROS	ICAO	FAROS LGTS
		FAA	FAROS LGTS
		Plain Text	Final approach runway occupancy signal
	RLLS	ICAO	RLLS
		FAA	RLLS
		Plain Text	Runway lead-in light system
	RWSL	ICAO	RWSL
		FAA	RWSL
		Plain Text	Runways status light
	REL	ICAO	REL
		FAA	REL
		Plain Text	Runway entrance lights
	THL	ICAO	THL
		FAA	THL
		Plain Text	Takeoff hold lights

33.2.6 Status [operationalStatus]

Description: An indication of the operational status of the lighting system.

Source: User-selected (required).

TABLE 33.6
Runway Ground Light Operational Status

Attribute	Value		
AIXM Path (UML)	GroundLightSystem (feature)/ GroundLightingAvailability (object)/ operationalStatus (attribute)		
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus		
AIXM Mapping	GroundLightingAvailability		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service
	OTHER:COMMISSIONED	ICAO	COMMISSIONED
		FAA	CMSN
		Plain Text	Commissioned
	OTHER:DECOMMISSIONED	ICAO	DECOMMISSIONED
		FAA	DCMSN
		Plain Text	Decommissioned
	DOWNGRADED*	ICAO	For segment, see above. For the rest, see below.
		FAA	
		Plain Text	
AIXM Path (UML)	GroundLightSystem (feature)/ GroundLightingAvailability (object)/ annotation		
AIXM Element XPath	RunwayDirectionLightSystem/ timeSlice/ RunwayDirectionLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ GroundLightingAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non Standard

33.2.7 Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 33.7
Location

Attribute	Value	
AIXM Path (UML)	RunwayDirection (feature)/ annotation (object)/ note	
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus

	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>
	Full Taxiway	ICAO	AT TWY <*designator*>
		FAA	AT TWY <*designator*>
		Plain Text	at Taxiway <*designator*>
	Full Runway	ICAO	AT RWY <*designator*>
		FAA	AT RWY <*designator*>
		Plain Text	At Runway <*designator*>

33.3 Q Codes

TABLE 33.8
QCodes (2nd and 3rd letter) Runway Ground Lighting Status

AIXM Code	Translations	
TDZL	Q Code (second & third)	QLZ-- (runway touchdown zone lights…)
THR	Q Code (second & third)	QLT-- (threshold lights…)
TLOF	Q Code (second & third)	QXX-- (plain language…)
LEAD_ON	Q Code (second & third)	QXX-- (plain language…)
LAHSO	Q Code (second & third)	QLA-- (plain language…)
FAROS	Q Code (second & third)	QLA-- (plain language…)
RLLS	Q Code (second & third)	QLA-- (plain language…)
RWSL	Q Code (second & third)	QLA-- (plain language…)
REL	Q Code (second & third)	QLA-- (plain language…)
THL	Q Code (second & third)	QXX-- (plain language…)

TABLE 33.9
QCodes (4th and 5th letter) Runway Ground Lighting Status

AIXM Code	Translations	
ALL	**Series**	**A**
UNSERVICEABLE	ICAO	OUT OF SERVICE
	FAA	OTS
	Plain Text	Out of service
	Q Code (fourth & fifth)	Q--AS (…OTS)
	Scope	A
	Traffic	IV

	Purpose	NBO
NON_STD	ICAO	NONSTD
	FAA	NONSTD
	Plain Text	Non Standard
	Q Code (fourth & fifth)	Q--XX
	Scope	A
	Traffic	IV
	Puporse	NBO
COMMISSIONED	ICAO	INSTALLED (INSTL)
	FAA	CMSN
	Plain Text	Commissioned
	Q Code (fourth & fifth)	Q--CS (…installed)
	Scope	A
	Traffic	IV
	Purpose	NBO
DECOMMISSIONED	ICAO	COMPLETELY WITHDRAWN
	FAA	DCMSN
	Plain Text	Decommissioned
	Q Code (fourth & fifth)	Q--AW (…completely withdrawn)
	Scope	A
	Traffic	IV
	Purpose	NBO

33.4 Business Rules

33.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *type* equal to null, then "Select a type of runway lighting system."

c. When *status* equal to null, then "Select a status for the light system."

d. When *status* equal to CMSND and *type* equal to EDGE, then "When commissioning a runway edge light system, select the exact type of runway edge light system (LIRL, MIRL, HIRL)."

33.4.2 Policy Business Rules (from FAA Order JO 7930.2, chapter 5, section 2)

a. Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (para 5-2-1a).

b. When commissioning runway edge light systems, indicate the exact type of system; e.g., LIRL, MIRL, HIRL, etc. Once commissioned and published, runway edge lights shall only be shown as RWY LGTS (para 5-2-2d4).

33.4.3 Data Encoding Business Rules

a. The elements of type *designator*, *type,* and either *alignmentIndicator* or *sequencedFlashing* are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

c. For entering *operationalStatus* COMMISSIONED use a Timeslice of type BASELINE and for *operationalStatus* DECOMMISSIONED use a TimeSlice of type PERMDELTA.An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

d. The associated Runway should have interpretation SNAPSHOT and contain the designator;an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

33.5 Sample AIXM Message

Sample NOTAM Message: RWY 04 TDZ OTS


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="RWYDIRLGTSYS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIRLGTSYS01_TS01_TI01">
            <gml:timePosition></gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <extension>
          <aim:RunwayDirectionLightSystemExtension>
            <aim:lightType>TDZL</aim:lightType>
          </aim: RunwayDirectionLightSystemExtension>
        </extension>
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="RWYDIRLGTSYS01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIRLGTSYS01_TS02_TP01">
            <gml:beginPosition></gml:beginPosition>
            <gml:endPosition></gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>16</sequenceNumber>
        <availability>
          <GroundLightingAvailability gml:id="GLA01">
            <operationalStatus>UNSERVICEABLE</operationalStatus>
          </GroundLightingAvailability>
        </availability>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
  </RunwayDirectionLightSystem>
```

```
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702  -74.3421 39.2704
-74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
  </notamMessage:AIXMBasicMessage>
```


33.6 Translation Templates

33.6.1 FAA

RWY *designator type operationalStatus* **WEF**

33.6.2 ICAO E Line

RWY *designator type operationalStatus* **WEF**

33.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*

Lighting System: *type*

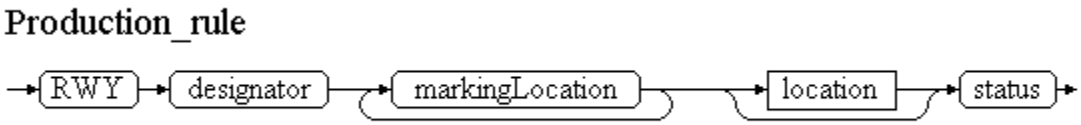
Status: *operationalStatus*

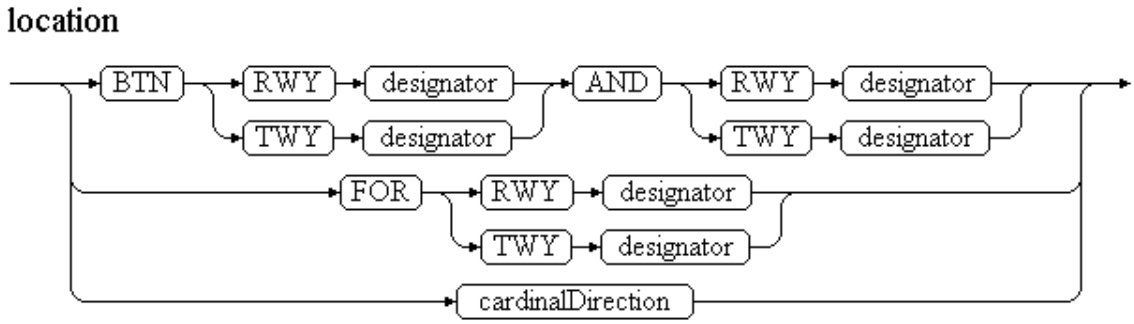
33.7 Additional Analysis

None.

34 Runway – Ground Marking Status

Specify that the runway marking has been changed.





34.1 Example NOTAMs

1. !AMA 10/011 AMA RWY 4/22 EDGELINE MARKINGS NONSTD
2. !VNY 04/008 VNY RWY 16R/34L EDGE MARKINGS OBSCD
3. !TEB 09/082 TEB RWY 1/19 MANDATORY HOLD SHORT MARKINGS ON RWY 6/24 UNMARKED

Source: US NOTAM Repository

34.2 AIXM Mapping and Translation

34.2.1 Scenario Details

TABLE 34.1

Attribute	Value
Description	Specify the status of the markings on a runway.
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Markings
Feature XPath	aixm:RunwayMarking
AIXM Mapping Diagram	Surface Markings
NOTAM lifespan	
Start ASAP	Yes

34.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 34.2
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

34.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 34.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

34.2.4 Marking Type [*markingLocation*]

Description: A code indicationg the location of the marking relative to the surface.

Source: User-selected (*markingLocation* or *type* required)

TABLE 34.4
Runway Ground Marking Location Type

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ markingLocation (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ markingLocation		
AIXM Mapping	Class: RunwayMarking		
Enumeration	CodeRunwaySectionType		
	AIXM	**Translations**	
	CL	ICAO	RWY CL
		FAA	RCLM
		Plain Text	Centerline
	EDGE	ICAO	RWY EDGE LINE
		FAA	EDGE LN
		Plain Text	Edge Line
	OTHER:RWY_INT	ICAO	RWY HOLD SHORT LINE
		FAA	HOLD SHORT LN
		Plain Text	Hold Short Line
	TDZ	ICAO	TOUCH DOWN ZONE
		FAA	TOUCH DOWN ZONE

		Plain Text	Touch Down Zone
	AFT_THR	ICAO	FIXED DISTANCE
		FAA	FIXED DISTANCE
		Plain Text	Fixed Distance
	THR	ICAO	THRESHOLD
		FAA	THRESHOLD
		Plain Text	Threshold
	OTHER:LEAD_ON	ICAO	LEAD ON LINE
		FAA	LEAD ON LINE
		Plain Text	Lead on line
	OTHER:LEAD_OFF	ICAO	LEAD OFF LINE
		FAA	LEAD OFF LINE
		Plain Text	Lead off line
	OTHER:LAHSO	ICAO	LAHSO
		FAA	LAHSO
		Plain Text	Land and hold short operations
	OTHER:ALL	ICAO	ALL
		FAA	ALL
		Plain Text	All

34.2.5 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional)

TABLE 34.5
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ Marking (extension) cardinalDirection (attribute)		
AIXM Element X Path	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ extension/ cardinalDirection		
AIXM Mapping	Class: AIM Extension Marking		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE

		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

Note: Objects highlighted in blue currently do not have a representation in AIXM 5.1.

34.2.6 Status [*status*]

Description: The operational status of the surface markings.

Source: User-selected (required).

TABLE 34.6
Ground Lighting Operatonal Status

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ Marking (extension)/ status (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ extension/ status		
AIXM Mapping	Class: AIM Extension Marking		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	OBSC	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Markings Obscured
	PART_OBSC	ICAO	PARTIALLY OBSCURED
		FAA	PARTIALLY OBSC
		Plain Text	Partially Obscured
	FADED	ICAO	FADED
		FAA	FADED
		Plain Text	Faded

Note: Objects highlighted in blue currently do not have a representation in AIXM 5.1.

34.2.7 Marking Type [*runwayMarkingType*]

Description: Type of marking related to landing categories such as precision, non-precision and basic.

Source: User-selected (required).

TABLE 34.7
Runway Ground Marking Type

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ RunwayMarking (extension)/ runwayMarkingType (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ element/ extension/ runwayMarkingType		
AIXM Mapping	Class: AIM Extension Marking		
Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	NON_STANDARD	ICAO	NONSTD MARKINGS
		FAA	NONSTD MARKINGS
		Plain Text	Non-Standard Markings
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	Unmarked
	PRECISION	ICAO	PRECISION MARKINGS

		FAA	PRECISION MARKINGS
		Plain Text	Precision Markings
	NONPRECISION	ICAO	NONPRECISION MARKINGS
		FAA	NONPRECISION MARKINGS
		Plain Text	Non-Precision Markings

34.2.8 Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 34.8
Location

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ annotation (object)/ note		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>
	Full Taxiway	ICAO	AT TWY <*designator*>
		FAA	AT TWY <*designator*>
		Plain Text	at Taxiway <*designator*>
	Full Runway	ICAO	AT RWY <*designator*>
		FAA	AT RWY <*designator*>
		Plain Text	At Runway <*designator*>

34.3 Q Codes

TABLE 34.9
QCodes for Ground Marking Status

AIXM Code	Q Code	
ALL	Series	A
	Q Code	QMMXX
	Scope	A
	Traffic	IV
	Purpose	MNBO

34.4 Business Rules

34.4.1 Template Business Rules

a. If *designator* equal to null then "Select a designator."

b. When *type* equals null then "Select a Marking Type."

c. One of the element type, *markingLocation* is required. Multiple are allowed.

d. Location is optional, but the user must not enter more than one of the following: *atTaxiway, atRunway,* or *cardinalDirection.*

e. If *condition* or *runwayMarkingType* are null, then "Select the Marking Status."

34.4.2 Policy Business Rules

None.

34.4.3 Data Encoding Business Rules

a. For entering the *designator* and *approachMarkingType* (optional), use a TimeSlice under the feature RunwayDirection of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

c. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

d. The associated Runway should have interpretation SNAPSHOT and contain the designator or identified by UUID in a TimeSlice of type TEMPDELTA.

34.5 Sample AIXM Message

Sample NOTAM Message: RWY 04/22 HOLD SHORT LINE RWY 13/31 OBSC


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayMarking gml:id="RM01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayMarkingTimeSlice gml:id="RM01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RM01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <markingLocation>OTHER:RWY_INT</markingLocation>
        <markedRunway xlink:href="#RWY01"/>
```

```
      </RunwayMarkingTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayMarkingTimeSlice gml:id="RM01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RM01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <extension>
          <aim:RunwayMarkingExtension>
            <aim:operationalStatus>OTHER:OBSC</aim:operationalStatus>
          </aim:RunwayMarkingExtension>
        </extension>
      </RunwayMarkingTimeSlice>
    </timeSlice>
  </RunwayMarking>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
```

```
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
  </notamMessage:AIXMBasicMessage>
```


34.6 Translation Templates

34.6.1 FAA

RWY *designator* [*markingLocation*] [*location*] [*operationalStatus*] [*runwayMarkingType*]

34.6.2 ICAO E Line

RWY *designator* [*markingLocation*] [*location*] [*operationalStatus*] [*runwayMarkingType*]

34.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *afffectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway Surface Markings

Affected Runway: *designator*

Marking Type: [*markingLocation*]

Location: [*location*]
Status: [*operationalStatus*] [*runwayMarkingType*]

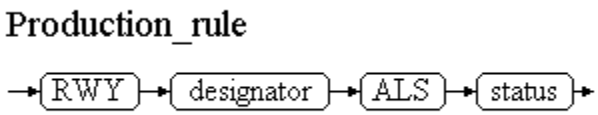
34.7 Additional Analysis

None.

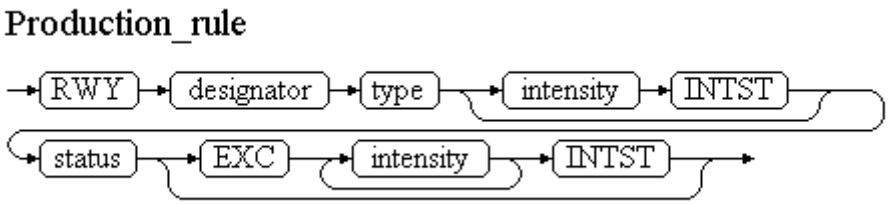
35 Runway – Approach Lighting System Status

This scenario is used to specify the status of the lighting system provided for a landing and take-off direction of a runway. NOTAMs should only be issued for lighting aids you are responsible for controlling or monitoring (FAA Order JO 7930.2, para 5-2-1a). The ALS/SFL/RAIL Lights Status maps to Runway Direction.

For ALS



For SFL/RAIL



35.1 Example NOTAMs

1. !CAE 08/059 CAE RWY 5 RAIL OTS EXC LOW INTENSITY
2. !ENW 09/015 ENW RWY 7L RAIL OTS EXC HI INTST CONT WEF 0909170059
3. !HKS 01/020 HKS RWY 16 RAIL OTS
4. !HLG 02/007 HLG RWY 3 SFL OTS
5. !ANB EUF RWY 18 ALS OTS
6. !RIC 09/048 RIC RWY 34 ALS UNMNT

Source: US NOTAM Repository, FAA JO 7930.2

35.2 AIXM Mapping and Translation

35.2.1 Scenario Details

TABLE 35.1

Attribute	Value
Description	Specify status of sequence flashing lights
Maps to Keyword:	Runway Direction
Feature Type Id	AirportHeliport/ Lighting/ Pilot Controlled Lighting/ ApproachLightingSystem
Feature Xpath	aixm:ApproachLightingSystem
AIXM Mapping	RunwayDirection
NOTAM lifespan	
Start ASAP	Yes

35.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 35.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

35.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 35.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

35.2.4 Type [*type*]

Description: The type of approach lighting system (ALS, SFL, RAIL).

Source: User-selected (required).

TABLE 35.4
Runway Approach Lighting Type

Attribute	Value		
AIXM Path (UML)	ApproachLightingSystem (feature)/ type (attribute)		
AIXM Element XPath	ApproachLightingSystem/ timeSlice/ ApproachLightingSystemTimeSlice [interpretation:SNAPSHOT]/ type		
AIXM Mapping	Class: ApproachLightingSystem		
Enumeration	CodeApproachLightingType		
	AIXM	**Translations**	
	OTHER:ALS	ICAO	ALS
		FAA	ALS
		Plain Text	Approach Lighting System
	OTHER:SFL	ICAO	SEQUENCED FLG LGT
		FAA	SFL

		Plain Text	Sequence Flashing Lights
	OTHER:RAIL	ICAO	RAI LGT
		FAA	RAIL
		Plain Text	Runway Alignment Indicator Lights (RAIL)

35.2.5 SFL [*sequencedFlashing*]

Description: A code indicating whether sequenced flashing is available.

Source: From baseline data (required).

TABLE 35.5
Sequenced Flashing Lights

Attribute	Value		
AIXM Path (UML)	ApproachLightingSystem (feature)/ type (attribute)		
AIXM Element XPath	ApproachLightingSystem/ timeSlice/ ApproachLightingSystemTimeSlice [interpretation:SNAPSHOT]/ sequencedFlashing		
AIXM Mapping	Class: ApproachLightingSystem		
Enumeration	CodeYesNoType		
	YES	ICAO	…
		FAA	…
		Plain Text	…

35.2.6 RAIL [*alignmentIndicator*]

Description: A code indicating whther a runway alignment indicator is available for the approach lighting system.

Source: From baseline data (required).

TABLE 35.6
Alignment Indicator Lights

Attribute	Value		
AIXM Path (UML)	ApproachLightingSystem (feature)/ type (attribute)		
AIXM Element XPath	ApproachLightingSystem/ timeSlice/ ApproachLightingSystemTimeSlice [interpretation:SNAPSHOT]/ alignmentIndicator		
AIXM Mapping	Class: ApproachLightingSystem		
Enumeration	CodeYesNoType		
	YES	ICAO	…
		FAA	…
		Plain Text	…

35.2.7 Intensity [intensity]

Description: The intensity of the light.

Source: User-selected (optional).

TABLE 35.7
Light Intensity

Attribute	Value
AIXM Path (UML)	GroundLightSystem (feature)/ intensity (attribute)
AIXM Element XPath	ApproachLightingSystem/ timeSlice/ ApproachLightingSystemTimeSlice [interpretation:TEMPDELTA]/ intensity

AIXM Mapping	Class: ApproachLightingSystem		
Enumeration	CodeLightIntensityType		
	AIXM	**Translations**	
	LIL	ICAO	LOW
		FAA	LOW
		Plain Text	Low
	LIM	ICAO	MEDIUM
		FAA	MED
		Plain Text	Medium
	LIH	ICAO	HIGH
		FAA	HIGH
		Plain Text	High

35.2.8 Status [operationalStatus]

Description: An indication of the operational status of the SFL/RAIL.

Source: User-selected (required).

TABLE 35.8
Approach Lighting Operational Status

Attribute	Value		
AIXM Path (UML)	GroundLightSystem (feature)/ GroundLightingAvailability (object) operationalStatus (attribute)		
AIXM Element XPath	ApproachLightingSystem/ timeSlice/ ApproachLightingSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus		
AIXM Mapping	Class: GroundLightingAvailability		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service
	OTHER:UNMONITORED	ICAO	UNMONITORED
		FAA	UNMNT
		Plain Text	unmonitored
	OTHER:COMMISSIONED	ICAO	INSTALLED (INSTL)
		FAA	CMSN
		Plain Text	Commissioned
	OTHER:DECOMMISSIONED	ICAO	COMPLETELY WITHDRAWN
		FAA	DCMSN
		Plain Text	Decommissioned

35.3 Q Codes

TABLE 35.9
QCodes for ALS

AIXM Code ALS	Q Code	
UNSERVICEABLE	**Series**	**A**
	Q Code	QLAXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:UNMONITORED	**Series**	**A**
	Q Code	QLAXX
	Scope	A
	Traffic	IV

	Purpose	NBO

TABLE 35.10
QCodes for SFL

AIXM Code SFL	Q Code	
ALL	**Series**	**A**
UNSERVICEABLE	Q Code	QLFXX (SLF OTS)
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:UNMONITORED	Q Code	QLFXX (SLF OTS)
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:COMMISSIONED	Q Code	QLFCS (SFL installed)
	Scope	A
	Traffic	IV
	Purpose	NBO
OTHER:DECOMMISSIONED	Q Code	QLFAW (SFL completely withdrawn)
	Scope	A
	Traffic	IV
	Purpose	NBO

TABLE 35.11
QCodes for RAIL

AIXM Code RAIL	Q Code	
ALL	**Series**	**A**
UNSERVICEABLE	Q Code	QLJXX (RAIL OTS)
	Scope	A
	Traffic	IV
	Purpose	M
OTHER:UNMONITORED	Q Code	QLJXX (RAIL OTS)
	Scope	A
	Traffic	IV
	Purpose	M
OTHER:COMMISSIONED	Q Code	QLJCS (RAIL installed)
	Scope	A
	Traffic	IV
	Purpose	M
OTHER:DECOMMISSIONED	Q Code	QLJAW (RAIL completely withdrawn)
	Scope	A
	Traffic	IV
	Purpose	M

35.4 Business Rules

35.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *type* equal to null, then "Select a type of sequence flashing light."

c. When *status* equal to null, then "Select a status for the light system."

d. Each *intensity* value should only be used ONCE in the NOTAM. For example, EXC MED MED MED INTST or !ACY XX/XXX ACY RWY 04 RAIL HIGH INTST OTS EXC HIGH INTST WEF 1003082308-1003091200 should not be allowed.

e. For type = ALS, Commissioned and Decommissioned are not accepted status values.

f. For type = ALS, *intensity* is not valid field.

35.4.2 Policy Business Rules (from FAA Order JO 7930.2, paragraph 5-2-1a)

Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring.

Unless the Airport owns and maintains the equipment, the responsibility of these NOTAMs lies with the OCC.

Approach light systems (ALS) – When commissioning approach light systems, indicate the exact type of system; e.g.,MALSR, etc. Once commissioned and published, approach light systems need only be shown as ALS.

35.4.3 Data Encoding Business Rules

a. For entering *designator*, *type*, and either *alignmentIndicator* or *sequencedFlashing*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For *type* equals OTHER:SFL, then *sequencedFlashing* equals YES.

c. For *type* equals OTHER:RAIL, then *alignmentIndicator* equals YES.

d. For entering *intensityLevel* and *operationalStatus*, use a TimeSlice of type TEMPDELTA.

e. If multiple *intensityLevel*s are affected, then add each under a unique timeslice.

f. If an *intensityLevel* is listed as an exception, then the other *intensityLevel*s should be issued in the AIXM based message as UNSERVICEABLE.

g. For entering *operationalStatus* COMMISSIONED use a Timeslice of type BASELINE and for *operationalStatus* DECOMMISSIONED use a TimeSlice of type PERMDELTA.

h. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

i. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

35.5 Sample AIXM Message

Sample NOTAM Message: RWY 04 ALS OTS


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApproachLightingSystem gml:id="ALS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
```

```
      <timeSlice>
        <ApproachLightingSystemTimeSlice gml:id="ALS01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="ALS01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <type>OTHER:ALS</type>
          <servedRunwayDirection xlink:href="#RWYDIR01"/>
        </ApproachLightingSystemTimeSlice>
      </timeSlice>
      <timeSlice>
        <ApproachLightingSystemTimeSlice gml:id="ALS01_TS02">
          <gml:validTime>
          <gml:TimePeriod gml:id="ALS01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <GroundLightingAvailability gml:id="GLS02">
            <operationalStatus>UNSERVICEABLE</operationalStatus>
          </GroundLightingAvailability>
        </availability>
        </ApproachLightingSystemTimeSlice>
      </timeSlice>
    </ApproachLightingSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
```

```
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
```

```
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: RWY 04 RAIL OTS EXC HIGH INTST


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ApproachLightingSystem gml:id="ALS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ApproachLightingSystemTimeSlice gml:id="ALS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ALS01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <type>OTHER:RAIL</type>
        <alignmentIndicator>YES</alignmentIndicator>
        <servedRunwayDirection xlink:href="#RWYDIR01"/>
      </ApproachLightingSystemTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApproachLightingSystemTimeSlice gml:id="ALS01_TS02">
        <gml:validTime>
        <gml:TimePeriod gml:id="ALS01_TS02_TP01">
          <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
          <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
        </gml:TimePeriod>
      </gml:validTime>
      <interpretation>TEMPDELTA</interpretation>
      <sequenceNumber>14</sequenceNumber>
      <intensityLevel>LIL</intensityLevel>
      <availability>
        <GroundLightingAvailability gml:id="GLS02">
          <operationalStatus>UNSERVICEABLE</operationalStatus>
        </GroundLightingAvailability>
      </availability>
      </ApproachLightingSystemTimeSlice>
    </timeSlice>
    <timeSlice>
      <ApproachLightingSystemTimeSlice gml:id="ALS01_TS03">
        <gml:validTime>
        <gml:TimePeriod gml:id="ALS01_TS03_TP01">
          <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
          <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
        </gml:TimePeriod>
      </gml:validTime>
      <interpretation>TEMPDELTA</interpretation>
      <sequenceNumber>14</sequenceNumber>
      <intensityLevel>LIM</intensityLevel>
```

```
        <availability>
          <GroundLightingAvailability gml:id="GLS02">
            <operationalStatus>UNSERVICEABLE</operationalStatus>
          </GroundLightingAvailability>
        </availability>
        </ApproachLightingSystemTimeSlice>
      </timeSlice>
    </ApproachLightingSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
  <Runway gml:id="RWY01">
```

```
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


35.6 Translation Templates

35.6.1 FAA

RWY *designator type* [*intensity* **INTST**] *operationalStatus* [**EXC** *intensity1 intensity2* **INTST**] **WEF**

35.6.2 ICAO E Line

RWY *designator type* [*intensity* **INTST**] *operationalStatus* [**EXC** *intensity1 intensity2* **INTST**] **WEF**

35.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*
Lighting System: *type*
Intensity Level(s) Affected: *intensity*|**ALL**
Status: *operationalStatus*

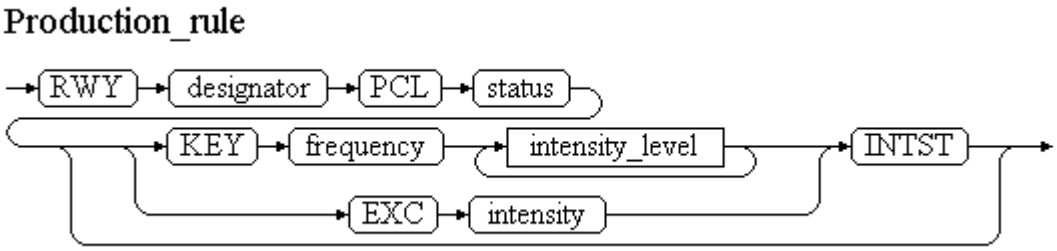
35.7 Additional Analysis

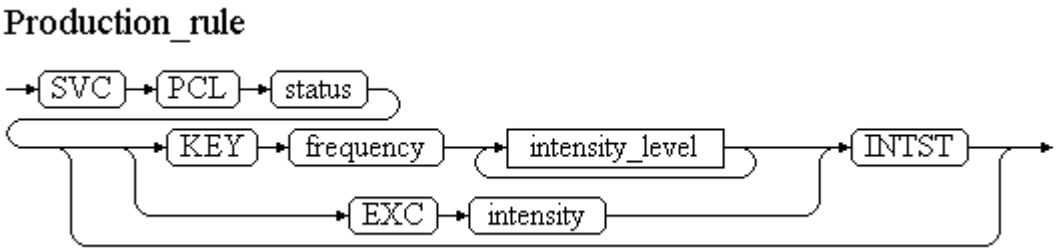
According to Susan Gardner, ALS NOTAMs are the repsonisbility of Tech Ops and not the airport.

36 Runway – Pilot Controlled Lighting (PCL) Status

Specify the status (commission, decommission, or out of service) for Pilot Controlled Lighting (PCL). The PCL Status maps to Runway and Runway Direction.

The Pilot Controlled Lighting (PCL) NOTAM scenarios can either have a keyword of "RWY" or "SVC." If the NOTAM is for one specific runway at an airport, then use the keyword "RWY" plus the designator of the specific RWY in question. If the NOTAM refers to an entire airport's runways, then use the keyword "SVC." The easiest way to deal with this situation is not clear in terms of developing the FNS entry tool. For example, should the PCL scenarios be listed under both Runways and Services? Will an airport employee know to submit a NOTAM with the keyword "SVC" if the PCL is out of service for all the runways? One potential solution is to list PCL scenarios under Runways, but allow the user to select all runways in the list. When the user selects all the runways, then the software will know to automatically change the keyword (and thus the formatting) to "SVC." This might be a situation where getting some feedback from the users of the FNS entry tool would be particularly helpful in determining what is more intuitive to them.





36.1 Example NOTAMs

1. !ANB 05/091 ASN RWY LGTS PCL CMSND KEY 122.8 7 TIMES HIGH/5 TIMES MED/3 TIMES LOW INTST
2. !ANB 08/440 8A1 RWY LGTS PCL CMSND KEY 122.8 7 TIMES HIGH/5 TIMES MED/3 TIMES LOW INTST 2300-1300 DLY
3. !ANB EUF RWY 18/36 RWY LGTS PCL OTS

[FAA Order 7930.2, para 5-2-2d9 Example #2]

4.!BDR 01/207 BDR RWY 11/29 RWY LGTS PCL OTS EXC MED INTST
[US NOTAMs Repository]

36.2 AIXM Mapping and Translation

36.2.1 Scenario Details

TABLE 36.1

Attribute	Value
Description	Specify status for PCL.
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Lighting/ Pilot Controlled Lighting
Feature Xpath	aixm:PilotControlledLighting
AIXM Mapping Diagram	Pilot Controlled Lighting Runway
NOTAM lifespan	
Start ASAP	No

36.2.2 Standard FAA [*type*]

Description: The type of pilot controlled lighting service – standard or non-standard.

Source: Baseline data (required).

TABLE 36.2
FAA Standard

Attribute	Value	
AIXM Path (UML)	PilotControlledLighting/ type	
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation SNAPSHOT]/ type	
AIXM Mapping	Class: PilotControlledLighting	
Enumeration	CodePilotControlledLightingType	
	STANDARD_FAA	

36.2.3 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 36.3
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

36.2.4 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 36.4
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

36.2.5 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 36.5
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

36.2.6 Frequency [radioFrequency]

Description: The radio frequency to be used by the pilot for the activation of the system.

Source: User-entered (optional).

TABLE 36.6
Radio/Key Frequency

Attribute	Value
AIXM Path (UML)	PilotControlledLighting/ radioFrequency
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation TEMPDELTA]/ radioFrequency
AIXM Mapping	Class: PilotControlledLighting
Datatype	ValFrequencyType
Type	Decimal
Min inclusive	0
Units of Measure	UomFrequencyType

	ICAO/FAA	MHZ

36.2.7 Clicks [*clicksLow*]

Description: The number of clicks on the microphone required for activation of the lights at low intensity.

Source: User-entered (optional).

TABLE 36.7
Clicks Low/Medium/High

Attribute	Value
AIXM Path (UML)	PilotControlledLighting/ LightActivation/ clicks
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation TEMPDELTA]/ controlledLightIntensity/ LightActivation/ clicks
AIXM Mapping	Class: LightActivation
Datatype	NoNumberType
Type	Decimal
Pattern	[0-9]{1,4}

36.2.8 Clicks [clicksMedium]

Description: The number of clicks on the microphone required for activation of the lights at medium intensity.

Source: User-entered (optional).

See TABLE 36.7 for AIXM mapping.

36.2.9 Clicks [clicksHigh]

Description: The number of clicks on the microphone required for activation of the lights at high intensity.

Source: User-entered (optional).

See TABLE 36.7 for AIXM mapping.

36.2.10 Intensity [intensityLevel]

Description: Code for indicating the relative light intensity.

Source: Correlates with user entered clicks

TABLE 36.8
Light Intensity Level Low/Medium/High

Attribute	Value		
AIXM Path (UML)	PilotControlledLighting/ LightActivation/ intensityLevel		
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation TEMPDELTA]/ controlledLightIntensity/ LightActivation/ intensityLevel		
AIXM Mapping	Class: LightActivation		
Enumeration	CodeLightIntensityType		
	AIXM	**Translations**	
	LIL- light intensity low	ICAO	LOW

		FAA	LOW
		Plain Text	Low
	LIM- light intensity medium	ICAO	MEDIUM
		FAA	MED
		Plain Text	Medium
	LIH- light intensity high	ICAO	HIGH
		FAA	HIGH
		Plain Text	High

36.2.11 Status [operationalStatus]

Description: An indication of the operational status of the system.
Source: User-selected (required).

TABLE 36.9
PCL Operational Status

Attribute	Value		
AIXM Path (UML)	PilotControlledLighting (feature)/ GroundLightSystem/ GroundLightingAvailability/ operationalStatus (attribute)		
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus		
AIXM Mapping	Class: GroundLightingAvailability		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service
	OTHER:DECOMMISSIONED	ICAO	DECOMMISIONED
		FAA	DCMSN
		Plain Text	Decommissioned
	OTHER:COMMISSIONED	ICAO	COMMISSIONED
		FAA	CMSN
		Plain Text	Commissioned

36.3 Q Codes

TABLE 36.10
QCodes for PCL Status

AIXM Code	Q Code	
ALL	**Series**	**A**
UNSERVICEABLE	Q Code	QLKAS
	Scope	A
	Traffic	IV
	Purpose	NBO
DECOMMISSIONED	Q Code	QLKAW
	Scope	A
	Traffic	IV
	Purpose	NBO
COMMISSIONED	Q Code	QLKCS
	Scope	A
	Traffic	IV
	Purpose	NBO

36.4 Business Rules

36.4.1 Template Business Rules

a. When *operationalStatus* equals null, then "Specify a status."

b. When *operationalStatus* equals "COMISSIONED" and *radioFrequency* equals null, then "Enter a frequency."

c. When *operationalStatus* equals "COMISSIONED" and *clicksHigh* equals null, then "Enter the number of clicks required for activation of high intensity lighting."

d. When *operationalStatus* equals "COMISSIONED" and *clicksMedium* equals null, then "Enter the number of clicks required for activation of medium intensity lighting."

e. When *operationalStatus* equals "COMISSIONED" and *clicksLow* equals null, then "Enter the number of clicks required for activation of low intensity lighting."

f. When *operationalStatus* equals "DECOMMISSIONED" and baseline status equal to "DECOMMISSIONED," then "System has already been DECOMMISSIONED."

g. When *operationalStatus* equals "COMMISSIONED" and baseline status equal to "COMMISSIONED," then "System has already been commissioned."

h. When *radioFrequency* less than or equal to 0, then "Specify a key that is greater then 0."

i. When *clicksHigh* less than or equal to 0, then "The number of clicks for high intensity must be greater then 0."

j. When *clicksMedium* less than or equal to 0, then "The number of clicks for medium intensity must be greater then 0."

k. When *clicksLow* less than or equal to 0, then "The number of clicks for low intensity must be greater then 0."

l. When a number for *clicksHigh* is entered and not equal to 7, then issue a warning, but allow the user to proceed.

m. When a number for *clicksMedium* is entered and not equal to 5, then issue a warning, but allow the user to proceed.

n. When a number for *clicksLow* is entered and not equal to 3, then issue a warning, but allow the user to proceed.

o. When *radioFrequency* is entered, the user should not be able to enter EXC *intensity*.

p. The field for *radioFrequency* must equal a numerical value between 100.00 and 140.00 with up to (but not required) two decimal places.

36.4.2 Policy Business Rules

a. If the NOTAM is reporting the condition for one specific runway, use the keyword "RWY," followed by the RWY designator.

b. If the NOTAM is referring to all the runways at an airport, then use the keyword "SVC."

Unless the Airport owns and maintains the equipment, the responsibility of these NOTAMs lies with the OCC.

36.4.3 Data Encoding Business Rules

a. For entering *operationalStatus* COMMISSIONED use a Timeslice of type BASELINE and for *operationalStatus* DECOMMISSIONED use a TimeSlice of type PERMDELTA.

b. The element of type *operationalStatus* equal toUNSERVICEABLE must use a TimeSlice of type TEMPDELTA.

c. For mapping to an entire runway, the PCL status should be linked to both runway directions.

d. For ALL Runways, then map the message to all RunwayDirection features for the airport.

e. An xlink:href is required, should point to the associated GroundLightingSystem, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

f. An xlink:href is required, should point to the associated RunwayDirection, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

g. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

h. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

36.5 Sample AIXM Message


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <PilotControlledLighting gml:id="PCL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <PilotControlledLightingTimeSlice gml:id="PCL01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="PCL01_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition indeterminatePosition="unknown"/>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>PERMDELTA</interpretation>
        <sequenceNumber>1</sequenceNumber>
        <type>STANDARD_FAA</type>
        <radioFrequency uom="MHZ">122.3</radioFrequency>
        <controlledLightIntensity>
          <LightActivation gml:id="HIGH">
            <clicks>7</clicks>
            <intensityLevel>LIH</intensityLevel>
          </LightActivation>
        </controlledLightIntensity>
        <controlledLightIntensity>
          <LightActivation gml:id="MEDIUM">
            <clicks>5</clicks>
```

```
            <intensityLevel>LIM</intensityLevel>
          </LightActivation>
        </controlledLightIntensity>
        <controlledLightIntensity>
          <LightActivation gml:id="LOW">
            <clicks>3</clicks>
            <intensityLevel>LIL</intensityLevel>
          </LightActivation>
        </controlledLightIntensity>
        <activatedGroundLighting xlink:href="#GLS01"/>
        <activatedGroundLighting xlink:href="#GLS02"/>
      </PilotControlledLightingTimeSlice>
    </timeSlice>
  </PilotControlledLighting>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="GLS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="GLS01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
  </RunwayDirectionLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="GLS02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="GLS02_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedRunwayDirection xlink:href="#RWYDIR02"/>
      </RunwayDirectionLightSystemTimeSlice>
    </timeSlice>
  </RunwayDirectionLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime></gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>22</designator>
        <usedRunway xlink:href="#RWY01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
```

```
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


36.6 Translation Templates

36.6.1 FAA

RWY *designator* **RWY LGTS PCL** *status* **[KEY** *radioFrequency clicksHigh* **TIMES HIGH /** *clicksMedium* **TIMES MED/** *clicksLow* **TIMES LOW INTST] [EXC** *intensity* **INTST]**

SVC PCL *status* **[KEY** *radioFrequency clicksHigh* **TIMES HIGH /** *clicksMedium* **TIMES MED/** *clicksLow* **TIMES LOW INTST] [EXC** *intensity* **INTST]**

36.6.2 ICAO E Line

RWY *designator* **RWY LGTS PCL** *status* **[KEY** *radioFrequency clicksHigh* **TIMES HIGH /** *clicksMedium* **TIMES MEDIUM/** *clicksLow* **TIMES LOW INTST] [EXC** *intensity* **INTST]**

SVC PCL *status* **[KEY** *radioFrequency clicksHigh* **TIMES HIGH /** *clicksMedium* **TIMES MED/** *clicksLow* **TIMES LOW INTST] [EXC** *intensity* **INTST]**

36.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Pilot Controlled Lighting

Affected Runway: **RWY** *designator* [ALL]

Status: *status*

Key: *radioFrequency*

Number of clicks for high intensity: *clicksHigh*

Number of clicks for medium intensity: *clicksMedium*

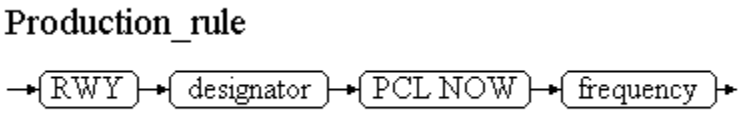
Number of clicks for low intensity: *clicksLow*

36.7 Additional Analysis

None.

37 Runway - Pilot Controlled Lighting (PCL) Frequency Change

The PCL NOTAM scenarios can either have a keyword of "RWY" or "SVC." If the NOTAM is for one specific runway at an airport, then use the keyword "RWY" plus the designator of the specific RWY in question. If the NOTAM refers to an entire airport's runways, then use the keyword "SVC." The easiest way to deal with this situation is not clear in terms of developing the FNS entry tool. For example, should the PCL scenarios be listed under both Runways and Services? Will an airport employee know to submit a NOTAM with the keyword "SVC" if the PCL is out of service for all the runways? One potential solution is to list PCL scenarios under Runways, but allow the user to select all runways in the list. When the user selects all the runways, then the software will know to automatically change the keyword (and thus the formatting) to "SVC." This might be a situation where getting some feedback from the users of the FNS entry tool would be particularly helpful in determining what is more intuitive to them.



37.1 Example NOTAMs

1. !ANB EUF RWY LGTS PCL NOW 122.8
2. !SBY SBY SVC PCL NOW 122.8
[FAA Order 7930.2, para 5-2-2d9 Example #4]

Source: US NOTAM Repository

37.2 AIXM Mapping and Translation

37.2.1 Scenario Details

TABLE 37.1

Attribute	Value
Description	Change frequency for PCL
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Lighting/ Pilot Controlled Lighting
Feature XPath	aixm:PilotControlledLighting
AIXM Mapping Diagram	Pilot Controlled Lighting Runway
NOTAM lifespan	
Start ASAP	

37.2.2 Standard FAA [*type*]

Description: The type of pilot controlled lighting service – standard or non-standard.

Source: Baseline data (required)

TABLE 37.2
FAA Standard

Attribute	Value
AIXM Path (UML)	PilotControlledLighting/ type
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation: SNAPSHOT]/ type
AIXM Mapping	Class: PilotControlledLighting
Enumeration	CodePilotControlledLightingType
	STANDARD_FAA

37.2.3 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 37.3
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

37.2.4 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 37.4
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

37.2.5 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 37.5
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

37.2.6 Frequency [radioFrequency]

Description: The radio frequency to be used by the pilot for the activation of the system.

Source: Baseline data.

TABLE 37.6
Radio/Key Frequency (Baseline)

Attribute	Value	
AIXM Path (UML)	PilotControlledLighting/ radioFrequency	
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation SNAPSHOT]/ radioFrequency	
AIXM Mapping	Class: PilotControlledLighting	
Datatype	ValFrequencyType	
Type	Decimal	
Min inclusive	0	
Units of Measure	UomFrequencyType	
	ICAO/FAA	MHZ

37.2.7 Frequency [radioFrequency]

Description: The radio frequency to be used by the pilot for the activation of the system.

Source: User-entered (required).

TABLE 37.7
Radio/Key Frequency (New Value)

Attribute	Value
AIXM Path (UML)	PilotControlledLighting/ radioFrequency
AIXM Element X Path	PilotControlledLighting/ timeSlice/ PilotControlledLightingTimeSlice [interpretation TEMPDELTA]/ radioFrequency
AIXM Mapping	Class: PilotControlledLighting
Datatype	ValFrequencyType

Type	Decimal	
Min inclusive	0	
Units of Measure	UomFrequencyType	
	ICAO/FAA	MHZ

37.3 Q Codes

TABLE 37.8
QCode for PCL Frequency Change

AIXM Code	Q Code	
PCL Frequency Change	**Series**	**A**
	Q Code	QLKXX
	Scope	A
	Traffic	IV
	Purpose	NBO

37.4 Business Rules

37.4.1 Template Business Rules

a. When *radioFrequency* equals null then "Specify a key."

b. When *radioFrequency* equals baselineValue then "Specify a key that is different from the baseline value"

c. When *radioFrequency* less than or equal to 0 then "Specify a key that is greater then 0."

d. The field for *radioFrequency* must equal a numerical value between 100.00 and 140.00, with up to (but not required) two decimal places.

37.4.2 Policy Business Rules

a. If the NOTAM is reporting the condition for one runway, use the keyword RWY, followed by the RWY designator.

b. If the NOTAM is referring to all the runways at an airport, then use the keyword SVC.

Unless the Airport owns and maintains the equipment, the responsibility of these NOTAMs lies with the OCC.

37.4.3 Data Encoding Business Rules

a. The element of type *operationalStatus* is required and must use a TimeSlice of type PERMDELTA, if the duration is 90 days or greater (EST) or a TimeSlice of type TEMPDELTA, if the duration is less than 90 days.

b. For mapping to an entire runway, the PCL status should be linked to both runway directions.

c. For ALL Runways, then map the message to all RunwayDirection features for the airport.

d. An xlink:href is required and should point to the associated GroundLightingSystem and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

e. An xlink:href is required and should point to the associated RunwayDirection and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

f. An xlink:href is required and should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

37.5 Sample AIXM Message


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <PilotControlledLighting gml:id="PCL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <PilotControlledLightingTimeSlice gml:id="PCL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="PCL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <type>STANDARD_FAA</type>
        <radioFrequency uom="MHZ">120.2</radioFrequency>
      </PilotControlledLightingTimeSlice>
    </timeSlice>
    <timeSlice>
      <PilotControlledLightingTimeSlice gml:id="PCL01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="PCL01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition indeterminatePosition="unknown"/>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>PERMDELTA</interpretation>
        <sequenceNumber>1</sequenceNumber>
        <type>STANDARD_FAA</type>
        <radioFrequency uom="MHZ">122.3</radioFrequency>
        <activatedGroundLighting xlink:href="#GLS01"/>
        <activatedGroundLighting xlink:href="#GLS02"/>
      </PilotControlledLightingTimeSlice>
    </timeSlice>
  </PilotControlledLighting>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirectionLightSystem gml:id="GLS01">
    <timeSlice>
      <RunwayDirectionLightSystemTimeSlice gml:id="GLS01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayDirectionLightSystemTimeSlice>
```

```
      </timeSlice>
    </RunwayDirectionLightSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirectionLightSystem gml:id="GLS02">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionLightSystemTimeSlice gml:id="GLS02_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunwayDirection xlink:href="#RWYDIR02"/>
        </RunwayDirectionLightSystemTimeSlice>
      </timeSlice>
    </RunwayDirectionLightSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR02">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>22</designator>
          <usedRunway xlink:href="#RWY01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
```

```
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayTimeSlice gml:id="RWY01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWY01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04/22</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="ACY_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

37.6 Translation Templates

37.6.1 FAA

RWY *designator* **RWY LGTS PCL NOW** *radiofrequency*

SVC PCL NOW *radiofrequency*

37.6.2 ICAO E Line

RWY *designator* **RWY LGTS PCL NOW** *radiofrequency*

SVC PCL NOW *radiofrequency*

37.6.3 Plain Language

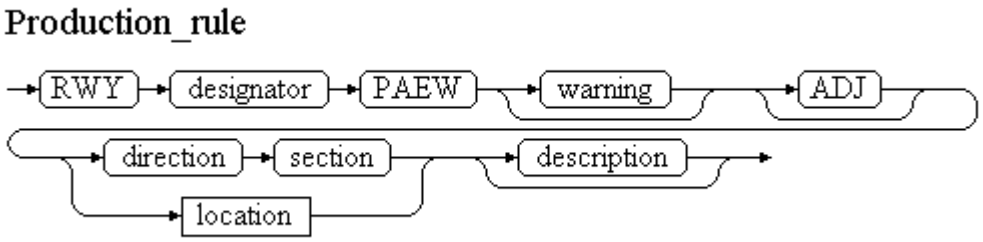
Accountable Airport: *accountableFacility*
NOTAM Number: XX/XXX
Affected Airport: *affectedFacility*
Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*
Pilot Controlled Lighting
Affected Runway: **RWY** *designator* [ALL]
New Key: *radioFrequency*

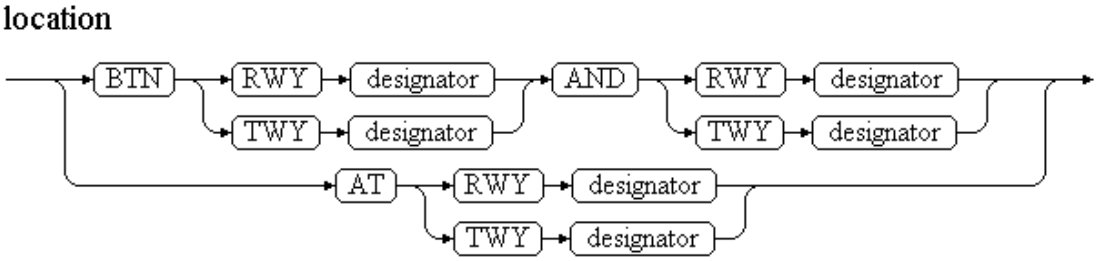
37.7 Additional Analysis

None.

38 Runway – Construction Status

Specify construction type hazards on and around a Taxiway.





38.1 Example NOTAMs

1. !DEN 11/239 DEN RWY 17L/35R MULTIPLE STEEL PLATES ADJ TWY P3 AND TWY P4
2. !DEN 11/669 DEN RWY 17L/35R MULTIPLE STEEL PLATES ON SHOULDERS BTWN TWY P4 AND TWY P8

Source: US NOTAM Repository

38.2 AIXM Mapping and Translation

38.2.1 Scenario Details

TABLE 38.1

Attribute	Value
Description	Specify a construction warning adjacent to a Runway.
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
AIXM Mapping Diagram	Runway RunwayDirection
NOTAM lifespan	
Start ASAP	No

38.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 38.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

38.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 38.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

38.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 38.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

38.2.5 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working near a runway).

Source: User-selected (required).

TABLE 38.5
Construction Warning

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warning		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	OTHER:OPEN_EXCAVATION	ICAO	OPEN EXCAVATION
		FAA	OPEN EXCAVATION
		Plain Text	Open Excavation
	OTHER:STEEL_PLATES	ICAO	STEEL PLATES
		FAA	STEEL PLATES
		Plain Text	Steel Plates
	OTHER:CONSTR_AREA	ICAO	CONSTRUCTION AREA
		FAA	CONSTR AREA
		Plain Text	Construction Area
	OTHER:UNGROOVED	ICAO	UNGROOVED
		FAA	UNGROOVED
		Plain Text	Ungrooved

38.2.6 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the Runway.

Source: User-entered (required).

TABLE 38.6
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

38.2.7 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 38.7
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

38.2.8 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection).

TABLE 38.8
Warning Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeRunwaySectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ

		Plain Text	touch down zone
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

38.2.9 Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 38.9
Additional Location Information

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

38.2.10 Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 38.10
Additional Location Information

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)

AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

38.2.11 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 38.11
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)	
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

38.3 Q Codes

TABLE 38.12
QCodes for Construction Status

AIXM Code	Q Code	
ALL AIXM Codes	**Series**	**A**
	Q Code	QMRXX
	Scope	A
	Traffic	IV
	Purpose	NBO

38.4 Business Rules

38.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *warning* equal to null, then "Select a Construction Warning."

c. When *warningAdjacent* equals null, then "Specify Adjacent."

d. The field for *warningDirection* is optional.

e. The fields for *atTaxiway* or *atRunway* are optional.

f. The fields for *warningDirection* and *warningSection*, the field for *atRunway*, or the field for *atTaxiway* should be filled out. Only one set should be entered.

38.4.2 Policy Business Rules

None.

38.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *warning*, use a TimeSlice of type TEMPDELTA.

c. For entering *warningDirection* and *warningSection* use TimeSlice of type TEMPDELTA. If warning*Direction or warningSection* are not entered by the user, then remove this from the AIXM message. The field *warningAdjacent* must be YES.

d. The elements of type *atTaxiway* or *atRunway* are optional and must use a TimeSlice of type TEMPDELTA.

e. Personnel and Equipment Working must be defined for the entire runway by indicating both Runway Directions.

f. An xlink:href is required and should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

38.5 Sample AIXM Message

Sample NOTAM Message: RWY 13/31 OPEN EXCAVATION ADJ SE SIDE 75 FT FROM CENTERLINE


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
```

```
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <annotation>
          <Note gml:id="NOTE01">
            <propertyName>warning</propertyName>
            <purpose>REMARK</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>75 FT W OF CENTERLINE</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <warning>OTHER:OPEN_EXCAVATION</warning>
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>SE</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>31</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
```

```
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA02">
            <warning> OTHER:OPEN_EXCAVATION</warning>
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>SE</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
```

```
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


38.6 Translation Templates

38.6.1 FAA

RWY *designator warning warningAdjacent* **[**warning*Direction*] **[***warningSection*] **[***atTaxiway*] **[***atRunway*] **[***note*] **WEF**

38.6.2 ICAO E Line

RWY *designator warning warningAdjacent* **[**warning*Direction*] **[***warningSection*] **[***atTaxiway*] **[***atRunway*] **[***note*] **WEF**

38.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

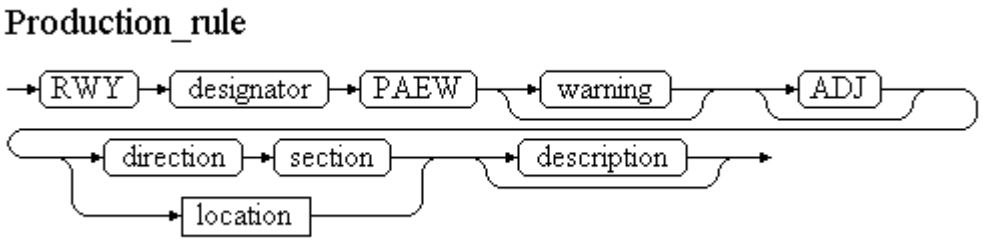
Warning: *warning*
Affected Runway: *designator*
[Location: [*warningAdjacent*] [*warningDirection*] [*warningSection*] [*atTaxiway*] [*atRunway*] [*note*]**]**

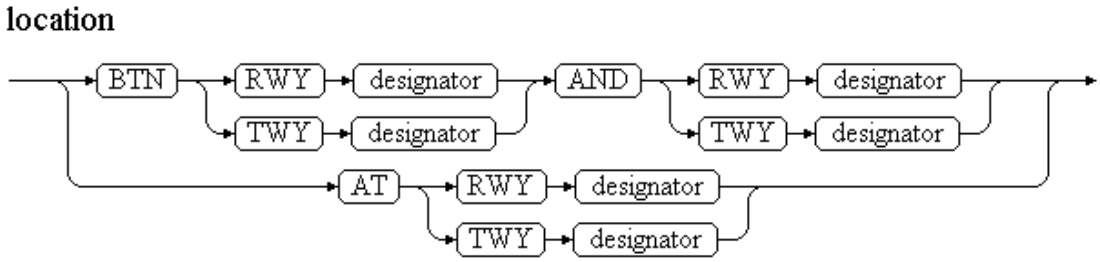
38.7 Additional Analysis

None.

39 Runway – Personnel and Equipment Working

Specify personnel warning for a runway. The Personnel and Equipment Working Warning maps to Runway Direction and Runway.





39.1 Example NOTAMs

1. !MSO 04/009 MSO RWY 7/25 PAEW WEF 0904151508-0906151500
2. !PIE 04/102 PIE RWY 17L/35R PAEW ADJ WEF 0904151130-0904151830
3. !MFV 02/005 MFV RWY 21 PAEW EAST SIDE TIL 0902170400

Source: US NOTAM Repository

39.2 AIXM Mapping and Translation

39.2.1 Scenario Details

TABLE 39.1

Attribute	Value
Description	Specify a personnel warning for one or more runways
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
AIXM Mapping Diagram	Runway RunwayDirection
NOTAM lifespan	
Start ASAP	No

39.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 39.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

39.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 39.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

39.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 39.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

39.2.5 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working near a runway).

Source: User-selected (required).

TABLE 39.5
Personnel and Equipment Working Warning

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warning		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	EQUIP	ICAO	PERSONNEL AND EQUIPMENT WORKING
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	RUBBER_REMOVAL	ICAO	RUBBER REMOVAL
		FAA	RUBBER REMOVAL
		Plain Text	rubber removal
	RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	PAVING	ICAO	SFC PAVING
		FAA	SFC PAVING
		Plain Text	surface paving
	PAINTING	ICAO	SFC PAINTING
		FAA	SFC PAINTING
		Plain Text	surface painting
	INSPECTION	ICAO	INSPECTION
		FAA	INSPECTION
		Plain Text	Inspection
	GRASS_CUTTING	ICAO	GRASS CUTTING
		FAA	GRASS CUTTING
		Plain Text	grass cutting
	CALIBRATION	ICAO	CLBR WORK
		FAA	CLBR WORK
		Plain Text	Calibration
	OTHER:CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	OTHER:SNOW_REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow removal
	OTHER:ICE_REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	OTHER:CONT_BURN	ICAO	CONTROLLED BURN/HEAVY SMOKE
		FAA	CONTROLLED BURN/HEAVY SMOKE
		Plain Text	Controlled Burn and Heavy Smoke
	OTHER:MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE
		Plain Text	Maintenance
	OTHER:HEAVY_EQUIP	ICAO	HEAVY EQUIP
		FAA	HEAVY EQUIPMENT
		Plain Text	Heavy Equipment

39.2.6 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the Runway.

Source: Assumed Yes.

TABLE 39.6
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES*	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent

**Cannot have PAEW on an open runway. (RWY CLSD) – Donna McCord*

39.2.7 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 39.7
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE

		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

39.2.8 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection).

TABLE 39.8
Warning Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeRunwaySectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ
		Plain Text	touch down zone
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

39.2.9 Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 39.9
Additional Location Information

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note
AIXM Mapping	Class: Note, LinguisticNote
Min length	1

Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

39.2.10 Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 39.10
Additional Location Information

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

39.2.11 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 39.11
Additional User-Entered Information

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note

AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

39.3 Q Codes

TABLE 39.12
QCodes for PAEW

AIXM Code	Q Code	
ALL AIXM Codes	**Series**	**A**
	Q Code	QMRHW
	Scope	A
	Traffic	IV
	Purpose	NBO

39.4 Business Rules

39.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. EQUIP is the default value for the field *warning*. If an option other than EQUIP is selected, the NOTAM should read "PAEW *warning*".

c. When *warningAdjacent* equals null, then "Specify Adjacent."

d. The field for *warningDirection* is optional.

e. The fields for *atTaxiway* or *atRunway* are optional.

f. The fields for *warningDirection* and *warningSection*, the field for *atRunway*, or the field for *atTaxiway* should be filled out. Only one set should be entered.

39.4.2 Policy Business Rules

None.

39.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *warning*, use a TimeSlice of type TEMPDELTA. If a *warning* is not selected, the default value is EQUIP.

c. For entering *warningDirection* and *warningSection* use TimeSlice of type TEMPDELTA. If warning*Direction or warningSection* are not entered by the user, then remove this from the AIXM message. The field *warningAdjacent* must be YES.

d. The elements of type *atTaxiway* or *atRunway* are optional and must use a TimeSlice of type TEMPDELTA.

e. Personnel and Equipment Working must be defined for the entire runway by indicating both Runway Directions.

f. An xlink:href is required and should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

39.5 Sample AIXM Message

Sample NOTAM Message: RWY 13/31 PAEW GRASS CUTTING ADJ SE SIDE


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <warning>GRASS_CUTTING</warning>
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>SE</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
```

```
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayDirection gml:id="RWYDIR02">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>31</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
              <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>14</sequenceNumber>
          <availability>
            <ManoeuvringAreaAvailability gml:id="MAA02">
              <warning>GRASS_CUTTING</warning>
              <extension>
              <extension>
                <aim:ManoeuvringAreaAvailabilityExtension>
                  <aim:warningAdjacent>YES</aim:warningAdjacent>
                  <aim:warningDirection>SE</aim:warningDirection>
                  <aim:warningSection>OTHER:SIDE</ aim:warningSection >
                </aim:ManoeuvringAreaAvailabilityExtension>
              </extension>
            </ManoeuvringAreaAvailability>
          </availability>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
```

```
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <RunwayTimeSlice gml:id="RWY01_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13/31</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

39.6 Translation Templates

39.6.1 FAA

RWY *designator* **PAEW [***reason***]** *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

39.6.2 ICAO E Line

RWY *designator* **PAEW [***reason***]** *warningAdjacent* **[**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

39.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Warning: PAEW *reason*

Affected Runway: *designator*

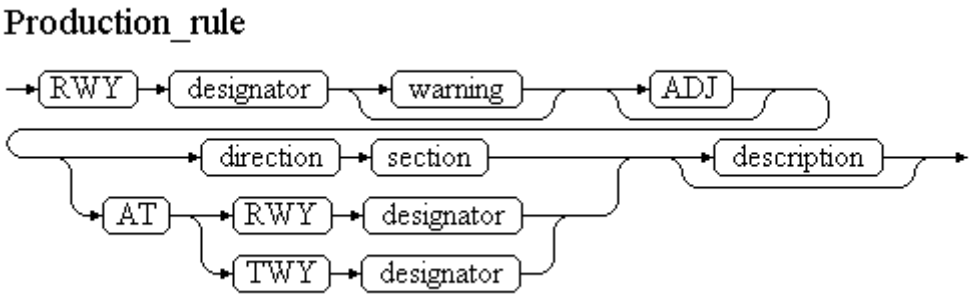
Location: *warningAdjacent* [*warningDirection*] [*warningSection*] [*atTaxiway*] [*atRunway*]

39.7 Additional Analysis

None.

40 Runway - Wildlife Hazard

Specify a wildlife hazard for a runway. The Wildlife Hazard warning maps to Runway.



40.1 Example NOTAMs

1. !LXT 08/010 LXT RWY 18/36 BIRD ACTIVITY

Source: US NOTAM Repository

40.2 AIXM Mapping and Translation

40.2.1 Scenario Details

TABLE 40.1

Attribute	Value
Description	Specify a wildlife hazard for one or more runways
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
AIXM Mapping Diagram	Runway RunwayDirection
NOTAM lifespan	
Start ASAP	Yes

40.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 40.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

40.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 40.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

40.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 40.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

40.2.5 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, animal hazard (birds, dogs, elk) on or near a runway).

Source: User-selected (required).

TABLE 40.5
Bird/Wildlife Warning

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warning		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	BIRD	ICAO	BIRD ACTIVITY
		FAA	BIRD ACTIVITY

		Plain Text	bird activity
	ANIMAL	ICAO	WILDLIFE HAZARD
		FAA	WILDLIFE HAZARD
		Plain Text	wildlife hazard

40.2.6 Description: [*note*]

Description: A specific wildlife hazard (for example, animal hazard [birds, dogs, elk] on or near an aerodrome).

Source: User-entered (optional).

TABLE 40.6
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)	
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	warning
Max length	10000	DESCRIPTION
Description	propertyName	

40.2.7 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the runway.

Source: User-selected (required).

TABLE 40.7
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

40.2.8 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 40.8
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

40.2.9 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection).

TABLE 40.9
Location Information

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeRunwaySectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ

		Plain Text	touch down zone
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

40.2.10 Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 40.10
Additional Location Information

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

40.2.11 Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 40.11
Additional Location Information

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)

AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

40.3 Q Codes

TABLE 40.12
QCodes for Bird/Wildlife Hazard

AIXM Code	**Q Code**	
ALL	**Series**	**A**
BIRD	Q Code	QMRHX (runway plain language)
	Scope	A
	Traffic	IV
	Purpose	BO
ANIMAL	Q Code	QMRXX (runway plain language)
	Scope	A
	Traffic	IV
	Purpose	BO

40.4 Business Rules

40.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *reason* equal to null, then "Select a warning reason."

c. When *warningAdjacent* equals null, then "Specify Adjacent."

d. The field for *warningDirection* is optional.

40.4.2 Policy Business Rules

None.

40.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *warning*, use a TimeSlice of type TEMPDELTA.

c. For entering warningDirection and *warningSection*, use TimeSlice of type TEMPDELTA. If warning*Direction or warningSection* is not entered by the user, then remove this from the AIXM message.

d. The elements of type *atTaxiway* or *atRunway* are optional and must use a TimeSlice of type TEMPDELTA.

e. Wildlife Hazard should not be defined for runway direction. For encoding the AIXM, define both runway directions.

f. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

40.5 Sample AIXM Message

Sample NOTAM Message: RWY 13/31 WILDLIFE HAZARD ADJ N SIDE


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <warning>ANIMAL</warning>
```

```
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>N</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR02">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR02_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>31</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA02">
            <warning>ANIMAL</warning>
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>N</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
```

```
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime></gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
```

```
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


40.6 Translation Templates

40.6.1 FAA

RWY *designator warning* **[***description***] [***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

40.6.2 ICAO E Line

RWY *designator warning* **[***description***] [***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

40.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Warning: *warning* **[***description***]**

Affected Runway: *designator*

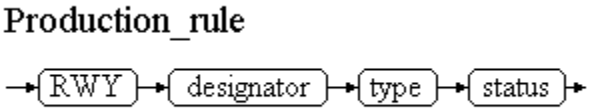
[Location: [*warningAdjacent*] [*warningDirection*] [*warningSection*] [*atTaxiway*] [*atRunway*]**]**

40.7 Additional Analysis

None.

41 Runway – Runway Visual Range Status

Specify the status of the RVR of a runway.



41.1 Example NOTAMs

1. !BWI BWI SVC RWY 10 RVRR OTS
2. !BWI BWI SVC RWY 28 RVR OTS

Source: US NOTAM Repository

41.2 Future NOTAMs

*But FUTURE:

1.AIR XX/XXX AIR RWY 04 RVR OTS

2.AIR XX/XXX AIR RWY 04 RVRR OTS

41.3 AIXM Mapping and Translation

41.3.1 Scenario Details

TABLE 41.1

Attribute	Value
Description	Specify a the status of the runway RVR
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayVisualRange
Feature XPath	aixm:RunwayVisualRange
AIXM Mapping Diagram	Runway Visual Range
NOTAM lifespan	
Start ASAP	No

41.3.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 41.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16

Enumeration	TextDesignatorType

41.3.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 41.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

41.3.4 Type [readingPosition]

Description: The type of visual range reading (touchdown, middle, etc).

Source: User-selected (required).

TABLE 41.4
RVR Reading Position

Attribute	Value		
AIXM Path (UML)	RunwayVisualRange (feature) / readingPosition (attribute)		
AIXM Element XPath	RunwayVisualRange/ timeSlice/ RunwayVisualRangeTimeSlice [interpretation:SNAPSHOT]/ readingPosition		
AIXM Mapping	Class: RunwayVisualRange		
Enumeration	CodeRVRReadingType		
	AIXM	**Translations**	
	TDZ	ICAO	RVR END
		FAA	RVRT
		Plain Text	RVR Touch Down
	MID	ICAO	RVR MID
		FAA	RVRM
		Plain Text	RVR Middle of Runway
	TO	ICAO	RVR END
		FAA	RVRR
		Plain Text	RVR Take Off/Roll Out
	OTHER:ALL	ICAO	RVR
		FAA	RVR
		Plain Text	RVR All

41.3.5 Status [operationalStatus]

Description: The status of the visual range reading equipment.

Source: Assumed when event specification is selected.

TABLE 41.5
RVR Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ RunwayVisualRange (extension)/ operationalStatus		
AIXM Element XPath	RunwayVisualRange/ timeSlice/ RunwayVisualRangeTimeSlice [interpretation:SNAPSHOT]/ extension/ operationalStatus		
AIXMMapping	Class: AIM Extension RunwayVisualRange		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	OUT OF SERVICE
		FAA	OTS
		Plain Text	Out of service

41.4 Q Codes

TABLE 41.6 QCode for RVR Status

AIXM Code	Q Code	
RVR OTS	**Series**	**A**
	Q Code	QFMXX
	Scope	A
	Traffic	IV
	Purpose	BO

41.5 Business Rules

41.5.1 Template Business Rules

a. When *designator* equal to null, then "Select a designator."

b. When *operationalStatus* equal to null, then "Select a status."

c. When *readingPosition* equal to null, then "Select a type."

41.5.2 Policy Business Rules

Unless the Airport owns and maintains the equipment, the responsibility of these NOTAMs lies with the OCC.

41.5.3 Data Encoding Business Rules

a. The element types *designator* and *readingPosition* are required and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. The element type *operationalStatus* is required and must use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required and should point to the associated RunwayDirection and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

41.6 Sample AIXM Message

Sample NOTAM: RWY 04 RVRM OTS

```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
```

```
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayVisualRange gml:id="RVR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayVisualRangeTimeSlice gml:id="RVR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RVR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <readingPosition>MID</readingPosition>
        <associatedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayVisualRangeTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayVisualRangeTimeSlice gml:id="RVR01_TS02">
      <gml:validTime>
        <gml:TimePeriod gml:id="RVR01_TS02_TP01">
          <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
          <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
        </gml:TimePeriod>
      </gml:validTime>
      <interpretation>TEMPDELTA</interpretation>
      <sequenceNumber>14</sequenceNumber>\
      <extension>
        <aim:RunwayVisualRangeExtension>
          <aim:operationalStatus>UNSERVICEABLE</aim:operationalStatus>
        </aim:RunwayVisualRangeExtension>
      </extension>
      </RunwayVisualRangeTimeSlice>
    </timeSlice>
  </RunwayVisualRange>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
```

```
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
```

```
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


41.7 Translation Templates

41.7.1 FAA

RWY *designator readingposition operationalStatus* **WEF**

41.7.2 ICAO E Line

RWY *designator readingposition operationalStatus* **WEF**

41.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway: *designator*

RVR: *readingPosition*

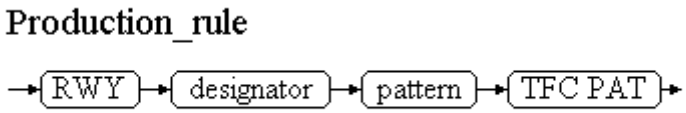
Status: *operationalStatus*

41.8 Additional Analysis

This equipment is generally the responsibility of Tech Ops. Airport Operations may not issue these NOTAMs unless the Airport owns the equipment or unless there is an LOA in place.
Denver may have a new RVR – RVR FAR END. This should only appear in the drop down for airports that do have such a system.

42 Runway – VFR Traffic Pattern

Specify a change to the VFR traffic pattern for a runway direction.



42.1 Example NOTAMs

1. !SFM 06/012 SFM RWY 7 RIGHT TFC PAT WEF 0906271230-0906271530
2. !EPH 05/005 EPH RWY 3 LEFT TFC PAT 1400-0200 DLY WEF 0905021400-0905040200

Source: US NOTAM Repository

42.2 AIXM Mapping and Translation

42.2.1 Scenario Details

TABLE 42.1

Attribute	Value
Description	Change the direction of the VFR flight pattern
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature XPath	aixm:RunwayDirection
AIXM Mapping Diagram	RunwayDirection
NOTAM lifespan	
Start ASAP	No

42.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 42.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

42.2.3 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 42.3
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

42.2.4 VFR Pattern [*patternVFR*]

Description: A code indicating the direction of the VFR flight pattern at an aerodrome/heliport, i.e., left or right.

Source: Baseline data.

TABLE 42.4
VFR Pattern

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ patternVFR (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ patternVFR		
AIXM Mapping	Class: RunwayDirection		
Enumeration	CodeDirectionTurnType		
	AIXM	**Translations**	
	LEFT	ICAO	LEFT TFC PATTERN
		FAA	LEFT TFC PAT
		Plain Text	Left traffic pattern
	RIGHT	ICAO	RIGHT TFC PATTERN
		FAA	RIGHT TFC PAT
		Plain Text	Right traffic pattern

42.2.5 VFR Pattern [*patternVFR*]

Description: A code indicating the direction of the VFR flight pattern at an aerodrome/heliport, i.e., left or right.

Source: User-confirmed (default to not baseline data, user-selected/confirmed)

TABLE 42.5
VFR Pattern

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ patternVFR (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ patternVFR		
AIXM Mapping	Class: RunwayDirection		
Enumeration	CodeDirectionTurnType		
	AIXM	**Translations**	
	LEFT	ICAO	LEFT TFC PATTERN
		FAA	LEFT TFC PAT
		Plain Text	Left traffic pattern

	RIGHT	ICAO	RIGHT TFC PATTERN
		FAA	RIGHT TFC PAT
		Plain Text	Right traffic pattern

42.3 Q Codes

TABLE 42.6
QCode for Traffic Pattern Change

AIXM Code	Q Code	
ALL	**Series**	**A**
LEFT	Q Code	QPKCH
	Scope	A
	Traffic	IV
	Purpose	BO
RIGHT	Q Code	QPKCH
	Scope	A
	Traffic	IV
	Purpose	BO

42.4 Business Rules

42.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *pattern* equal to null then, "Select a VFR pattern."

c. The user shall be allowed to change the default back to match the baseline data.

42.4.2 Policy Business Rules

None.

42.4.3 Data Encoding Business Rules

a. For entering the baseline data *patternVFR* and RunwayDirection *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering the NOTAMed *patternVFR* use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

42.5 Sample AIXM Message


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
```

```
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>04</designator>
          <patternVFR >LEFT</patternVFR>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
              <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>14</sequenceNumber>
          <patternVFR>RIGHT</patternVFR>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
  <Runway gml:id="RWY01">
```

```
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


42.6 Translation Templates

42.6.1 FAA

RWY *designator pattern* **TFC PAT WEF**

42.6.2 ICAO E Line

RWY *designator pattern* **TFC PATTERN WEF**

42.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*

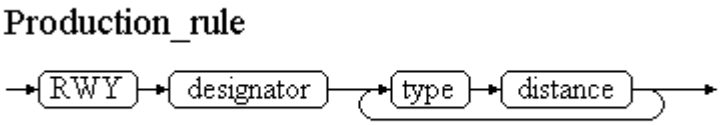
Valid To: *endDate*
Affected Runway: *designator*
Direction: *pattern*

42.7 Additional Analysis

None.

43 Runway – Distance Available

Specify the distance available for use on a runway



43.1 Example NOTAMs

1. !RWY 32 TORA 6976 TODA 6976 ASDA 6601 LDA 6601
2. !RWY 14 TORA 10067 TODA 10067 ASDA 10067 LDA 10067
3. !RWY 17L LDA 8700

Source: US NOTAM Repository

43.2 AIXM Mapping and Translation

43.2.1 Scenario Details

TABLE 43.1

Attribute	Value
Description	Specify the distance available for use on a runway
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
AIXM Mapping Diagram	RunwayDirection Runway Operational Point
NOTAM lifespan	
Start ASAP	

43.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 43.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

43.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 43.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

43.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 43.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

43.2.5 Type [*type*]

Description: A conventional operational distance declared for a runway direction.
For example, TORA, TODA, LDA, ASDA.

Source: User-entered (minimum one field required).

TABLE 43.5
Operational Declared Distance Type

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
AIXM Mapping	Class: RunwayDeclaredDistance		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	LDA	ICAO	LDA
		FAA	LDA
		Plain Text	landing distance available

	TORA	ICAO	TORA
		FAA	TORA
		Plain Text	take-off run available
	TODA	ICAO	TODA
		FAA	TODA
		Plain Text	take-off distance available
	ASDA	ICAO	ASDA
		FAA	ASDA
		Plain Text	accelerate-stop distance available

43.2.6 Distance [*distance*]

Description: The value of the declared distance.

Source: User-entered.

TABLE 43.6
Operational Declared Distance

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ RunwayDeclaredDistanceValue (object)/ distance (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ value/ RunwayDeclaredDistanceValue/ distance		
AIXM Mapping	Class: RunwayDeclaredDistanceValue		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

43.3 Q Codes

TABLE 43.7
QCodes for Declared Distance

AIXM Code	Q Code	
ALL	**Series**	**A**
LDA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TORA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TODA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
ASDA	Q Code	QMDCH
	Scope	A
	Traffic	IV

	Purpose	NBO

43.4 Business Rules

43.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* equal null, then "Specify at least one distance."

c. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* less than or equal to 0, then "Specify a distance greater then 0."

d. When *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is greater than or equal to the length of the permanent value, then "Specify a distance less then the length of the permanent value. "If no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value."

e. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* is less than 2/3 of the length of the permanent value, then "The distance available is less than 2/3 of the permanent value. Do you want to continue?" Allow the user to continue if they agree. Again, if no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value.

f. Specify only one *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) per NOTAM.

g. Only one distance (*distanceTORA*, *distanceTODA*, *distanaceASDA*, *distanceLDA*) is required, the remaining distances are optional.

h. If *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is null, do not display the text "TORA" ("TODA", "ASDA", "LDA") in the NOTAM.

43.4.2 Policy Business Rules

None.

43.4.3 Data Encoding Business Rules

a. For entering the *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering the *type* and *distance*, use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

43.5 Sample AIXM Message

Sample NOTAM Message: RWY 04 ASDA 4500 LDA 7500


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
```

```
  <RunwayCentrelinePoint gml:id="RWYCLP01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayCentrelinePointTimeSlice gml:id="RWYCLP01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYCLP01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <onRunway xlink:href="#RWYDIR01"/>
      </RunwayCentrelinePointTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayCentrelinePointTimeSlice gml:id="RWYCP01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYCP01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>17</sequenceNumber>
        <associatedDeclaredDistance>
          <RunwayDeclaredDistance gml:id="RWYDD01">
            <type>LDA</type>
            <declaredValue>
              <RunwayDeclaredDistanceValue gml:id="RWY01DDV01">
                <distance uom="FT">7500</distance>
              </RunwayDeclaredDistanceValue>
            </declaredValue>
          </RunwayDeclaredDistance>
        </associatedDeclaredDistance>
        <associatedDeclaredDistance>
          <RunwayDeclaredDistance gml:id="RWYDD02">
            <type>ASDA</type>
            <declaredValue>
              <RunwayDeclaredDistanceValue gml:id="RWY01DDV02">
                <distance uom="FT">4500</distance>
              </RunwayDeclaredDistanceValue>
            </declaredValue>
          </RunwayDeclaredDistance>
        </associatedDeclaredDistance>
      </RunwayCentrelinePointTimeSlice>
    </timeSlice>
  </RunwayCentrelinePoint>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
```

```
          <designator>04</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
```

```
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


43.6 Translation Templates

43.6.1 FAA

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

43.6.2 ICAO E Line

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

43.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Runway: *designator*

Take-off Run Avaiable: *distanceTORA*

Take-off Distance Available: *distanceTODA*

Accelerate-stop Distance Available: *distanceASDA*

Landing Distance Available: *distanceLDA*

43.7 Additional Analysis

None.

44 Runway – Threshold Displacement

Specify that a threshold has been relocated.

44.1 Example NOTAMs

1. !ALS ALS RWY 20 THR DSPLCD 600 NONSTD MARKING

Source: US NOTAM Repository

44.2 AIXM Mapping and Translation

44.2.1 Scenario Details

TABLE 44.1

Attribute	Value
Description	Specify which runway threshold has been relocated.
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
AIXM Mapping Diagram	RunwayDirection Runway Operational Point
NOTAM lifespan	
Start ASAP	No

44.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 44.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

44.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 44.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

44.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 44.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

44.2.5 Type [type]

Description: A conventional operational distance declared for a runway direction.

Source: Assumed.

TABLE 44.5
Operational Declared Distance Type

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
AIXM Mapping	Class: RunwayDeclaredDistance		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	OTHER:THRESHOLD	ICAO	
		FAA	
		Plain Text	

44.2.6 Distance [*distance*]

Description: The value of the threshold displacement.

Source: User-entered.

TABLE 44.6
Operational Declared Distance

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ RunwayDeclaredDistanceValue (object)/ distance (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ value/ RunwayDeclaredDistanceValue/ distance		
AIXM Mapping	Class: RunwayDeclaredDistanceValue		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

44.2.7 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: Baseline Data.

TABLE 44.7
Baseline Approach Marking Type

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ approachMarkingType		
AIXM Mapping	Class: RunwayDirection		
Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	PRECISION	ICAO	PRECISION
		FAA	PRECISION
		Plain Text	Precision
	NONPRECISION	ICAO	NONPRECISION
		FAA	NONPRECISION
		Plain Text	Non-Precision
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	unmarked

44.2.8 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: User-selected (optional).

TABLE 44.8
New Approach Marking Type

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ approachMarkingType		
AIXM Mapping	Class: RunwayDirection		
Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	PRECISION	ICAO	PRECISION
		FAA	PRECISION
		Plain Text	Precision
	NONPRECISION	ICAO	NONPRECISION
		FAA	NONPRECISION
		Plain Text	Non-Precision
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	unmarked

44.3 Q Codes

TABLE 44.9
QCodes for Threshold Displacement

AIXM Code	Q Code	
OTHER:THRESHOLD	**Series**	**A**
	Q Code	QMTCM
	Scope	A
	Traffic	IV
	Purpose	NBO

44.4 Business Rules

44.4.1 Template Business Rules

a. When *distance* equals null, then "Specify a distance."

b. When *distance* equals 0, then "Specify a distance greater then 0."

c. When *distance* equals the length of the runway, then "Specify a distance less then the length of the runway."

d. When *distance* is greater than 1/3 of the length of the runway, then "The displaced distance is greater than 1/3 of the runway length. Do you want to continue?" Allow the user to continue if they agree.

44.4.2 Policy Business Rules

None.

44.4.3 Data Encoding Business Rules

a. For entering the *type* and *distance*, use a TimeSlice under the feature RunwayCentrelinePoint of type TEMPDELTA or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering the *designator* and the baseline information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type SNAPSHOT.

c. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

d. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

44.5 Sample AIXM Message

Sample NOTAM Message: RWY 04 THR DSPLCD 1500 NONSTD MARKING


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayCentrelinePoint gml:id="RWYCLP01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayCentrelinePointTimeSlice gml:id="RWYCLP01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYCLP01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <onRunway xlink:href="#RWYDIR01"/>
      </RunwayCentrelinePointTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayCentrelinePointTimeSlice gml:id="RWYCP01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYCP01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>17</sequenceNumber>
        <associatedDeclaredDistance>
          <RunwayDeclaredDistance gml:id="RWYDD01">
            <type>OTHER:THRESHOLD</type>
            <declaredValue>
              <RunwayDeclaredDistanceValue gml:id="RWY01DDV01">
                <distance uom="FT">1500</distance>
              </RunwayDeclaredDistanceValue>
            </declaredValue>
          </RunwayDeclaredDistance>
        </associatedDeclaredDistance>
      </RunwayCentrelinePointTimeSlice>
    </timeSlice>
  </RunwayCentrelinePoint>
```

```
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04</designator>
        <approachMarkingType>NONPRECISION</approachMarkingType>
        <usedRunway xlink:href="#RWY01"/>
        <startingElement xlink:href="#RE01"/>
      </RunwayDirectionTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-20T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>16</sequenceNumber>
        <approachMarkingType>NON_STANDARD</approachMarkingType>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayElement gml:id="RE01">
    <timeSlice>
      <RunwayElementTimeSlice gml:id="RE01_TS01">
        <gml:validTime>
            <gml:TimeInstant gml:id="RE_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedRunway xlink:href="#RWY01"/>
          <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
          </extent>
```

```
      </RunwayElementTimeSlice>
    </timeSlice>
  </RunwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>04/22</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


44.6 Translation Templates

44.6.1 FAA

RWY *designator THR DSPLCD distance approachMarkingType*

44.6.2 ICAO E Line

RWY *designator THR DSPLCD distance approachMarkingType*

44.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Threshold Displacement

Affected Runway: *designator*

Threshold Displaced: *distance* ft

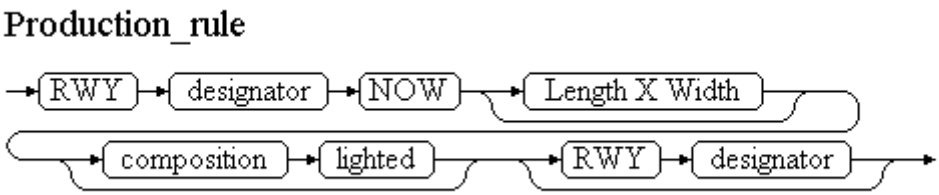
Marking: *approachMarkingType*

44.7 Additional Analysis

None.

45 Runway – Properties Change

This type of NOTAM is used to report a change in the length, width, composition, or designator of a runway.



45.1 Example NOTAMs

1. !AAA 05/006 AAA RWY 14/32 NOW 2865X135
2. !ANW 06/001 ANW RWY 12/30 NOW RWY 13/31
3. !PRC SJN RWY 2/20 NOW RWY 3/21*

Source: US NOTAM Repository

***Source:** FAA Order JO 7930.2

45.2 AIXM Mapping and Translation

45.2.1 Scenario Details

TABLE 45.1

Attribute	Value
Description	Runway Information Change
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Runway
Feature XPath	aixm:Runway
AIXM Mapping Diagram	Runway
NOTAM lifespan	
Start ASAP	No

45.2.2 Designator [*designator*] – Runway (Baseline)

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 45.2
Runway Designator (Baseline)

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

45.2.3 Designator [*designator*] – Runway (New)

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-entered (optional).

TABLE 45.3
Runway Designator (New)

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

45.2.4 Runway Length [*lengthStrip*] (Baseline)

Description: The length of the runway.

Source: Baseline Data.

TABLE 45.4
Runway Length (Baseline)

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ lengthStrip		
AIXM Mapping	Class: Runway		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

45.2.5 Runway Width [*widthStrip*] (Baseline)

Description: The width of the runway.

Source: Baseline Data.

TABLE 45.5
Runway Width (Baseline)

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ widthStrip		
AIXM Mapping	Class: Runway		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

45.2.6 Runway Length [*lengthStrip*] (New)

Description: The length of the runway.

Source: User-entered (optional)

TABLE 45.6
Runway Length (New)

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ lengthStrip		
AIXM Mapping	Class: Runway		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

45.2.7 Runway Width [*widthStrip*] (New)

Description: The width of the runway.

Source: User-entered (optional)

TABLE 45.7
Runway Width (New)

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ widthStrip		
AIXM Mapping	Class: Runway		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

45.2.8 Composition [*composition*] (Baseline)

Description: A code indicating the composition of an aerodrome/heliport related surface. For example, asphalt, concrete, etc.

Source: Baseline data.

TABLE 45.8
Surface Composition (Baseline)

Attribute	Value
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ composition (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ surfaceProperties/ SurfaceCharacteristics/ composition
AIXM Mapping	Class: SurfaceCharacteristics

Enumeration	CodeSurfaceCompositionType		
	AIXM	**Translations**	
	GRAVEL	ICAO	GRVL
		FAA	GRVL
		Plain Text	Gravel
	CONC	ICAO	CONCRETE
		FAA	CONCRETE
		Plain Text	concrete
	GRASS	ICAO	GRASS
		FAA	GRASS
		Plain Text	grass
	ASPH	ICAO	ASPHALT
		FAA	ASPHALT
		Plain Text	asphalt
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	ice
	SNOW	ICAO	SNOW
		FAA	SNOW
		Plain Text	Snow

45.2.9 Composition [*composition*] (New)

Description: A code indicating the composition of an aerodrome/heliport related surface. For example, asphalt, concrete, etc.

Source: User-selected (optional).

TABLE 45.9
Surface Composition (New)

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ composition (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ surfaceProperties/ SurfaceCharacteristics/ composition		
AIXM Mapping	Class: SurfaceCharacteristics		
Enumeration	CodeSurfaceCompositionType		
	AIXM	**Translations**	
	GRAVEL	ICAO	GRVL
		FAA	GRVL
		Plain Text	Gravel
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	SNOW	ICAO	SNOW
		FAA	SNOW
		Plain Text	Snow
	CONC	ICAO	CONCRETE
		FAA	CONCRETE
		Plain Text	concrete
	GRASS	ICAO	GRASS
		FAA	GRASS

		Plain Text	grass
	ASPH	ICAO	ASPHALT
		FAA	ASPHALT
		Plain Text	asphalt
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	ice

45.2.10 Lighting status [*lighted*] (Baseline)

Description: A code indicating whether the runway is lighted or unlighted (if known).

Source: Baseline Data.

TABLE 45.10
Runway Lighted (Baseline)

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Runway Extension/ lighted (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ extension/ lighted		
AIXM Mapping	Class: AIM Extension Runway		
Enumeration	AIM Extension: CodeLightedType		
	AIXM	**Translations**	
	LIGHTED	ICAO	LGTD
		FAA	LGTD
		Plain Text	lighted
	UNLIGHTED	ICAO	UNLGTD
		FAA	UNLGTD
		Plain Text	unlighted
	UNKNOWN	ICAO	…
		FAA	…
		Plain Text	…

45.2.11 Lighting status [*lighted*]

Description: A code indicating whether the runway is lighted or unlighted (if known).

Source: User-selected (optional).

TABLE 45.11
Runway Lighted (New)

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Runway Extension/ lighted (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ extension/ lighted		
AIXM Mapping	Class: AIM Extension Runway		
Enumeration	AIM Extension: CodeLightedType		
	AIXM	**Translations**	
	LIGHTED	ICAO	LGTD
		FAA	LGTD
		Plain Text	lighted
	UNLIGHTED	ICAO	UNLGTD
		FAA	UNLGTD
		Plain Text	unlighted
	UNKNOWN	ICAO	…
		FAA	…

		Plain Text	…

45.3 Q Codes

TABLE 45.12
QCodes Property Change

AIXM Code	Q Code	
ALL	**Series**	**A**
LENGTH X WIDTH	Q Code	QMRLL
	Scope	A
	Traffic	IV
	Purpose	NBO
COMPOSITION	Q Code	QMRXX
	Scope	A
	Traffic	IV
	Purpose	NBO
LIGHTED	Q Code	QMRCL
	Scope	A
	Traffic	IV
	Purpose	NBO

45.4 Business Rules

45.4.1 Template Business Rules

a. When *length* equal to null, *width* equal to null,*composition* equal to null, *lighted* equal to null, and *designatorNew* equal to null, then "Specify at least one item."

b. When *length* not equal to null and *length* equal to 0, then "Specify a length greater than 0."

c. When *width* not equal to null and *width* equal to 0, then "Specify a width greater than 0."

d. When *length* not equal to null and *length* contains "(\.)", then "Specify a length as a whole number."

e. When *width* not equal to null and *width* contains "(\.)", then "Specify a width as a whole number."

f. When *width* not equal to null and *length* equal to null, then "Specify a length."

g. When *length* not equal to null and *width* equal to null, then "Specify a width."

h. User must enter a full runway (both sides).

i. Translate length and width of runway to metric units (meters) for ICAO.

j. At a minimum, one full field must be entered to submit the NOTAM.

45.4.2 Policy Business Rules

New composition must designate lighting if known (FAA Order JO 7930.2). If *composition* is not equal to null and *lighted* is equal to null then "Specify if runway is lighted."

45.4.3 Data Encoding Business Rules

a. For entering the Baseline Data, use a TimeSlice under the feature Runway of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering the new information, use a TimeSlice under the feature Runway of type TEMPDELTA.

c. If the NOTAM end time is equal to 90 days or more (EST), use interpretation = PERMDELTA (instead of TEMPDELTA).

d. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

45.5 Sample AIXM Message

Sample NOTAM Message: RWY 04/22 NOW SNOW


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
<Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
          <gml:TimeInstant gml:id="RWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>04/22</designator>
        <surfaceProperties>
          <SurfaceCharacteristics gml:id="SC01">
            <composition>WATER</composition>
          </SurfaceCharacteristics>
        </surfaceProperties>
        <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS02">
      <gml:validTime>
        <gml:TimePeriod gml:id="RWY01_TS02_TP01">
          <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
          <gml:endPosition>2010-07-07T09:00:00</gml:endPosition>
        </gml:TimePeriod>
      </gml:validTime>
      <interpretation>PERMDELTA</interpretation>
      <sequenceNumber>15</sequenceNumber>
      <designator>05/21</designator>
      <surfaceProperties>
        <SurfaceCharacteristics gml:id="SC02">
          <composition>SNOW</composition>
        </SurfaceCharacteristics>
      </surfaceProperties>
    </RunwayTimeSlice>
```

```
  </timeSlice>
</Runway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


45.6 Translation Templates

45.6.1 FAA

RWY *designator* **NOW** *length* **X** *width composition* **/** *lighted* **RWY** *designatorNew*

45.6.2 ICAO E Line

RWY *designator* **NOW** *length* **X** *width composition* **/** *lighted* **RWY** *designatorNew*

45.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Information Change

Affected Runway: **RWY** *designator*

Length: *length*

Width: *width*

Composition: *composition*

Lighted: *lighted*

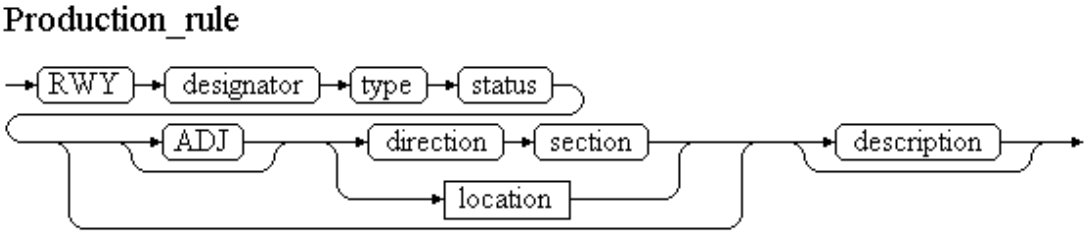
New Designator: **RWY** *designatorNew*

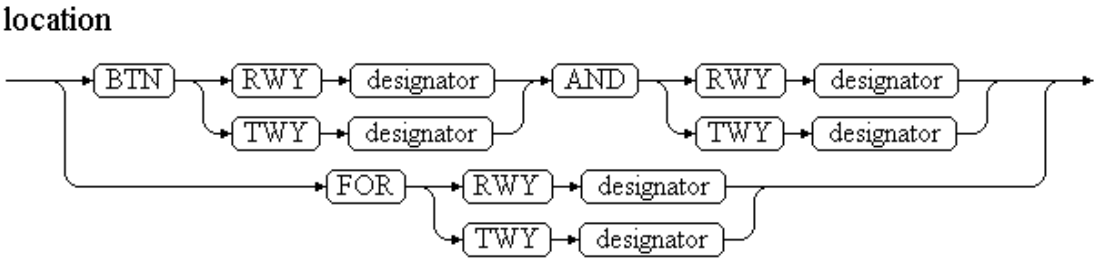
45.7 Additional Analysis

None.

46 Runway – Safety Area Status

Specify the status of a Runway Safety Area.





46.1 Example NOTAMs

1. !FLL 04/035 FLL RWY 9L/27R SAFTY AREA FLOODED
2. !UUU 08/007 UUU RWY 4 NONSTD SAFETY AREA
3. !AFN 07/002 AFN RWY 16/34 SAFETY AREA 5 FT FENCE 75 FT EITHER SIDE OF CENTERLINE
4. !DFW 08/036 DFW RWY 13R/31L SAFETY AREA REDUCED TO 400 FT

Source: US NOTAM Repository

46.2 AIXM Mapping and Translation

46.2.1 Scenario Details

TABLE 46.1

Attribute	Value
Description	Specifies the status of the runway safety area.
Maps to Keyword	RWY
Feature Type Id	AirportHeliport/ Runway
Feature Xpath	aixm:RunwayProtectArea
AIXM Mapping Diagram	Runway RunwayProtection
NOTAM lifespan	
Start ASAP	No

46.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 46.2
Runway Direction Designator

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: RunwayDirection
Min length	1
Max length	16
Enumeration	TextDesignatorType

46.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 46.3
Runway Designator

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
AIXM Mapping	Class: Runway
Min length	1
Max length	16
Enumeration	TextDesignatorType

46.2.4 Runway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 46.4
Runway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	RunwayElement/ timeSlice/ RunwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

46.2.5 Type [*type*]

Description: A code indicating the type of protection area.

Source: Assumed when user selects scenario.

TABLE 46.5
Runway Protection Type

Attribute	Value		
AIXM Path (UML)	RunwayProectArea (feature)/ type (attribute)		
AIXM Element Xpath	RunwayProtectArea/ timeSlice/ RunwayProtectAreaTimeSlice [interpretation TEMPDELTA]/ type		
AIXM Mapping	Class: RunwayProtectArea		
Enumeration	CodeRunwayProtectionAreaType		
	AIXM	**Translations**	
	OTHER:SAFETYAREA	ICAO	SAFETY AREA
		FAA	SAFETY AREA
		Plain Text	Safety Area

46.2.6 Status [status]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Helipad Closure event specification is selected. Selected by Data-Encoding Business Rules.

TABLE 46.6
Runway Protection Area Status

Attribute	Value		
AIXM Path (UML)	RunwayProectArea (feature)/ status (attribute)		
AIXM Element Xpath	RunwayProtectArea/ timeSlice/ RunwayProtectAreaTimeSlice [interpretation TEMPDELTA]/ status		
AIXM Mapping	Class: RunwayProtectArea		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	WORK_IN_PROGRESS	ICAO	MEN AND EQUIPMENT
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	DOWNGRADED (See Annotation Options)	ICAO	See Below
		FAA	
		Plain Text	
	OTHER:User Entered Free Text	ICAO	See Below
		FAA	
		Plain Text	
DOWNGRADED*/OTHER	RunwayProectArea (feature)/ annotation/ note (attribute)		
	RunwayProtectArea/ timeSlice/ RunwayProtectAreaTimeSlice [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	status	
	purpose	REMARK	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD

		Plain Text	Non-Standard
	REDUCED	ICAO	REDUCED
		FAA	REDUCED
		Plain Text	Reduced
	RUTS	ICAO	RUTS
		FAA	RUTS
		Plain Text	RUTS
	OTHER	ICAO	User-entered free text

46.2.7 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the runway.

Source: Assumed, because the safety area is adjacent to the Runway.

TABLE 46.7
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningAdjacent		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES* (but not required to enter, default should be -Select Value-)	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent

46.2.8 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 46.8
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE

		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

46.2.9 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection).

TABLE 46.9
Warning Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ extension/ aim:warningSection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeRunwaySectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ
		Plain Text	touch down zone
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

46.2.10 Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 46.10
Additional Location Information

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY *<designator>*
		FAA	FOR RWY *<designator>*
		Plain Text	For Runway *<designator>*
	Runway End	ICAO	FOR APCH END RWY *<designator>*
		FAA	FOR APCH END RWY *<designator>*
		Plain Text	For Approach End Runway *<designator>*

46.2.11 Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 46.11
Additional Location Information

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY *<designator>*
		FAA	FOR TWY *<designator>*
		Plain Text	For Taxiway *<designator>*

46.2.12 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 46.12
Additional User-Entered Information

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)	
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION
Enumeration	TextNoteType	

46.3 Q Codes

TABLE 46.13
QCode for Runway Safety Area

AIXM Code	Q Code	
Closed	Series	A
	Q Code	QXXXX
	Scope	A
	Traffic	IV
	Purpose	NBO

46.4 Business Rules

46.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."

b. If *status* equals null then "Select a status."

46.4.2 Policy Business Rules

None.

46.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *status* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required and should point to the associated RunwayDirection and Runwayand must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

46.5 Sample AIXM Message

Sample NOTAM Message: RWY 13/31 SAFETY AREA REDUCED 400 FT


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <RunwayProtectArea gml:id="RPA01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayProtectAreaTimeSlice gml:id="RPA01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RPA01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <type>OTHER:SAFETY</type>
      </RunwayProtectAreaTimeSlice>
    </timeSlice>
    <timeSlice>
      <RunwayProtectAreaTimeSlice gml:id="RPA01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="RPA01_TS02_TP01">
            <gml:beginPosition>2010-04ht6-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>4</sequenceNumber>
        <annotation>
          <Note gml:id="NOTE01">
            <propertyName>status</propertyName>
            <purpose>REMARK</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>REDUCED 400 FT</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
        <status>DOWNGRADED</status>
        <protectedRunwayDirection xlink:href="#RWYDIR01"/>
      </RunwayProtectAreaTimeSlice>
    </timeSlice>
  </RunwayProtectArea>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <RunwayDirection gml:id="RWYDIR01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
        <gml:validTime>
```

```
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13</designator>
          <usedRunway xlink:href="#RWY01"/>
          <startingElement xlink:href="#RE01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <RunwayElement gml:id="RE01">
      <timeSlice>
        <RunwayElementTimeSlice gml:id="RE01_TS01">
          <gml:validTime>
              <gml:TimeInstant gml:id="RE_TI01">
                <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <associatedRunway xlink:href="#RWY01"/>
            <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
            </extent>
        </RunwayElementTimeSlice>
      </timeSlice>
    </RunwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Runway gml:id="RWY01">
      <timeSlice>
        <RunwayTimeSlice gml:id="RWY01_TS01">
          <gml:validTime></gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>13/31</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </RunwayTimeSlice>
      </timeSlice>
    </Runway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
```

```
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


46.6 Translation Templates

46.6.1 FAA

RWY *designator* **SAFETY AREA** *status* **[**note**] WEF**

46.6.2 ICAO E Line

RWY *designator* **SAFETY AREA** *status* **[**note**] WEF**

46.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway *designator*

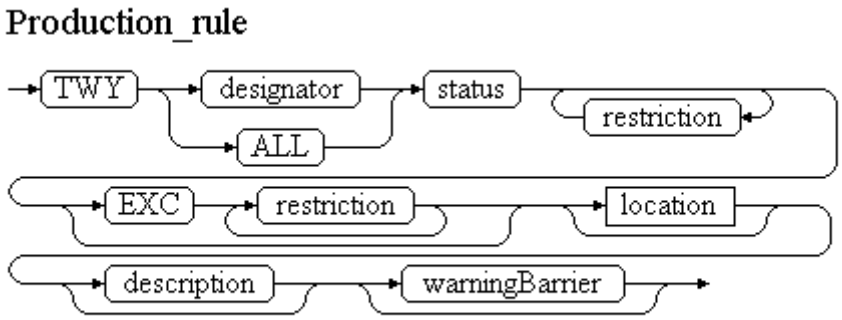
Warning: SAFETY AREA *status* **[**note**]**

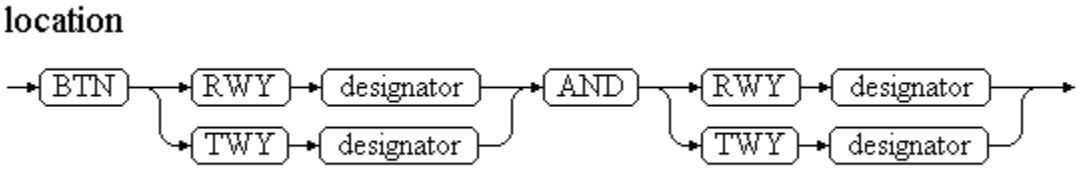
46.7 Additional Analysis

SME review indicates that we need to provide optional directionality. Indicating Adjacent, however, does not make sense.

47 Taxiway– Closure

Specify the status of a taxiway element (not a full taxiway).





47.1 Example NOTAMs

1. !IAD 10/004 IAD TWY Q CLSD BTN TWY Q2 AND TWY Z WEF 0810020330-0810021030
2. !PSM 10/051 PSM TWY A BTN TWY K, N CLSD NIGHT WEF 0910210155
3. !DFW DFW TWY P CLSD BTN TWY EL AND TWY B*

Source: US NOTAM Repository

*Example from: FAA Order JO 7930.2

47.2 AIXM Mapping and Translation

47.2.1 Scenario Details

TABLE 47.1

Attribute	Value
Description	Specify a the status of a taxiway element
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway/ TaxiwayElement
Feature XPath	aixm:Taxiway aixm:TaxiwayElement
AIXM Mapping Diagram	Taxiway TaxiwayElement
NOTAM lifespan	
Start ASAP	No

47.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 47.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

47.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 47.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

47.2.4 Status [operationalStatus]

Description: A unitary restriction or permission concerning the availability of a TaxiwayElement for aircraft types during specific hours.

Source: Assumed when Taxiway Closure event specification is selected. Selected by Data Encoding Business Rules.

TABLE 47.4
Taxiway Operational Status

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus
AIXM Mapping	Class: ManoeuvringAreaAvailability

Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	LIMITED
		FAA	CLSD
		Plain Text	Closed

47.2.5 Aircraft Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (by selecting an item from template as either as a restriction or exclusion).

TABLE 47.5
Designation of Restriction/Exception

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ ManoeuvringAreaUsage (object)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage		
AIXM Mapping	Class: ManoeuvringAreaUsage		
Enumeration	CodeUsageLimitationType		
	AIXM	**Translations**	
	PERMIT	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

47.2.6 Aircraft Restriction [type]

Description: Aircraft type restrictions.
Source: User-selected (optional).

TABLE 47.6
Aircraft Type Restrictions/Exceptions

Attribute	Value
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ AircraftCharacteristic/ type
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type
AIXM Mapping	Class: AircraftCharacteristic

Enumeration	CodeAircraftType		
	AIXM	**Translations**	
	HELICOPTER	ICAO	HEL
		FAA	HEL
		Plain Text	helicopter
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	seaplane
	GLIDER	ICAO	GLD
		FAA	GLDR
		Plain Text	glider
	OTHER:SKIPLANES	ICAO	SKI PLANE
		FAA	SKI
		Plain Text	ski plane
	OTHER:ROTARYWING	ICAO	ROTARY WING
		FAA	ROTARY WING
		Plain Text	ROTARY wing
	OTHER:FIXEDWING	ICAO	FIXED WING
		FAA	FIXED WING
		Plain Text	fixed wing
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	charters
	OTHER:AIRCARRIERS	ICAO	AIR CARRIERS
		FAA	AIR CARRIERS
		Plain Text	air carriers
	OTHER:EXPERIMENTAL	ICAO	EXPERIMENTAL
		FAA	EXPERIMENTAL
		Plain Text	experimental

47.2.7 Aircraft Restriction [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 47.7
Military Flight Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ FlightCharacteristic/ military		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV

		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation
	OTHER:ANG_ALERTACFT	ICAO	AIR NATIONAL GUARD ALERT ACFT
		FAA	ANG ALERT ACFT
		Plain Text	ANG Alert Aircraft
	OTHER:USCG_ACFT	ICAO	US COAST GUARD ACFT
		FAA	USCG ACFT
		Plain Text	U.S. Coast Guard Aircraft

47.2.8 Aircraft Restriction [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 47.8
Flight Status Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ FlightCharacteristic/ status		
AIXM Element Xpath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
AIXM Mapping	Class: FlightCharacteristic		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight
	SAR	ICAO	SEARCH AND RESCUE
		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA
		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

47.2.9 Aircraft Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft.

Source: User-entered (optional).

TABLE 47.9
Aircraft Wingspan Restrictions/Exceptions

Attribute	Value		
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ AircraftCharacteristic/ wingspan		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
AIXM Mapping	Class: AircraftCharacteristic		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [*wingspan*]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ AircraftCharacteristic/ wingspanInterpretation		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*>
		FAA	GTR THAN <*value*>
		Plain Text	Greater than <*value*>
	BELOW (*type* = PERMIT)	ICAO	LESS THAN <*value*>
		FAA	LESS THAN <*value*>
		Plain Text	Less than <*value*>

47.2.10 Aircraft Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft.

Source: User-entered (optional).

TABLE 47.10
Aircraft Weight Restrictions/Exceptions

Attribute	Value
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ AircraftCharacteristic/ weight
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight
AIXM Mapping	Class: AircraftCharacteristic
Datatype	ValDistanceType
Min inclusive	0

Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [*weight*]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	TaxiwayElement/ ManoeuvringAreaAvailability/ ConditionCombination/ AircraftCharacteristic/ weightInterpretation		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ selection/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
AIXM Mapping	Class: AircraftCharacteristic		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	OVR <*value*>
		FAA	OVR <*value*>
		Plain Text	Over <*value*>
	AT_OR_BELOW (*type* = PERMIT)	ICAO	AT BLW <*value*>
		FAA	AT BLW <*value*>
		Plain Text	And below <*value*>

47.2.11 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 47.11
Between Locations

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

47.2.12 AT Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 47.12
At Runway

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

47.2.13 AT Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 47.13
At Taxiway

Attribute	Value	
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)	
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	warning
	purpose	DESCRIPTION

Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

47.2.14 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 47.14
User-Entered Additional Information

Attribute	Value	
AIXM Path (UML)	Taxiway/ TaxiwayElement/ ManoeuvringAreaAvailability/ note	
AIXM Element Xpath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

47.2.15 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 47.15
Protective Barrier

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Manoeuvring Extension/ aim:warningBarrier (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningBarrier		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

47.3 Q Codes

TABLE 47.16
QCodes for Taxiway Closure

AIXM Coding	QCode	
ALL	**Series**	**A**
Closed	Q Code	QMXLC
	Scope	A
	Traffic	IV
	Purpose	NBO
Any Other Restriction/Exception Combination	Q Code	QMXLT
	Scope	A
	Traffic	IV
	Purpose	NBO

47.4 Business Rules

47.4.1 Template Business Rules

a. If designator equals null, then "Select a designator."

b. The addition of restriction(s) is optional. The user may be allowed to enter multiple restrictions.

c. The same restriction must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections).

d. A number (greater than zero) must be entered for wingspan, weight, and speed if selected.

e. When restriction equal to OTHER, then enter text in additional text box. Please provide user with contraction look up TABLE.

47.4.2 Policy Business Rules

None.

47.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and additional restriction/exception information, use a TimeSlice of type TEMPDELTA.

c. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

d. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED, and operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED, and operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED, and operations, aircraft, or flight types are listed under the type FORBID, and operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

e. For restrictions, type is FORBID. The values for wingspan Interpretation and weight Interpretation depend on type FORBID.

f. For exceptions, type is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on type PERMIT.

g. An xlink:href is required, should point to the associated Taxiway, and must use a TimeSlice of type SNAPSHOT.

h. The associated Taxiway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

i. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

47.5 Sample AIXM Message (Closed)

Sample NOTAM Message: TWY A CLSD BTN TWY C AND RWY 13/31


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
```

```
        <annotation>
          <Note gml:id="NOTE01">
            <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BTN TWY C AND RWY 13/31</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </TaxiwayElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWYEL01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
            <operationalStatus>CLOSED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: TWY A CLSD BTN TWY C AND RWY 13/31 TO ACFT WINGSPAN GTR THAN 118 FT


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
        <annotation>
          <Note gml:id="NOTE01">
            <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BTN TWY C AND RWY 13/31</note>
```

```
            </LinguisticNote>
          </translatedNote>
        </Note>
      </annotation>
    </TaxiwayElementTimeSlice>
  </timeSlice>
  <timeSlice>
    <TaxiwayElementTimeSlice gml:id="TWYEL01_TS02">
      <gml:validTime>
        <gml:TimePeriod gml:id="TWYEL01_TS02_TP01">
          <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
          <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
        </gml:TimePeriod>
      </gml:validTime>
      <interpretation>TEMPDELTA</interpretation>
      <sequenceNumber>14</sequenceNumber>
      <availability>
        <ManoeuvringAreaAvailability gml:id="MAA01">
          <operationalStatus>LIMITED</operationalStatus>
          <usage>
            <ManoeuvringAreaUsage gml:id="MAU01">
              <type>FORBID</type>
              <selection>
                <ConditionCombination gml:id="CC01">
                  <aircraft>
                    <AircraftCharacteristic gml:id="AC01">
                      <wingspan uom="FT">118</wingspan>
                      <wingSpanInterpretation>ABOVE</wingSpanInterpretation>
                    </AircraftCharacteristic>
                  </aircraft>
                </ConditionCombination>
              </selection>
            </ManoeuvringAreaUsage>
          </usage>
        </ManoeuvringAreaAvailability>
      </availability>
    </TaxiwayElementTimeSlice>
  </timeSlice>
</TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
<Taxiway gml:id="TWY01">
<gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
    <TaxiwayTimeSlice gml:id="TWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="TWY01_TS01_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>A</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </TaxiwayTimeSlice>
  </timeSlice>
</Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
```

```
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


47.6 Translation Templates

47.6.1 FAA

TWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] [***location***] [***note***] [***warningBarrier***] WEF**

47.6.2 ICAO E Line

TWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] [***location***] [***note***] [***warningBarrier***] WEF**

47.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Taxiway: *designator* **[***location***]**

Status: *status*

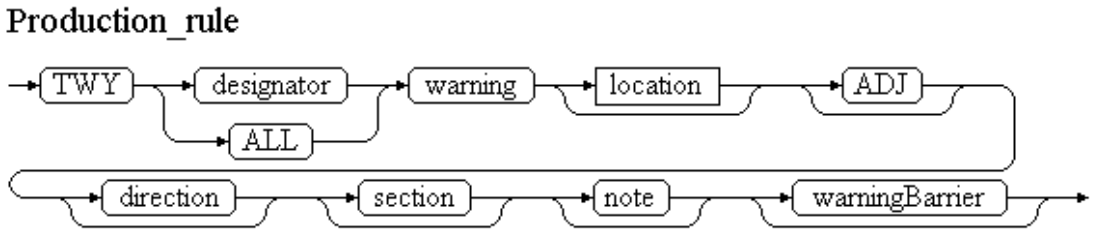
[Restriction(s): [*restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]]**
[Additional Information: [*note***] [***warningBarrier***]]**

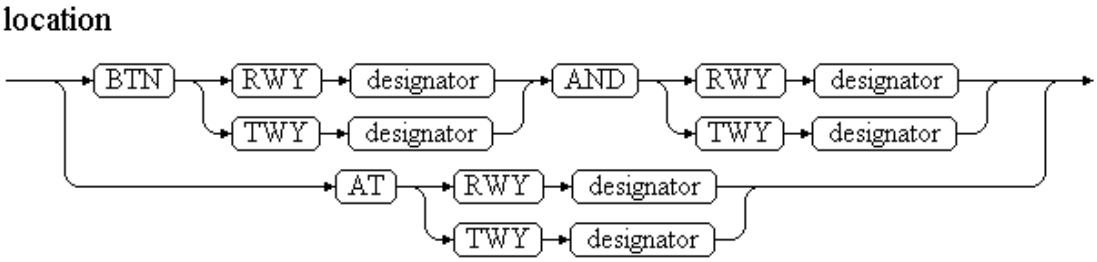
47.7 Additional Analysis

None.

48 Taxiway – Construction Status

Specify construction type hazards on and around a Taxiway.





48.1 Example NOTAMs

1. !MKE 02/010 MKE TWY R CONSTRUCTION AREA W EDGE 120 FT S TWY R3 MARKED WITH LGTD BARRICADES
2. !STL 05/088 STL TWY L OPEN EXCAVATION 1 FOOT WEST AND 175 FT SOUTH 12L/30R MARKED WITH LGTD BARRICADES

Source: FAA Order JO 7930.2

48.2 AIXM Mapping and Translation

48.2.1 Scenario Details

TABLE 48.1

Attribute	Value
Description	Specifies a construction on or near a taxiway element.
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway/ TaxiwayElement
Feature XPath	aixm:Taxiway aixm:TaxiwayElement
AIXM Mapping Diagram	Taxiway TaxiwayElement
NOTAM lifespan	
Start ASAP	No

48.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected (required).

TABLE 48.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

48.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 48.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

48.2.4 Warning Reason [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working on or near a runway).

Source: User-selected (required).

TABLE 48.4
Construction Warning

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)		
AIXM Element X Path	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / warning		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	OTHER:OPEN_EXCAVATION	ICAO	OPEN EXCAVATION
		FAA	OPEN EXCAVATION
		Plain Text	Open Excavation

	OTHER:STEEL_PLATES	ICAO	STEEL PLATES
		FAA	STEEL PLATES
		Plain Text	Steel Plates
	OTHER:CONSTR_AREA	ICAO	CONSTRUCTION AREA
		FAA	CONSTRUCTION AREA
		Plain Text	Construction Area

48.2.5 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the Taxiway.
Source: User-selected (required).

TABLE 48.5
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningAdjacent		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

48.2.6 Cardinal Direction [warning*Direction*]

Description: The sixteen points of the compass used to indicate the direction of the warning area.
Source: User-selected (optional, required with warningSection).

TABLE 48.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	N	ICAO	N
		FAA	N
		Plain Text	North
	NE	ICAO	NE
		FAA	NE
		Plain Text	Northeast
	E	ICAO	E
		FAA	E
		Plain Text	East

	SE	ICAO	SE
		FAA	SE
		Plain Text	Southeast
	S	ICAO	S
		FAA	S
		Plain Text	South
	SW	ICAO	SW
		FAA	SW
		Plain Text	Southwest
	W	ICAO	W
		FAA	W
		Plain Text	West
	NW	ICAO	NW
		FAA	NW
		Plain Text	Northwest

48.2.7 Taxiway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a Taxiway.

Source: User-selected (optional, required with warningDirection).

TABLE 48.7
Location

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningSection		
	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeTaxiwaySectionType		
	AIXM	**Translations**	
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

48.2.8 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 48.8
Between Locations

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note

AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

48.2.9 AT Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 48.9
At Runway

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY *<designator>*
		FAA	FOR RWY *<designator>*
		Plain Text	For Runway *<designator>*
	Runway End	ICAO	FOR APCH END RWY *<designator>*
		FAA	FOR APCH END RWY *<designator>*
		Plain Text	For Approach End Runway *<designator>*

48.2.10 AT Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 48.10
At Taxiway

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

48.2.11 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 48.11
User-Entered Additional Information

Attribute	Value	
AIXM Path (UML)	Taxiway/ TaxiwayElement/ ManoeuvringAreaAvailability/ note	
AIXM Element Xpath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

48.2.12 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 48.12
Protective Barrier

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Manoeuvring Extension/ aim:warningBarrier (attribute)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningBarrier
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability

Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

48.3 Q Codes

TABLE 48.13
QCodes for Construction Hazard

AIXM Code	Q Code	
ALL AIXM CODES	**Series**	**A**
	Q Code	QMXXX
	Scope	A
	Traffic	IV
	Purpose	BO

48.4 Business Rules

48.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a Taxiway."

b. When *warning* equal to null, then "Select a Construction Warning."

48.4.2 Policy Business Rules

None.

48.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *warning*, *adjacent*, and *cardinalDirection*, use a TimeSlice of type TEMPDELTA.

c. When *warningAdjacent* is null, then "Specify Adjacent."

d. The associated Taixway should have interpretation SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

48.5 Sample AIXM Message

Sample NOTAM Message: TAXIWAY A OPEN EXCAVATION ADJ N SIDE BTN TWY C AND RWY 13/31


```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
        <annotation>
          <Note gml:id="NOTE01">
          <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BETWEEN TWY A AND RWY 13/31</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </TaxiwayElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWYEL01_TS01_TP01">
            <gml:beginPosition></gml:beginPosition>
            <gml:endPosition></gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <associatedTaxiway xlink:href="#TWY01"/>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MA01">
```

```
            <warning>OTHER:OPEN_EXCAVATION</warning>
              <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>N</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

48.5.1 FAA

TWY *designator*|**ALL** *warning* **[***location***] [***adjacent***] [***direction***] [***section***] [***note***] [***warningBarrier***] WEF**

48.5.2 ICAO E Line

TWY *designator*|**ALL** *warning* **[***location***] [***adjacent***] [***direction***] [***section***] [***note***] [***warningBarrier***] WEF**

48.5.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Warning: *warning*

Affected Taxiway: *designator*

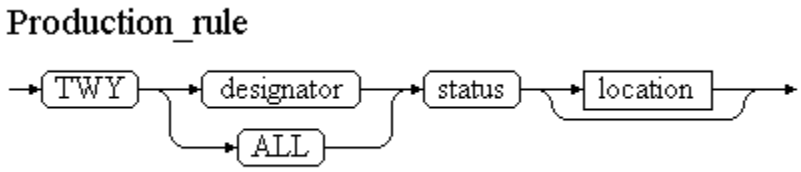
Location: [*location***] [***adjacent***] [***direction***] [***section***] [***note***] [***warningBarrier***] WEF**

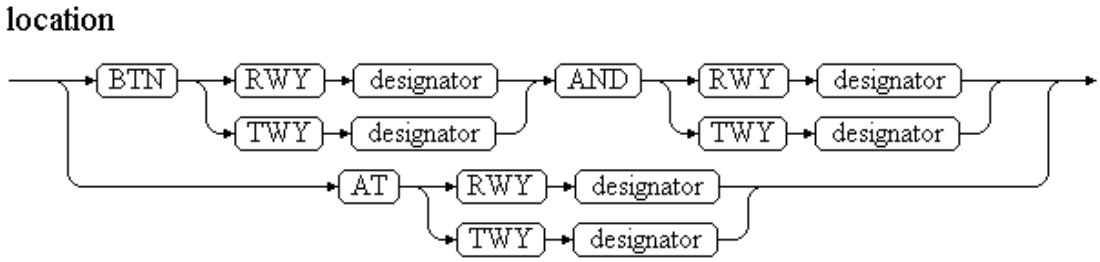
48.6 Additional Analysis

None.

49 Taxiway – Designated Non-Movement Area

Specify the status of a taxiway element (not a full taxiway).





49.1 Example NOTAMs

1. !MEM 11/124 MEM TWY A E OF TWY AS NONMOVEMENT AREA

Source: US NOTAM Repository

*Example from: FAA Order JO 7930.2

49.2 AIXM Mapping and Translation

49.2.1 Scenario Details

TABLE 49.1

Attribute	Value
Description	Specify a the status of a taxiway element
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway/ TaxiwayElement
Feature XPath	aixm:Taxiway aixm:TaxiwayElement
AIXM Mapping Diagram	Taxiway TaxiwayElement
NOTAM lifespan	
Start ASAP	No

49.2.2 Designator [designator] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 49.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

49.2.3 Taxiway Element [extent]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 49.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation SNAPSHOT]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

49.2.4 Status [operationalStatus]

Description: A unitary restriction or permission concerning the availability of a TaxiwayElement for aircraft types during specific hours.

Source: Assumed when Taxiway Closure event specification is selected. Selected by Data Encoding Business Rules.

TABLE 49.4
Taxiway Operational Status

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	LIMITED	ICAO	See below
		FAA	
		Plain Text	
AIXM Path (UML)	Taxiway/ TaxiwayElement/ ManoeuvringAreaAvailability/ note		
AIXM Element Xpath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/		

	annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	NON-MOVEMENT AREA	ICAO	NON-MOVEMENT AREA
		FAA	NON-MOVEMENT AREA
		Plain Text	Designated Non-Movement Area

49.2.5 BETWEEN Location Description: [note]

Description: The text in a note.

Source: User-selected (optional).

TABLE 49.5
Between Locations

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ annotation (object)/ note		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

49.3 Q Codes

TABLE 49.6
QCode for Taxiway Designated Non-Movement Area

Plain Text	QCode	
ALL	**Series**	**A**
Non-Movement Area	Q Code	QMXLT
	Scope	A
	Traffic	IV
	Purpose	NBO

49.4 Business Rules

49.4.1 Template Business Rules

a. If designator equals null, then "Select a designator."

49.4.2 Policy Business Rules

None.

49.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTAv.

b. For entering *operationalStatus* and additional restriction/exception information, use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required, should point to the associated Taxiway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

49.5 Sample AIXM Message

Sample NOTAM Message: TWY A NON-MOVEMENT AREA BTN TWY C AND RWY 13/31


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
```

```
        </extent>
        <annotation>
          <Note gml:id="NOTE01">
            <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BTN TWY C AND RWY 13/31</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </TaxiwayElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWYEL01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MAA01">
              <aixm:annotation>
                <aixm:Note gml:id="CY01_TS02_NT01">
                  <aixm:propertyName>operationalStatus</aixm:propertyName>
                  <aixm:purpose>REMARK</aixm:purpose>
                  <aixm:translatedNote>
                    <aixm:LinguisticNote gml:id="CY01_TS02_NT02">
                      <aixm:note lang="eng"> NON-MOVEMENT AREA</aixm:note>
                    </aixm:LinguisticNote>
                  </aixm:translatedNote>
                </aixm:Note>
              </aixm:annotation>
            <operationalStatus>LIMITED</operationalStatus>
          </ManoeuvringAreaAvailability>
        </availability>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
```

```
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


49.6 Translation Templates

49.6.1 FAA

TWY *designator status*

49.6.2 ICAO E Line

TWY *designator status*

49.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Taxiway: *designator*

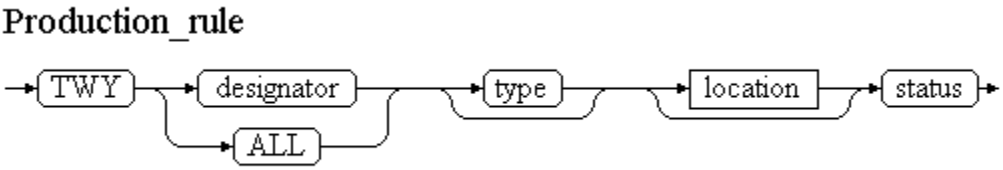
Status: *status*

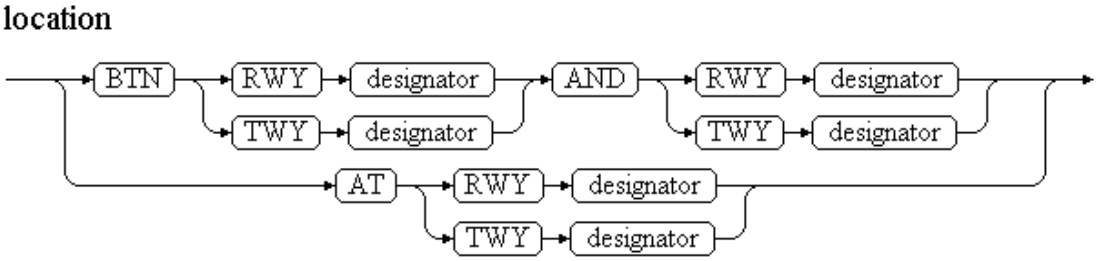
49.7 Additional Analysis

None.

50 Taxiway – Ground Lighting Status

Taxiway lights status for identifying which lights on the taxiway are out of service or obscured (if not all).





50.1 Example NOTAMs

1. !ACY 05/038 ACY TWY C LGTS OTS
2. !ACY 04/005 ACY TWY A CNTRLN LGTS OTS
3. !ACY 04/007 ACY TWY A EDGE LGTS OTS
4. !ROA ROA TWY E CNTRLN LGTS BTN TWY E1 AND RWY 15/33 OTS*

Source: US NOTAM Repository

*From FAA Order JO 7930.2

50.2 AIXM Mapping and Translation

50.2.1 Scenario Details

TABLE 50.1

Attribute	Value
Description	Specify a the status of a taxiway
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway
Feature XPath	aixm:Taxiway aixm:TaxiwayElement
AIXM Mapping Diagram	Taxiway TaxiwayElement Surface Lighting Elements
NOTAM lifespan	
Start ASAP	No

50.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 50.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

50.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 50.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

50.2.4 Taxiway Light Type [*position*]

Description: A code indicating the part of the taxiway served by the lighting system.

Source: User-selected (required).

TABLE 50.4
Light Location

Attribute	Value		
AIXM Path (UML)	Taxiway/ TaxiwayLightSystem/ position		
AIXM Element Xpath	TaxiwayLightSystem/ timeSlice/ TaxiwayLightSystemTimeSlice [interpretation SNAPSHOT]/ position		
AIXM Mapping	Class: TaxiwayLightSystem		
Enumeration	CodeTaxiwaySectionType		
	AIXM	**Translations**	
	CL	ICAO	TWY CL
		FAA	CNTRLN
		Plain Text	centerline
	EDGE	ICAO	TWY EDGE
		FAA	…

		Plain Text	…
	END	ICAO	STOP BAR
		FAA	STOP BAR
		Plain Text	stop bar
	TWY_INT	ICAO	TURNOFF
		FAA	TURNOFF
		Plain Text	turnoff
	OTHER:CLNC_BAR	ICAO	CLEARANCE BAR
		FAA	CLNC BAR
		Plain Text	Clearance bar
	OTHER:ALL	ICAO	…
		FAA	…
		Plain Text	…

50.2.5 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 50.5
Between Locations

Attribute	Value		
AIXM Path (UML)	TaxiwayLightSystem (feature)/ annotation (object)/ note		
AIXM Element XPath	TaxiwayLightSystem/ timeSlice/ TaxiwayLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

50.2.6 AT Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 50.6
At Runway

Attribute	Value
AIXM Path (UML)	TaxiwayLightSystem (feature)/ annotation/ note (attribute)
AIXM Element XPath	TaxiwayLightSystem/ timeSlice/ TaxiwayLightSystemTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note
AIXM Mapping	Class: Note, LinguisticNote

Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

50.2.7 AT Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 50.7
At Taxiway

Attribute	Value		
AIXM Path (UML)	TaxiwayLightSystem (feature)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayLightSystem/ timeSlice/ TaxiwayLightSystemTimeSlice [interpretation:TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

50.2.8 Status [operationalStatus]

Description: The operational status of the light system.

Source: User-selected (required).

TABLE 50.8
Ground Lighting Status

Attribute	Value	
AIXM Path (UML)	TaxiwayLightSystem/ GroundLightingAvailability	
AIXM Element Xpath	TaxiwayLightSystem/ timeSlice/ TaxiwayLightSystemTimeSlice [interpretation TEMPDELTA]/ availability/ GroundLightingAvailability/ operationalStatus	
AIXM Mapping	GroundLightingAvailability	
Enumeration	CodeStatusOperationsType	
	AIXM	**Translations**

	UNSERVICEABLE	ICAO	LGT OUT OF SERVICE
		FAA	LGTS OTS
		Plain Text	Lights out of service
	OTHER:COMMISSIONED	ICAO	LGT INSTALLED (INSTL)
		FAA	LGTS CMSN
		Plain Text	Lights commissioned
	OTHER:DECOMMISSIONED	ICAO	LGT COMPLETELY WITHDRAWN
		FAA	LGTS DCMSN
		Plain Text	Lights decommissioned
	OTHER:OBSCURED	ICAO	LGT OBSC
		FAA	LGTS OBSC
		Plain Text	Lights obscured
	OTHER:NON_STD	ICAO	NON STD
		FAA	NON STD
		Plain Text	Non Standard

50.3 Q Codes

TABLE 50.9
QCodes for Ground Lighting Status

Plain Text		**LGTS OTS**	**CMSN**	**DCMSN**	**OBSC**
ALL	**SERIES**	**A**	**A**	**A**	**A**
Centerline	Q Code	QLXAS	QLXCS	QLXAW	QLXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Edge	Q Code	QLYAS	QLYCS	QLYAW	QLYXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Stop Bar	Q Code	QLSAS	QLSCS	QLSAW	QLSXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Runway Guard	Q Code	QMXXX	QMXXX	QMXXX	QMXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Elevated Guard Lights	Q Code	QMXXX	QMXXX	QMXXX	QMXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Turnoff	Q Code	QMXXX	QMXXX	QMXXX	QMXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Clearance Bar	Q Code	QMXXX	QMXXX	QMXXX	QMXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO
Surface Movement Guidance And Control Systems	Q Code	QMXXX	QMXXX	QMXXX	QMXXX
	Scope	A	A	A	A
	Traffic	IV	IV	IV	IV
	Purpose	NBO	NBO	NBO	NBO

50.4 Business Rules

50.4.1 Template Business Rules

a. When *designator* equals null then "Select a designator."

b. When *status* equals null then "Select a status."

c. When *position* equals null then "Select a Taxiway Light Type."

50.4.2 Policy Business Rules

Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (FAA Order JO 7930.2, para 5-2-1a).

50.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *operationalStatus* and additional information, use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required, should point to the associated Taxiway, and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

50.5 Sample AIXM Message

Sample NOTAM Message: TWY A CNTRLN LGTS OTS


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayLightSystem gml:id="TLS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayLightSystemTimeSlice gml:id="TLS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="LS01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <position>CL</position>
        <lightedTaxiway xlink:href="#TWY01"/>
      </TaxiwayLightSystemTimeSlice>
    </timeSlice>
  </TaxiwayLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <TaxiwayLightSystem gml:id="TLS02">
    <timeSlice>
      <TaxiwayLightSystemTimeSlice gml:id="TLS02_TS01">
        <gml:validTime>
```

```
            <gml:TimePeriod gml:id="TLS02_TS01_TP01">
              <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>14</sequenceNumber>
          <availability>
            <GroundLightingAvailability gml:id="GLA01">
              <operationalStatus>UNSERVICEABLE</operationalStatus>
            </GroundLightingAvailability>
          </availability>
        </TaxiwayLightSystemTimeSlice>
      </timeSlice>
    </TaxiwayLightSystem>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <TaxiwayElement gml:id="TWYEL01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedTaxiway xlink:href="#TWY01"/>
          <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
          </extent>
        </TaxiwayElementTimeSlice>
      </timeSlice>
    </TaxiwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Taxiway gml:id="TWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <TaxiwayTimeSlice gml:id="TWY01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="TWY01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>A</designator>
```

```
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: TWY A CNTRLN LGTS OTS BTN TWY C AND RWY 13/31


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayLightSystem gml:id="TLS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayLightSystemTimeSlice gml:id="TLS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="LS01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <position>CL</position>
        <lightedTaxiway xlink:href="#TWY01"/>
      </TaxiwayLightSystemTimeSlice>
    </timeSlice>
  </TaxiwayLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
```

```
  <TaxiwayLightSystem gml:id="TLS02">
    <timeSlice>
      <TaxiwayLightSystemTimeSlice gml:id="TLS02_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="TLS02_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>14</sequenceNumber>
        <availability>
          <GroundLightingAvailability gml:id="GLA01">
            <operationalStatus>DOWNGRADED</operationalStatus>
          </GroundLightingAvailability>
        </availability>
      </TaxiwayLightSystemTimeSlice>
    </timeSlice>
  </TaxiwayLightSystem>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
        <annotation>
          <Note gml:id="NOTE01">
            <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BTN TWY C AND RWY 13/31</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
      </TaxiwayElementTimeSlice>
    </timeSlice>
```

```
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


50.6 Translation Templates

50.6.1 FAA

TWY *designator type* [**location**] *operationalStatus*

50.6.2 ICAO E Line

TWY *designator type* [**location**] *operationalStatus*

50.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Taxiway Lighting

Affected Taxiway: *designator*

Type: *type*

[Location: location]

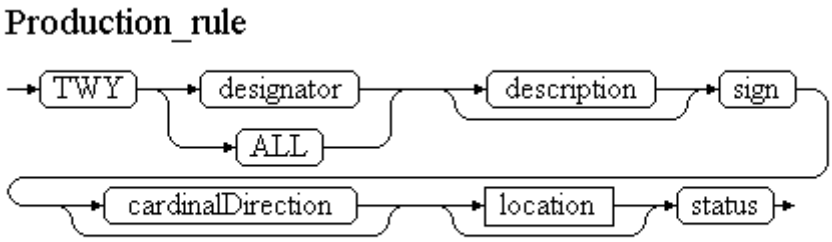
Status: *position operationalStatus*

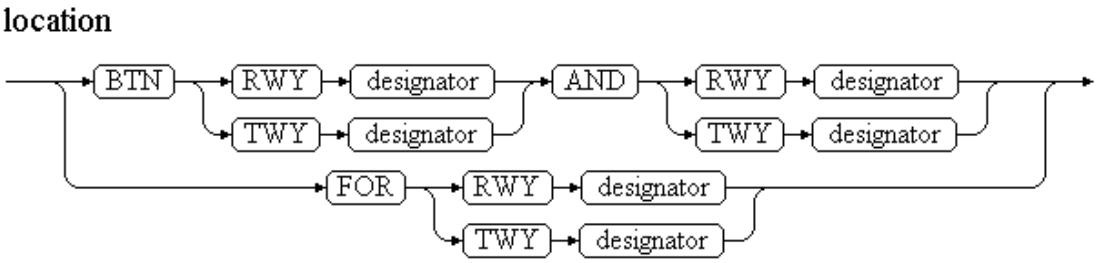
50.7 Additional Analysis

None.

51 Taxiway – Lighted Sign Status

This scenario is used to specify the status of lighted signage located on the airport facility.





51.1 Example NOTAMs

1. !CLL 01/006 CLL TWY H1 MANDATORY HOLD SIGN AT RWY 34 LGTS OTS
2. TWY B HOLD SIGN WEST SIDE FOR AER 13 UNLGTD*

Source: US NOTAM Repository

***Source:** Gary Prock (AIM NOTAM SME)

51.2 AIXM Mapping and Translation

51.2.1 Scenario Details

TABLE 51.1

Attribute	Value
Description	Specify the status of a sign on a Taxiway.
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway
Feature Path	aixm:Taxiway
AIXM Mapping Diagram	Taxiway TaxiwayElement AIM Extension: AirportSign
NOTAM lifespan	
Start ASAP	

51.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 51.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

51.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 51.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

51.2.4 Description: [*description*]

Description: Text message which appears on the sign (ie, 4000 FT, 2000 FT, etc.)

Source: User-entered (optional).

TABLE 51.4
Sign Description

Attribute	Value	
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/ annotation/ note	
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:TEMPDELTA]/ annotation Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	type
	purpose	DESCRIPTION
Enumeration	TextNoteType	

51.2.5 Sign Type [*type*]

Description: The type of sign that is affected.

Source: User-selected (required)

TABLE 51.5
Sign Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ signType		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	AIM Extension: CodeSignType		
	AIXM	**Translations**	
	APRON	ICAO	APRON SIGN
		FAA	APRON SIGN
		Plain Text	Apron sign
	CARGO	ICAO	CARGO SIGN
		FAA	CARGO SIGN
		Plain Text	Cargo sign
	CIVIL	ICAO	CIVIL SIGN
		FAA	CIVIL SIGN
		Plain Text	Civil aircraft area sign
	FBO	ICAO	FBO SIGN
		FAA	FBO SIGN
		Plain Text	Fixed based operator sign
	FUEL	ICAO	FUEL SIGN
		FAA	FUEL SIGN
		Plain Text	Aircraft fueling sign
	GUIDANCE	ICAO	GUIDANCE SIGN
		FAA	GUIDANCE SIGN
		Plain Text	Guidance Sign
	HOLD_INSTRUMENT_LANDING_ SYSTEM	ICAO	ILS CRITICAL HOLD SIGN
		FAA	ILS CRITICAL HOLD SIGN
		Plain Text	Holding position sign for ILS critical areas
	HOLD_RUNWAY_APPROACH	ICAO	APPROACH AREA HOLD SIGN
		FAA	APPROACH AREA HOLD SIGN
		Plain Text	Holding position sign for runway approach areas
	HOLD_RUNWAY_INTERSECTION	ICAO	RWY INT HOLD SIGN
		FAA	RWY INT HOLD SIGN
		Plain Text	Holding position sign for runway/runway intersection
	HOLD_TAXIWAY_RUNWAY	ICAO	HOLD SIGN
		FAA	HOLD SIGN
		Plain Text	Holding position sign
	INFO	ICAO	INFORMATION SIGN
		FAA	INFORMATION SIGN
		Plain Text	Information sign
	INSTRUMENT_LANDING_SYSTEM _CRITICAL	ICAO	ILS CRITICAL BOUNDARY SIGN
		FAA	ILS CRITICAL BOUNDARY SIGN
		Plain Text	ILS critical boundary sign
	INTL	ICAO	INTL SIGN
		FAA	INTL SIGN
		Plain Text	International flight area sign

	MIL	ICAO	MIL SIGN
		FAA	MIL SIGN
		Plain Text	Military aircraft area sign
	NO_ENTRY	ICAO	NO ENTRY SIGN
		FAA	NO ENTRY SIGN
		Plain Text	No entry sign
	OUTBOUND_DESTINATION	ICAO	OUBD DESTN SIGN
		FAA	OBND DESTN SIGN
		Plain Text	Outbound destination sign
	PAX	ICAO	PAX SIGN
		FAA	PAX SIGN
		Plain Text	Destination sign for areas set aside for passenger handling
	ROAD_STOP	ICAO	STOP SIGN
		FAA	STOP SIGN
		Plain Text	Stop sign
	ROAD_YIELD	ICAO	YIELD SIGN
		FAA	YIELD SIGN
		Plain Text	Yield sign
	RSA_RUNWAY_APPROACH	ICAO	RWY APCH BOUNDARY SIGN
		FAA	RWY APCH BOUNDARY SIGN
		Plain Text	Runway approach boundary sign
	RUNWAY_EXIT	ICAO	RWY EXIT SIGN
		FAA	RWY EXIT SIGN
		Plain Text	Runway exit sign
	RUNWAY_LOCATION	ICAO	RWY LOCATION SIGN
		FAA	RWY LOCATION SIGN
		Plain Text	RWY location sign
	RUNWAY_DISTANCE_REMAINING	ICAO	DISTANCE REMAINING SIGN
		FAA	DISTANCE REMAINING SIGN
		Plain Text	Distance remaining sign
	TAXIWAY_DIRECTION	ICAO	TWY DIRECTION SIGN
		FAA	TWY DIRECTION SIGN
		Plain Text	Taxiway direction sign
	TAXIWAY_END	ICAO	TWY END SIGN
		FAA	TWY END SIGN
		Plain Text	Taxiway ending sign
	TAXIWAY_LOCATION	ICAO	TWY LOCATION SIGN
		FAA	TWY LOCATION SIGN
		Plain Text	Taxiway location sign
	TERMINAL	ICAO	TERMINAL SIGN
		FAA	TRML SIGN
		Plain Text	Gate positions sign
	OTHER:ALL	ICAO	ALL SIGNS
		FAA	ALL SIGNS
		Plain Text	All signs

51.2.6 Position [*location*]

Description: A code indicating the position of an item on a surface near a runway.

Source: Baseline data (required – future).

TABLE 51.6
Location

Attribute	Value

AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/ location (attribute)
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ location/ significantPoint/ gml:pos
AIXM Mapping	Class: AIM Extension AirportSign
Datatype	GML – decimal

51.2.7 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 51.7 Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation:SNAPSHOT]/ cardinalDirection		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

51.2.8 For Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 51.8
Additional Location Information

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName		type
	purpose		DESCRIPTION
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <designator>
		FAA	FOR RWY <designator>
		Plain Text	For Runway <designator>
	Runway End	ICAO	FOR APCH END RWY <designator>
		FAA	FOR APCH END RWY <designator>
		Plain Text	For Approach End Runway <designator>

51.2.9 For Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 51.9
Additional Location Information

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Taxiway	ICAO	FOR TWY <designator>
		FAA	FOR TWY <designator>
		Plain Text	For Taxiway <designator>

51.2.10 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 51.10
Additional Location Information

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

51.2.11 Annotation [*note*]

Description: The text in a note.
Source: User-selected (optional).

TABLE 51.11
Additional Location Information

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element X Path	AirportSign/ timeSlice/ AirportSignTimeSlice [interpretation: SNAPSHOT]/ annotation Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: AIM Extension AirportSign		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	BETWEEN <designator1> and <designator2>	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

51.2.12 Sign Status [*status*]

Description: The operational status of the lighted sign.
Source: User-selected (required).

TABLE 51.12
Sign Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ AirportSign (feature)/		
AIXM Element XPath	Sign/ timeSlice/ SignTimeSlice [interpretation:TEMPDELTA]/ status		
AIXM Mapping	Class: AIM Extension AirportSign		
Enumeration	CodeStatusType		
	AIXM	**Translations**	
	UNLIGHTED	ICAO	UNLGTD
		FAA	UNLGTD
		Plain Text	Unlighted
	OBSCURED	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Obscured
	UNSERVICEABLE	ICAO	UNAVBL
		FAA	UNAVBL
		Plain Text	Unavailable
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard

51.3 Q Codes

TABLE 51.13 QCodes for Taxiway Sign Status

AIXM Code	Q Code	
ALL	**Series**	**A**
UNLIGHTED	Q Code	QMXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
OBSCURED	Q Code	QMXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
UNSERVICEABLE	Q Code	QMXXX
	Scope	A
	Traffic	IV
	Purpose	NBO
NON_STANDARD	Q Code	QMXXX
	Scope	A
	Traffic	IV
	Purpose	NBO

51.4 Business Rules

51.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a taxiway."

b. When *type* equal to null, then "Select a type of lighted signage."

c. When *status* equal to null, then "Select a status for the sign."

d. Both the **description** and **location** are optional.

e. For **location**, the user should only be able to select Runways or Taxiways that intersect with the selected Runway/Taxiway.

f. For **location**, the user should only be able to enter information for FOR or BETWEEN.

51.4.2 Policy Business Rules

Only originate NOTAMs for lighting aids you are responsible for controlling or monitoring (FAA Order JO 7930.2, para 5-2-1a).

51.4.3 Data Encoding Business Rules

a. For entering *designator*, **description**, *type*, *cardinalDirection*, **location**, *forRunway*, *for Taxiway*, and *note*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *status*, use a TimeSlice of type TEMPDELTA.

c. An xlink:href is required and should point to the associated Taxiway or identified by UUID in a TimeSlice of type TEMPDELTA.

51.5 Sample AIXM Message

Sample NOTAM Message: TWY A HOLD SIGN FOR APCH END RWY 04 UNLGTD


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <aim:AirportSign gml:id="SIGN01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <aim:timeSlice>
      <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <aim:interpretation>SNAPSHOT</aim:interpretation>
        <aim:signType>HOLD_RUNWAY_INTERSECTION</aim: signType >
        <associatedRunway xlink:href="#RWYDIR01"/>
        <annotation>
          <Note gml:id="Note01">
          <propertyName>signType</propertyName>
          <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LinguisticNote01">
                <note>FOR APCH END RWY 04</note>
```

```
                </LinguisticNote>
              </translatedNote>
            </Note>
          </annotation>
        </aim:AirportSignTimeSlice>
      </aim:timeSlice>
      <aim:timeSlice>
        <aim:AirportSignTimeSlice gml:id="SIGN01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="SIGN01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <aim:interpretation>TEMPDELTA</aim:interpretation>
          <sequenceNumber>13</sequenceNumber>
          <aim:status>UNLIGHTED</aim:status>
        </aim:AirportSignTimeSlice>
      </aim:timeSlice>
    </aim:AirportSign>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <Taxiway gml:id="TWY01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <TaxiwayTimeSlice gml:id="TWY01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="TWY01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>A</designator>
          <associatedAirportHeliport xlink:href="#ACY"/>
        </TaxiwayTimeSlice>
      </timeSlice>
    </Taxiway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <TaxiwayElement gml:id="TWYEL01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedTaxiway xlink:href="#TWY01"/>
          <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
```

```
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


51.6 Translation Templates

51.6.1 FAA

TWY *designator* **[description]** *type* **[**cardinalDirection**] [location]** *status* **WEF**

51.6.2 ICAO E Line

TWY *designator* **[description]** *type* **[**cardinalDirection**] [location]** *status* **WEF**

51.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Taxiway: *designator*

Affected Sign: description *type*

Location: location

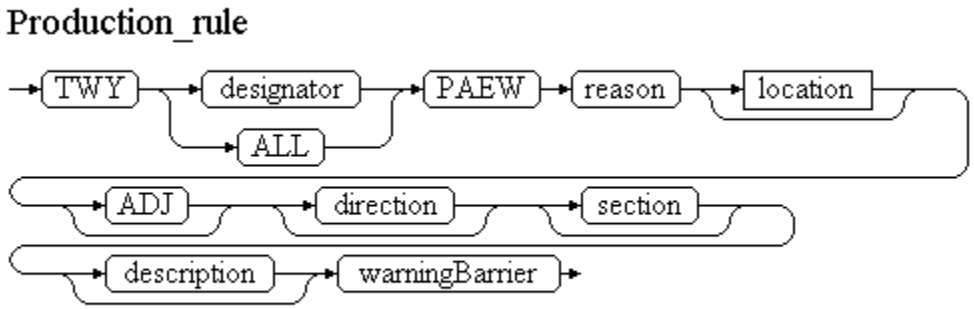
Status: *status*

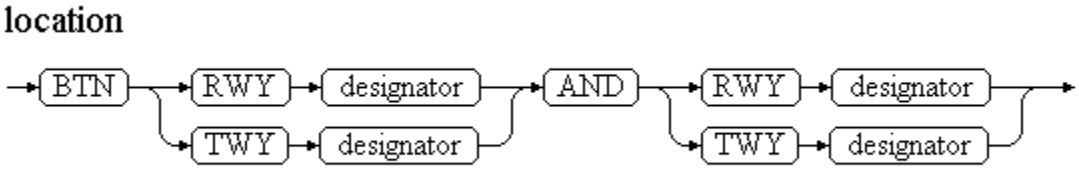
51.7 Additional Analysis

About half of the NOTAMs issued for Runway Hold Signs in the last year call the sign a "Hold Sign" and the other half call it a "Hold Short Sign."

52 Taxiway – Personnel and Equipment Working

Specify personnel warning for a taxiway.





52.1 Example NOTAMs

1. !SBY SBY TWY E PAEW SOUTH SIDE BTN RWY 5/TWY_G

Source: FAA Order JO 7930.2

52.2 AIXM Mapping and Translation

52.2.1 Scenario Details

TABLE 52.1

Attribute	Value
Description	Specifies a personnel warning on or near a taxiway element
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Taxiway/ TaxiwayElement
Feature XPath	aixm:Taxiway aixm:TaxiwayElement
AIXM Mapping Diagram	Taxiway TaxiwayElement
NOTAM lifespan	
Start ASAP	No

52.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 52.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

52.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 52.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

52.2.4 Warning Reason [*warning*]

Description: A code indicating a reason for caution in airport operations. For example, work in progress on a taxiway.

Source: User-selected (optional). Default is EQUIP.

TABLE 52.4
Personnel and Equipment Working Warning

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / warning		
AIXM Mapping	Class: ManoeuvringAreaAvailability		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	EQUIP*	ICAO	PERSONNEL AND EQUIPMENT WORKING
		FAA	PAEW
		Plain Text	Personnel and equipment working
	RESURFACING	ICAO	RESURFACING
		FAA	RESURFACING
		Plain Text	resurfacing
	PAVING	ICAO	SFC PAVING
		FAA	SFC PAVING
		Plain Text	surface paving
	PAINTING	ICAO	SFC PAINTING

		FAA	SFC PAINTING
		Plain Text	surface painting
	GRASS_CUTTING	ICAO	GRASS CUTTING
		FAA	GRASS CUTTING
		Plain Text	grass cutting
	OTHER:CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	OTHER:MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE
		Plain Text	Maintenance
	OTHER:SNOW_REMOVAL	ICAO	SNOW REMOVAL
		FAA	SNOW REMOVAL
		Plain Text	Snow removal
	OTHER:ICE_REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	OTHER:CONT_BURN	ICAO	CONTROLLED BURN/HEAVY SMOKE
		FAA	CONTROLLED BURN/HEAVY SMOKE
		Plain Text	Controlled Burn and Heavy Smoke
	OTHER:HEAVY_EQUIP	ICAO	HEAVY EQUIP
		FAA	HEAVY EQUIPMENT
		Plain Text	Heavy Equipment

**If no reason is selected, the default is EQUIP.*

52.2.5 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the Taxiway.

Source: User-selected (required).

TABLE 52.5
Adjacent

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningAdjacent		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningAdjacent		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

52.2.6 Cardinal Direction [warning*Direction*]

Description: The sixteen points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional, required with warningSection).

TABLE 52.6
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningDirection		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningDirection		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	N	ICAO	N
		FAA	N
		Plain Text	North
	NE	ICAO	NE
		FAA	NE
		Plain Text	Northeast
	E	ICAO	E
		FAA	E
		Plain Text	East
	SE	ICAO	SE
		FAA	SE
		Plain Text	Southeast
	S	ICAO	S
		FAA	S
		Plain Text	South
	SW	ICAO	SW
		FAA	SW
		Plain Text	Southwest
	W	ICAO	W
		FAA	W
		Plain Text	West
	NW	ICAO	NW
		FAA	NW
		Plain Text	Northwest

52.2.7 Taxiway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a Taxiway.

Source: User-selected (optional, required with warningDirection).

TABLE 52.7
Additional Location Information

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ ManoeuvringAreaAvailability (extension)/ warningSection		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningSection		
	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	CodeTaxiwaySectionType		
	AIXM	**Translations**	
	EDGE	ICAO	EDGE
		FAA	EDGE

		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

52.2.8 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 52.8
Between Locations

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

52.2.9 Description: [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 52.9
User-Entered Additional Information

Attribute	Value	
AIXM Path (UML)	Taxiway/ TaxiwayElement/ ManoeuvringAreaAvailability/ note	
AIXM Element Xpath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

52.2.10 Protective Barrier [*warningBarrier*]

Description: Brief additional description of the operational situation.

Source: User-selected (optional).

TABLE 52.10
Protective Barrier

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Manoeuvring Extension/ aim:warningBarrier (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / extension/ aim:warningBarrier		
AIXM Mapping	Class: AIM Extension ManoeuvringAreaAvailability		
Enumeration	AIM Extension: CodeBarrierType		
	AIXM	**Translations**	
	NONE	ICAO	…
		FAA	…
		Plain Text	…
	BARRIER	ICAO	BARRICADED
		FAA	BARRICADED
		Plain Text	Barricaded
	LIGHTED_BARRIER	ICAO	LGTD AND BARRICADED
		FAA	LGTD AND BARRICADED
		Plain Text	Lighted and Barricaded

52.3 Q Codes

TABLE 52.11
QCodes for Taxiway Personnel and Equipment Working

AIXM Code	Q Code	
ALL AIXM CODES	**Series**	**A**
	Q Code	QMXHW (Taxiway work in progress)
	Scope	A
	Traffic	IV
	Purpose	BO

52.4 Business Rules

52.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a Taxiway."

b. For warning, Personnel and Equipment Working (EQUIP) is the default value. Additional reasons are not required (but are accepTABLE).

52.4.2 Policy Business Rules

None.

52.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *warning*, *adjacent*, and *cardinalDirection*, use a TimeSlice of type TEMPDELTA.

c. When *warningAdjacent* is null, then "Specify Adjacent."

d. The associated Taixway should have interpretation SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

52.5 Sample AIXM Message

Sample NOTAM Message: TAXIWAY A PAEW GRASS CUTTING ADJ N SIDE BTN TWY C AND RWY 13/31


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
      </TaxiwayElementTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL021_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWYEL02_TS01_TP01">
            <gml:beginPosition></gml:beginPosition>
            <gml:endPosition></gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
```

```
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
        <annotation>
          <Note gml:id="NOTE01">
          <purpose>DESCRIPTION</purpose>
            <translatedNote>
              <LinguisticNote gml:id="LN01">
                <note>BETWEEN TWY A AND RWY 13/31</note>
              </LinguisticNote>
            </translatedNote>
          </Note>
        </annotation>
        <availability>
          <ManoeuvringAreaAvailability gml:id="MA01">
            <warning>EQUIP</warning>
            <extension>
              <aim:ManoeuvringAreaAvailabilityExtension>
                <aim:warningAdjacent>YES</aim:warningAdjacent>
                <aim:warningDirection>N</aim:warningDirection>
                <aim:warningSection>OTHER:SIDE</ aim:warningSection >
              </aim:ManoeuvringAreaAvailabilityExtension>
            </extension>
          </ManoeuvringAreaAvailability>
        </availability>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
```

```
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


52.5.1 FAA

TWY *designator* **PAEW [***reason***] [***adjacent***] [***direction***] [***section***] [***location***] [***description***] [***warningBarrier***] WEF**

52.5.2 ICAO E Line

TWY *designator* **PAEW [***reason***] [***adjacent***] [***direction***] [***section***] [***location***] [***description***] [***warningBarrier***] WEF**

52.5.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Personnel and Equipment Working (PAEW)

Warning: *reason*

Affected Taxiway: *designator*

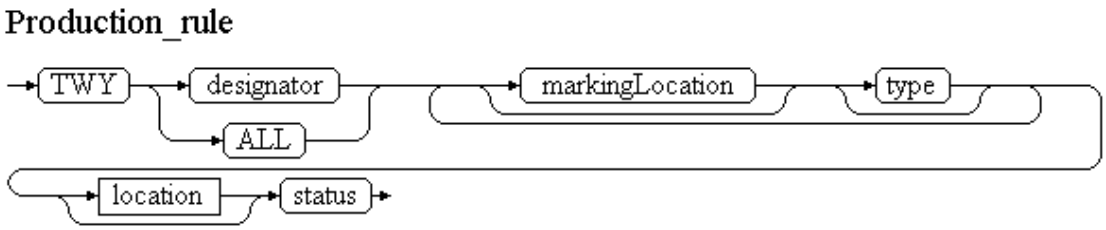
Location: [*adjacent***] [***direction***] [***section***] [***location***] [***description***] [***warningBarrier***]**

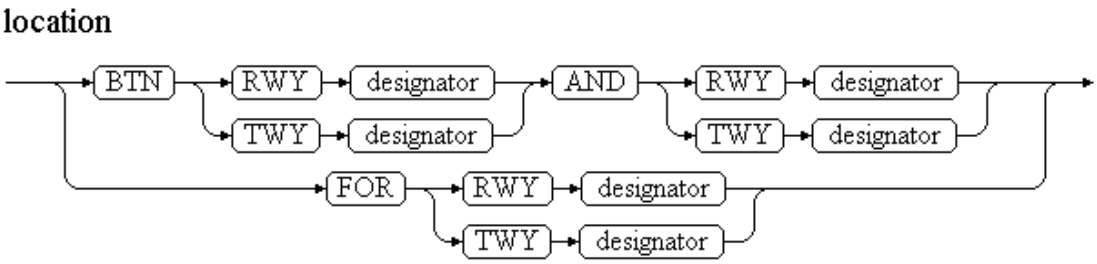
52.6 Additional Analysis

None.

53 Taxiway – Ground Markings Status

Taxiway ground marking status for identifying which ground markings are not visible.





53.1 Example NOTAMs

1. TWY A HOLD SHORT LINE FOR RWY 13/31 OBSC*
2. !JFK 10/017 JFK TWY Y EDGE LINES OBSC BTN TWY F,Z
3. !SOW 07/015 SOW TWY A, A1, A2, A3, A4, A5 TAXI AND HOLD LINES OBSC

Source: US NOTAM Repository
* From Gary Prock

53.2 AIXM Mapping and Translation

53.2.1 Scenario Details

TABLE 53.1

Attribute	Value
Description	Specify the status of the markings on a taxiway
Maps to Keyword	Taxiway
Feature Type Id	AirportHeliport/ Marking
Feature XPath	aixm:TaxiwayMarking
AIXM Mapping Diagram	Taxiway TaxiwayElement Markings/Surface Marking
NOTAM lifespan	
Start ASAP	Yes

53.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 53.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

53.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 53.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

53.2.4 Marking Type [*markingLocation*]

Description: A code indicationg the location of the marking relative to the surface.

Source: User-selected (*markingLocation* or *type* required)

TABLE 53.4
Marking Location

Attribute	Value		
AIXM Path (UML)	TaxiwayMarking (feature)/ markingLocation (attribute)		
AIXM Element XPath	TaxiwayMarking/ timeSlice/ TaxiwayMarkingTimeSlice [interpretation SNAPSHOT]/ markingLocation		
AIXM Marking	Class: TaxiwayMarking		
Enumeration	CodeTaxiwaySectionType		
	AIXM	**Translations**	
	CL	ICAO	TWY CL
		FAA	TWY CNTRLN
		Plain Text	Centerline
	EDGE	ICAO	TWY EDGE LINE
		FAA	EDGE LN
		Plain Text	Edge Line
	OTHER:SHOULDER	ICAO	TWY SHOULDER LINE
		FAA	SHOULDER LINE
		Plain Text	Shoulder Line

	RWY_INT	ICAO	RWY HOLD SHORT LINE
		FAA	HOLD SHORT LN
		Plain Text	Hold Short Line
	TWY_INT	ICAO	TWY HOLD LINE
		FAA	TWY HOLD LN
		Plain Text	Taxiway Hold Line

*Should appear in one menu with Marking Type [*type*]

53.2.5 Marking Type [*type*]

Description: A code indicationg the type of marking (if not at a specific location).

Source: User-selected (*markingLocation* or *type* required)

TABLE 53.5
Marking Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ Marking/ Marking Element Extension/ aim:type		
AIXM Element XPath	TaxiwayMarking/ timeSlice/ TaxiwayMarkingTimeSlice [interpretation SNAPSHOT]/ element/ MarkingElement/ extension/ type		
AIXM Mapping	Class: AIM Extension MarkingElement		
Enumeration	CodeMarkingType		
	AIXM	**Translations**	
	TAXI	ICAO	TAXI LINE
		FAA	TAXI LINE
		Plain Text	Taxi Line
	DIRECTION	ICAO	TWY DIRECTION
		FAA	DIRECTION
		Plain Text	Direction
	LOCATION	ICAO	LOCATION
		FAA	LOCATION
		Plain Text	Location
	GEOGRAPHIC_POS	ICAO	GEOGRAPHIC POSITION
		FAA	GEOGRAPHIC POSITION
		Plain Text	Geographic Position
	OTHER:ALL	ICAO	ALL
		FAA	ALL
		Plain Text	All

*Should appear in one menu with Marking Type [*markingLocation*]

53.2.6 BETWEEN Location Description: [*note*]

Description: The text in a note.

Source: User-selected (optional).

TABLE 53.6
Between Locations

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note

AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	BETWEEN Location 1 AND Location 2	ICAO	BETWEEN <designator1> and <designator2>
		FAA	BTN <designator1> and <designator2>
		Plain Text	Between <designator1> and <designator2>

53.2.7 AT Runway Designator [*note*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 53.7
At Runway

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

53.2.8 AT Taxiway Designator [*note*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 53.8
At Taxiway

Attribute	Value		
AIXM Path (UML)	TaxiwayElement (feature)/ ManoeuvringAreaAvailability (object)/ annotation/ note (attribute)		
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability / annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	warning	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

53.2.9 Status [*status*]

Description The operational status of the surface markings.

Source: User-selected (required).

TABLE 53.9
Ground Marking Operational Status

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Markings/ TaxiwayMarking (extension)/ status (attribute)		
AIXM Element XPath	TaxiwayMarking/ timeSlice/ TaxiwayMarkingTimeSlice [interpretation SNAPSHOT]/ extension/ aim:status		
AIXM Mapping	Class: AIM Extension TaxiwayMarking		
Enumeration	AIM Extension:CodeMarkingStatusType		
	AIXM	**Translations**	
	OBSC	ICAO	MARKINGS OBSCURED
		FAA	MARKINGS OBSC
		Plain Text	Markings Obscured
	PART_OBSC	ICAO	MARKINGS PARTIALLY OBSCURED
		FAA	MARKINGS PARTIALLY OBSC
		Plain Text	Markings Partially Obscured
	FADED	ICAO	MARKINGS FADED
		FAA	MARKINGS FADED
		Plain Text	Markings Faded
	REMOVED	ICAO	MARKINGS REMOVED
		FAA	MARKINGS REMOVED

		Plain Text	Markings Removed
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	Unmarked
	NON_STANDARD	ICAO	NONSTD MARKINGS
		FAA	NONSTD MARKINGS
		Plain Text	Non-Standard Markings

53.3 Q Codes

TABLE 53.10
QCodes for Taxiway Ground Marking Status

AIXM Code	Q Code	
ALL	Series	A
	Q Code	QMMXX
	Scope	A
	Traffic	IV
	Purpose	MNBO

53.4 Business Rules

53.4.1 Template Business Rules

a. If *designator* equal to null then "Select a designator."

b. When *type* equals null then "Select a Marking Type."

c. One of the element types, *markingLocation* or *type* is required.

d. Location is optional.

e. If *condition* or *taxiwayMarkingType* are null, then "Select the Marking Status."

53.4.2 Policy Business Rules

None

53.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering *condition* and additional information use a TimeSlice of type TEMPDELTA.

c. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

d. An xlink:href is required and should point to the associated Taxiway and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

e. The associated Taxiway or TaxiwayElement should have interpretation SNAPSHOT and contain the designator and an xlink:href is required and should point to the associated AirportHeliport and must use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

53.5 Sample AIXM Message (Closed)

Sample NOTAM Message: TWY A HOLD SHORT LINE RWY 13/31 OBSC

```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <TaxiwayMarking gml:id="TM01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayMarkingTimeSlice gml:id="TM01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <markingLocation>RWY_INT</markingLocation>
        <markedTaxiway xlink:href="#TWY01"/>
      </TaxiwayMarkingTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayMarkingTimeSlice gml:id="TM01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TMEL01_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-17T19:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>13</sequenceNumber>
        <extension>
          <aim:TaxiwayGoundMarkingExtension>
            <aim:status>OBSC</aim:status>
          </aim:TaxiwayGoundMarkingExtension >
        </extension>
      </TaxiwayMarkingTimeSlice>
    </timeSlice>
  </TaxiwayMarking>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
        <annotation>
          <Note gml:id="NOTE01">
            <translatedNote>
```

```
                <LinguisticNote gml:id="LN01">
                  <note>FOR RWY 13/31</note>
                </LinguisticNote>
              </translatedNote>
            </Note>
          </annotation>
        </TaxiwayTimeSlice>
      </timeSlice>
    </Taxiway>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <TaxiwayElement gml:id="TWYEL01">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedTaxiway xlink:href="#TWY01"/>
          <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
          </extent>
        </TaxiwayElementTimeSlice>
      </timeSlice>
    </TaxiwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
```

```
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


53.6 Translation Templates

53.6.1 FAA

TWY *designator* [*markingLocation*] [*type*] [*location*] [*condition*] [*taxiwayMarkingType*]

53.6.2 ICAO E Line

TWY *designator* [*markingLocation*] [*type*] [*location*] [*condition*] [*taxiwayMarkingType*]

53.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *afffectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Taxiway Marking Status

Affected Taxiway: *designator*

Marking Type: [*markingLocation*] [*type*]

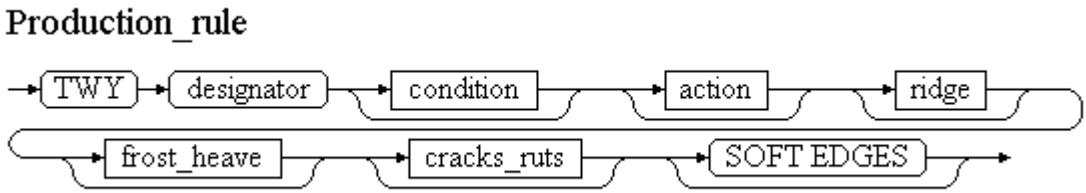
Location: [*location*]

Status: [*condition*] [*taxiwayMarkingType*]

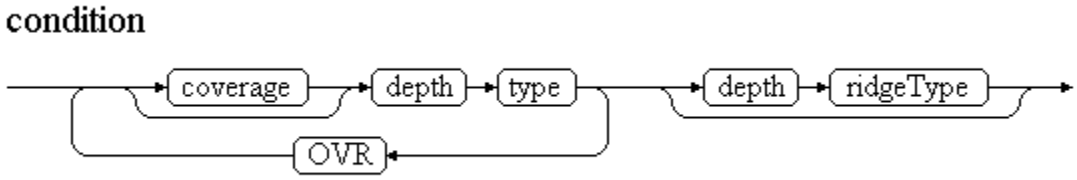
53.7 Additional Analysis

54 Taxiway – Surface Condition

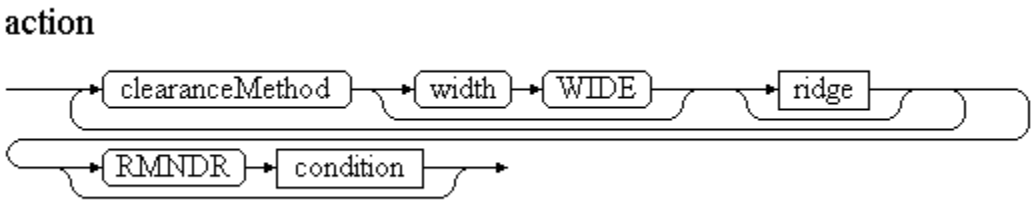
This scenario is used to report snow, ice, slush, water conditions and actions such as plowed, swept, sanded and deiced as outlined in FAA Order JO 7930.2M section 5-1-4.



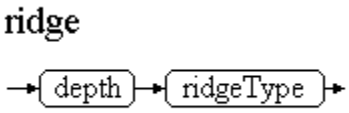
Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



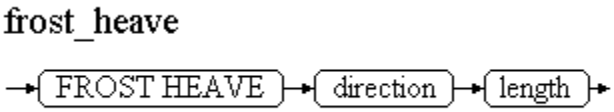
Action(s) – plowed, swept, sanded, deiced, etc.



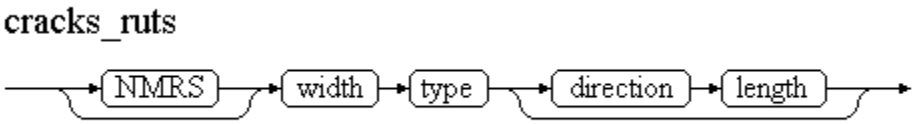
Ridge – snowbank, berm and windrows



Frost Heave



Cracks/Ruts



54.1 Example NOTAMs

1. !TYS TYS TWY ALL EXC TWY G _ IN ICE WEF 0712051430

Source: FAA Ordrt JO 7930.2

54.2 AIXM Mapping and Translation General

54.2.1 Scenario Details

TABLE 54.1

Attribute	Value
Description	Specify the surface conditions for a taxiway.
Feature Type Id	Taxiway
Feature XPath	aixm:Taxiway
AIXM Mapping Diagram	Surface Contamination
NOTAM lifespan	24 Hours
Start ASAP	Yes

54.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 54.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

54.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

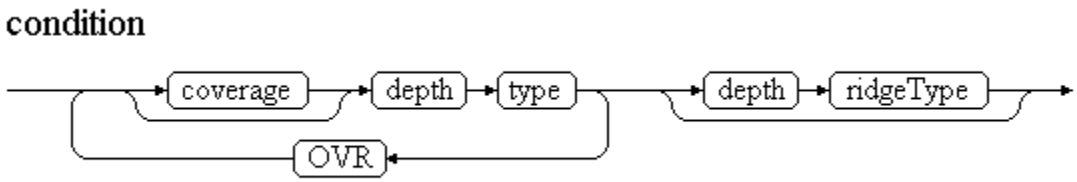
Source: User-selected from baseline data (optional).

TABLE 54.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

54.3 AIXM Mapping and Translation Condition(s)

Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



54.3.1 Coverage [*coverage*]

Description The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 54.4
Surface Coverage

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ proportion(attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ proportion		
AIXM Mapping	Class: TaxiwayContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…
		Plain Text	Fully Covered
	50	Text NOTE	
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ annotation/ note(attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	proportion	
	purpose	DESCRIPTION	

Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

54.3.2 Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 54.5
Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ depth		
AIXM Mapping	Class: TaxiwayContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

54.3.3 Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 54.6
Layer Order

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer
Datatype	NoSequenceType
Min inclusive	0

54.3.4 Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

TABLE 54.7
Type of Surface Contamination

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLUSH
		Plain Text	Slush
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	Ice
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PACKED SN
		Plain Text	Packed Snow
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LOOSE SN
		Plain Text	Loose Snow
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SN/ICE
		Plain Text	Snow and Ice
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WET SN
		Plain Text	Wet Snow
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS

		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding

54.3.5 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 54.8
Drift Depth

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

54.3.6 Ridge Type (DRIFT) [*ridgeType*]

Description: The type of drift (such as a snowbank).

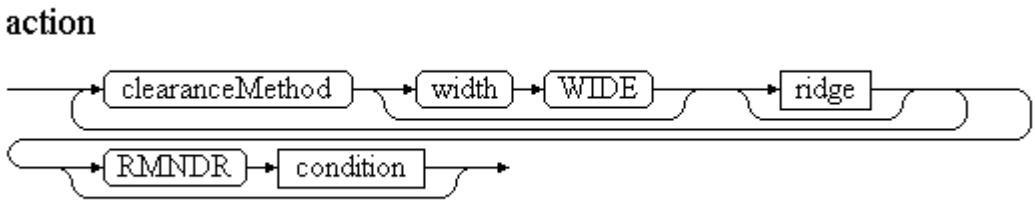
Source: In this section, constrained to be drift.

TABLE 54.9
Drift Type

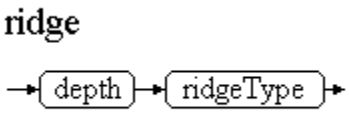
Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift

54.4 *AIXM Mapping and Translation Action(s)*

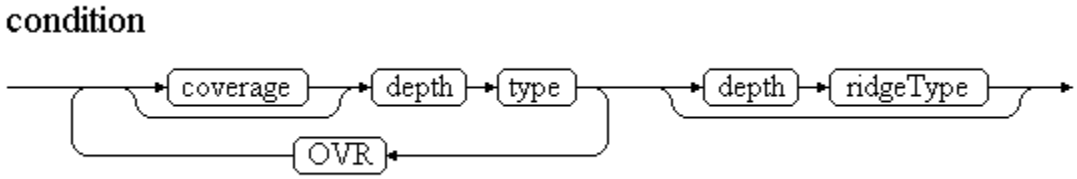
Action(s) – plowed, swept, sanded, deiced, etc.



Ridge – snowbank, berm and windrows



Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



54.4.1 Clearance Method [*clearanceMethod*]

Description: The method used to clear the surface contamination.

Source: User-selected (required with clearedWidth, ridgeType, ridgeDepth, and/or remaining conditions)

TABLE 54.10
Clearance Method

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ SurfaceContamination (extension)/ clearanceMethod (attribute)		
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ extension/ aim:clearanceMethod		
AIXM Mapping	Class: AIM Surface Contamination Extension		
Enumeration	AIM Extension: aim:CodeClearanceMethodType		
	AIXM	**Translations**	
	PLOWED	ICAO	PLOWED
		FAA	PLW
		Plain Text	plowed
	SANDED	ICAO	SANDED
		FAA	SA
		Plain Text	sanded

	SWEPT	ICAO	SWEPT
		FAA	SWEPT
		Plain Text	swept
	PATCHY SAND	ICAO	PATCHY SAND
		FAA	PTCHY SA
		Plain Text	patchy sand
	TREATED DEICED LIQUID	ICAO	DEICED LIQUID
		FAA	DEICED LIQUID
		Plain Text	deiced liquid
	TREATED DEICED SOLID	ICAO	DEICED SOLID
		FAA	DEICED SOLID
		Plain Text	deiced solid

54.4.2 Cleared Width [*clearedWidth*]

Description: Width of Taxiway cleared of contamination, if less than the total width.

Source: User-entered (optional)

TABLE 54.11
Cleared Width

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ TaxiwayContamination (extension)/ clearedWidth (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ extension/ aim:clearedWidth		
AIXM Mapping	Class: AIM Surface Contamination Extension		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

54.4.3 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 54.12
Drift Depth

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ depth
AIXM Mapping	Class: Ridge
Datatype	ValDepthType
Min inclusive	0

Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

54.4.4 Ridge Type (DRIFT) [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

TABLE 54.13
Drift Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift
	BERM	ICAO	
		FAA	BERM
		Plain Text	berm
	SNOWBANK	ICAO	SN BANKS
		FAA	SNBNK
		Plain Text	snowbank
	WINDROWS	ICAO	WINDROWS
		FAA	WINDROWS
		Plain Text	windrows

54.4.5 Remaining Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 54.14
Remainder Surface Coverage

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ proportion(attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ proportion		
AIXM Mapping	Class: TaxiwayContamination		
Enumeration	ValPercentType		
	AIXM	**Translations**	
	100	ICAO	…
		FAA	…

		Plain Text	Fully Covered
	50	Text NOTE (below)	
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ annotation/ note(attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant/ TaxiwayContamination/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	proportion	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy

54.4.6 Remaining Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 54.15
Remainder Depth of Coverage

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ depth		
AIXM Mapping	Class: TaxiwayContamination		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

54.4.7 Remaining Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 54.16
Remainder Layer Order

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ layer/ SurfaceContaminationLayer/ layerOrder
AIXM Mapping	SurfaceContaminationLayer

Datatype	NoSequenceType
Min inclusive	0

54.4.8 Remaining Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

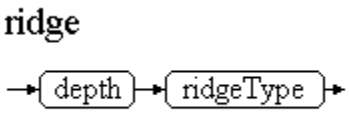
TABLE 54.17
Remainder Type of Surface Contamination

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLUSH
		Plain Text	Slush
	ICE	ICAO	ICE
		FAA	ICE
		Plain Text	Ice
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PACKED SN
		Plain Text	Packed Snow
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ROUGH ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LOOSE SN
		Plain Text	Loose Snow
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SN/ICE
		Plain Text	Snow and Ice
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WET SN

		Plain Text	Wet Snow
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding

54.5 AIXM Mapping and Translation Ridge

Ridge – snowbank, berm and windrows



54.5.1 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 54.18
Drift Depth

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ depth		
AIXM Mapping	Class: Ridge		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

54.5.2 Ridge Type (DRIFT) [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

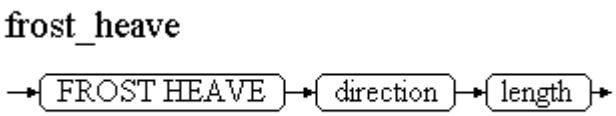
TABLE 54.19
Drift Type

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface

	Contamination/ Ridge (extension)/ ridgeType (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ criticalRidge/ Ridge/ extension/ aim:ridgeType		
AIXM Mapping	Class: AIM Extension Ridge		
Enumeration	AIM Extension CodeRidgeType		
	AIXM	**Translations**	
	DRIFTING_SNOW	ICAO	DRIFT
		FAA	DRFT
		Plain Text	drift

54.6 AIXM Mapping and Translation Frost Heave

Frost Heave



54.6.1 FROST HEAVE [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with direction or length)

TABLE 54.20
Frost Heave

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ layer/ SurfaceContaminationLayer/ type		
AIXM Mapping	Class: SurfaceContaminationLayer		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	OTHER:FROST_HEAVE	ICAO	FROST HEAVE
		FAA	FROST HEAVE
		Plain Text	Frost Heave

54.6.2 Frost Heave Direction [*cardinalDirection*]

Description Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 54.21
Cardinal Direction

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ cardinalDirection (attribute)
AIXM Element X Path	Taxiway/ timeSlice/ TaxiwayTimeSlice

	[interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ extension/ aim:cardinalDirection		
AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

54.6.3 Frost Heave Length [contaminantLength]

Description: Length of the contaminant.

Source: User-entered (optional)

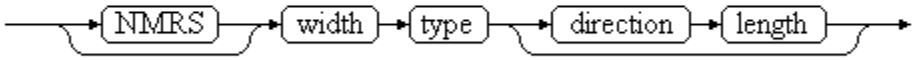
TABLE 54.22
Frost Heave Length

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Surface Contamination/ Surface Contamination Layer (extension)/ contaminantLength (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ extension/ aim:contaminantLength		
AIXM Mapping	Class: AIM Extension SurfaceContaminationLayer		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

54.7 AIXM Mapping and Translation Cracks/Ruts and Soft Edges

Cracks/Ruts

cracks_ruts



Soft Edges

soft_edges

54.7.1 NMRS [*numerousDefects*]

Description: A code indicating whether there are numerous cracks/ruts on the surface.

Source: User-selected (optional).

TABLE 54.23
Numerous

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ numerousDefects (attribute)		
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:numerousDefects		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	NMRS
		FAA	NMRS
		Plain Text	NMRS
	NO	ICAO	…
		FAA	…
		Plain Text	…

54.7.2 Width [*crackWidth*]

Description: Width of a surface Defect

Source: User-entered (required, with NMRS and crackType)

TABLE 54.24
Crack Width

Attribute	Value
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackWidth (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackWidth
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics
Datatype	ValDistanceType
Min inclusive	0
Enumeration	Units of Measure: 1 IN = 2.54 CM

	UomDistanceType	FAA	IN
		ICAO	CM

54.7.3 Type [*crackType*]

Description:

Source: User-selected (required with crackWidth and NMRS).

TABLE 54.25
Crack Type

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackType (attribute)		
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackType		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	AIM Extension: aim:crackType		
	AIXM	**Translations**	
	CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	cracks
	RUTS	ICAO	RUTS
		FAA	RUTS
		Plain Text	ruts

54.7.4 Direction [*crackDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 54.26
Cardinal Direction

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackDirection (attribute)		
AIXM Element X Path	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackDirection		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side

	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

54.7.5 Length [*crackLength*]

Description: Length of a surface Defect

Source: User-entered (optional)

TABLE 54.27
Crack Length

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ crackLength (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:crackLength		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

54.7.6 Soft Edges [*softEdges*]

Description: A code indicating whether there are soft edges on the surface.

Source: User-selected (optional).

TABLE 54.28
Soft Edges

Attribute	Value		
AIXM Path (UML)	AIXM Application Schemas /AIM/ AIM Features/ Airfield/ SurfaceCharacteristics (extension)/ softEdges (attribute)		
AIXM Element Xpath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ extension/ aim:softEdges		
AIXM Mapping	Class: AIM Extension SurfaceCharacteristics		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	SOFT EDGES
		FAA	SOFT EDGES

		Plain Text	Soft Edges
	NO	ICAO	…
		FAA	…
		Plain Text	…

54.8 Business Rules

54.8.1 Template Business Rules

Enforce required items in first (second, third) layer.

a. When *coverage1 (coverage2, coverage3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

b. When *coverage1 (coverage2, coverage3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

c. When *depth1 (depth2, depth3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

d. When *type1 (type2, type3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

Enforce range in first (second, third) layer.

e. When *depth1 (depth2, depth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the first (second, third) layer in the form (THN, 1/4, 1/2 or 1)."

f. When *depth1 (depth2, depth3)* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce range of the depth of the snowdrifts

g. When *depthOfDrift* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

h. When *depthOfDrift* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce required items in action(s) fields.

i. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

j. When *clearanceRidgeType1 (clearanceRidgeType2, clearanceRidgeType3)* and/or *clearanceRidgeDepth1 (clearanceDepthType2, clearanceDepthType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

k. When *clearanceFrictionEstimation (clearanceFrictionEstimation2, clearanceFrictionEstimation3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

l. When *remainderCoverage1 (remainderCoverage2, remainderCoverage3)* and/or *remainderDepth1 (remainderDepth2, remainderDepth3)* and/or *remainderType1 (remainderType2, remainderType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

m. When *clearanceMethod1* (*clearanceMethod2, clearanceMethod3*) is plowed, swept, plowed and swept, or plowed, swept and sanded and *width1* (*width2, width3*) equal to null then "Specify the

width of the cleared area and remainder if known. Note: plowed/swept is omitted when the entire surface has been plowed."

n. When *clearanceMethod1* is null and *clearanceMethod2* and/or *clearanceMethod3* is not null then "Specify Method-1 first."

o. When *clearanceMethod2* is null and *clearanceMethod3* is not null then "Specify Method-2 before specifying Method-3."

Enforce range in action(s) fields.

p. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* equal to 0 then "Specify a width greater then 0."

q. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* greater then *taxiwayWidth* then "Specify a width less then or equal to the taxiway width."

Enforce required items in ridge fields.

r. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* not equal to null and *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* equal to null then "Specify a ridge type."

s. When *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* not equal to null and *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* equal to null then "Specify a ridge depth."

Enforce range in ridge fields.

t. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in remainder fields.

u. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

v. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

w. When *remainderDepth1 (remainderDepth2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

x. When *remainderType1 (remainderType2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

y. When *remainderType1 (remainderType2)* not equal to null and (*clearanceMethod1* equal to null and *clearanceMethod2* and *clearanceMethod3* equal to null) then "Specify at least one clearance method."

Enforce range in remainder.

z. When *remainderDepth1 (remainderDepth2)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the remainder in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in frost heave fields.

aa. When *directionFrost* not equal to null and *sectionLengthFrost* equal to null then "Specify the length of movement area affected by frost heaves."

bb. When *sectionLengthFrost* not equal to null and *directionFrost* equal to null then "Specify a direction."

Enforce range in frost heave fields.

cc. When *sectionLengthFrost* not equal to null and *sectionLengthFrost* greater than *taxiwayLength* then "Specify a length less then or equal to the taxiway length."

Enforce required items in cracks/ruts fields.

dd. When *cracksRutsWidth* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *typeCracksRuts* equal to null then "Specify a type of cracks/ruts."

ee. When *typeCracksRuts* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* equal to null then "Specify the width of cracks/ruts."

ff. When *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* and/or *directionCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type/direction of the cracks/ruts."

gg. When *directionCracksRuts* not equal to null and *cracksRutsWidth* and/or *sectionLengthCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type of the cracks/ruts and/or the length of the section of movement area affected by the cracks/ruts."

Enforce range in frost heave fields.

hh. When *sectionLengthCracksRuts* not equal to null and *sectionLengthCracksRuts* greater than *TaxiwayLength* then "Specify a section length less then or equal to the Taxiway length."

Enforce required items in template.

ii. Set *startDate* equal to start immediately.

Other.

jj. Ensure that one of the following sections: Surface, Conditions, Action, Ridge, Frost Heave, Cracks/Ruts or Soft Edges are completed according to the above business rules before allowing the user to submit a NOTAM.

54.8.2 Policy Business Rules (from Order 7930.2M, section 5-1-4)

a. The term BARE is not to be used in NOTAMs.

b. Report the greatest depth measured.

c. Round off measurements to the next higher reporTABLE value.

d. Measurements are as follows:

THN (< ¼ ″), ¼″, ½″, 1″, 1+″ (reported as whole numbers), 35+″ (reported as multiples of feet only)

e. A surface not completely covered should be described as PTCHY. Do not use percentages.

f. Specify the width of the cleared area if less than the width of the taxiway.

g. Snowbanks are assumed to be at the edge of a movement area, or at the edge of the plowed/swept area.

h. Every snow NOTAM shall have the time that the conditions were observed by the airport operator as the last element of the NOTAM.

54.8.3 Data Encoding Business Rules

a. For entering designator and the xlink:href reference to the associated Airport use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

c. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

d. If the user enters Conditions and Actions with Remainder, the values entered in for remainder levels should restart at 1 over 2 over 3 as it will denote an independent section.

e. Taxiway section information (between point 1 and point 2) should be contained within an Annotation.

54.9 Sample AIXM Message

TWY A 1 IN PACKED SN


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <contaminant>
          <TaxiwayContamination gml:id="TWYC01">
            <depth uom="IN">1</depth>
            COVERAGE (PATCHY, FULLY_COVERED)
            <layer>
              <SurfaceContaminationLayer gml:id="SCL01">
                <layerOrder>1</layerOrder>
                <type>COMPACT_SNOW</type>
              </SurfaceContaminationLayer>
            </layer>
          </TaxiwayContamination>
        </contaminant>
```

```
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

TWY A PLW 75 WIDE RMDR PTCY THN ICE


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWY01_TS02_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <contaminant>
          <TaxiwayContamination gml:id="TWYC01">
            <clearedWidth uom="FT">75</clearedWidth>
              CLEARANCE TYPE
            <depth uom="IN">0.24</depth>
            COVERAGE (PATCHY, FULLY_COVERED)
            <layer>
              <SurfaceContaminationLayer gml:id="SCL01">
                <layerOrder>1</layerOrder>
                <type>ICE</type>
              </SurfaceContaminationLayer>
            </layer>
          </TaxiwayContamination>
        </contaminant>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
```

```
            <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
              <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <associatedTaxiway xlink:href="#TWY01"/>
          <extent>
            <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
              <gml:patches>
                <gml:PolygonPatch>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:PolygonPatch>
              </gml:patches>
            </ElevatedSurface>
          </extent>
        </TaxiwayElementTimeSlice>
      </timeSlice>
    </TaxiwayElement>
  </notamMessage:hasMember>
  <notamMessage:hasMember>
    <AirportHeliport gml:id="ACY">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
      <timeSlice>
        <AirportHeliportTimeSlice gml:id="ACY_TS01">
          <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>ACY</designator>
          <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
          <locationIndicatorICAO>KACY</locationIndicatorICAO>
          <ARP>
            <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
              <gml:pos>39.27 -74.34</gml:pos>
            </ElevatedPoint>
          </ARP>
        </AirportHeliportTimeSlice>
      </timeSlice>
    </AirportHeliport>
  </notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


54.10 Translation Templates

54.10.1 FAA

TWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceFrictionEstimation1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE**

clearanceRidgeDepth3 clearanceRidgeType3 **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *remainderFrictionEstimation ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES**

54.10.2 ICAO E Line

TWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES**

54.10.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Taxiway: *designator*|**ALL**

CONDITION(S)
coverage1 depth1 type1
over *coverage2 depth2 type2*
over *coverage3 depth3 type3*
Drifts: *depthOfDrift*

CLEARANCE METHOD(S)
clearanceMethod1
clearanceWidth1 **WIDE**
Ridge: *clearanceRidgeDepth1 clearanceRidgeType1*
clearanceMethod2
clearanceWidth2 **WIDE**
Ridge: *clearanceRidgeDepth2 clearanceRidgeType2*
clearanceMethod3
clearanceWidth3 **WIDE**
Ridge: *clearanceRidgeDepth3 clearanceRidgeType3*
Remainder: *remainderCoverage1 remainderDepth1 remainderType1*
over *remainderCoverage2 remainderDepth2 remainderType2*
Drifts: *remainderDepthOfDrift*

RIDGE
ridgeDepth ridgeType

CRACKS/RUTS
cracksRutsWidth **CRACKS|RUTS**
Direction: *directionCracksRuts*

Length of Surface: *sectionLengthCracksRuts*

FROST HEAVES
Direction: *directionFrost*
Length of Surface: *sectionLengthFrost*

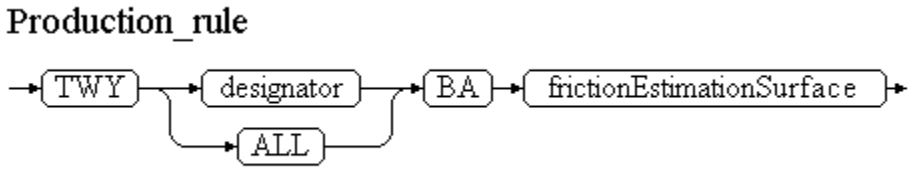
SOFT EDGES
Present|Not Present

54.11 Additional Analysis

See Runway – Surface Conditions for the additional analysis. Taxiway – Surface Condition should be implemented similarly.

55 Taxiway – Braking Action

This scenario is used to report the braking action on a Taxiway.



55.1 Example NOTAMs

1. !BRW 09/072 BRW TWY B PTCHY THN PACKED SN TAP MU 37 BA FAIR WEF 0909281700
2. !OME 01/034 OME TWY ALL BA POOR WEF 1001032107
3. !PSM 12/145 PSM TWY ALL TWY BA POOR

Source: US NOTAM Repository

55.2 AIXM Mapping and Translation General

55.2.1 Scenario Details

TABLE 55.1

Attribute	Value
Description	Specify the surface conditions for a taxiway.
Feature Type Id	Taxiway
Feature XPath	aixm:Taxiway
AIXM Mapping Diagram	Surface Contamination
NOTAM lifespan	24 Hours
Start ASAP	Yes

55.2.2 Designator [*designator*] – Taxiway

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (required).

TABLE 55.2
Taxiway Designator

Attribute	Value
AIXM Path (UML)	Taxiway (feature)/ designator (attribute)
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation SNAPSHOT]/ designator
AIXM Mapping	Class: Taxiway
Min length	1
Max length	16
Enumeration	TextDesignatorType

55.2.3 Taxiway Element [*extent*]

Description: An AIXM elevated surface derived from [gml:point], which extends Surface with properties that represent the vertical position.

Source: User-selected from baseline data (optional).

TABLE 55.3
Taxiway Geometry

Attribute	Value
AIXM Path (UML)	TaxiwayElement (feature)/ ElevatedSurface (object)
AIXM Element XPath	TaxiwayElement/ timeSlice/ TaxiwayElementTimeSlice [interpretation TEMPDELTA]/ extent/ ElevatedSurface/gml:patches/ gml:polygonPatch/ gml:exterior/ gml:LinearRing/ gml:pos
AIXM Mapping	ElevatedSurface
Datatype	GML – decimal

55.2.4 Braking Action [*frictionEstimation*]

Description: A qualitative estimate of the friction.

Source: User-selected (required).

TABLE 55.4
Braking Action

Attribute	Value		
AIXM Path (UML)	Taxiway (feature)/ TaxiwayContamination (object)/ SurfaceContamination (object)/ frictionEstimation (attribute)		
AIXM Element XPath	Taxiway/ timeSlice/ TaxiwayTimeSlice [interpretation: TEMPDELTA]/ contaminant / TaxiwayContamination/ frictionEstimation		
AIXM Mapping	Class: SurfaceContamination		
Enumeration	CodeFrictionEstimateType		
	AIXM	**Translations**	
	OTHER:FAIR	ICAO	FAIR
		FAA	FAIR
		Plain Text	fair
	POOR	ICAO	POOR
		FAA	POOR
		Plain Text	poor
	OTHER:NIL	ICAO	NIL
		FAA	NIL
		Plain Text	nil

55.3 Business Rules

55.3.1 Template Business Rules

a. When *designator* equals to null, then "Select a designator."

b. When *frictionEstimation* equals to null, then "Select the Braking Action."

55.3.2 Policy Business Rules (from AC 150/5200-28D)

a. When reported by airport management, braking action is described as "fair," "poor," and "nil." Classify braking action according to the most critical term used.

b. "Good" braking action is not a reportable condition.

c. When reporting braking action, do not give the type of vehicle making the report.

55.3.3 Data Encoding Business Rules

a. For entering designator and the xlink:href reference to the associated Airport use a TimeSlice of type SNAPSHOT or identified by UUID in a TimeSlice of type TEMPDELTA.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

c. Taxiway section information (between point 1 and point 2) should be contained within an Annotation.

55.4 Sample AIXM Message

TWY A 1 BA POOR


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1 ./AIXM_Features.xsd
http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd" gml:id="FNS-Message"
xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message" xmlns:aixm="http://www.aixm.aero/schema/5.1"
xmlns:gco="http://www.isotc211.org/2005/gco" xmlns:gmd="http://www.isotc211.org/2005/gmd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:gml="http://www.opengis.net/gml/3.2" xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <Taxiway gml:id="TWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWY01_TS01_TI01">
            <gml:timePosition>2010-01-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>A</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </TaxiwayTimeSlice>
    </timeSlice>
    <timeSlice>
      <TaxiwayTimeSlice gml:id="TWY01_TS02">
        <gml:validTime>
          <gml:TimePeriod gml:id="TWY01_TS02_TP01">
            <gml:beginPosition>2010-01-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-01-09T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>5</sequenceNumber>
        <contaminant>
          <TaxiwayContamination gml:id="TWYC01">
            <frictionEstimation>POOR</frictionEstimation>
          </TaxiwayContamination>
        </contaminant>
      </TaxiwayTimeSlice>
    </timeSlice>
  </Taxiway>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <TaxiwayElement gml:id="TWYEL01">
```

```
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <TaxiwayElementTimeSlice gml:id="TWYEL01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="TWYEL01_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <associatedTaxiway xlink:href="#TWY01"/>
        <extent>
          <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:LinearRing>
                    <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
                  </gml:LinearRing>
                </gml:exterior>
              </gml:PolygonPatch>
            </gml:patches>
          </ElevatedSurface>
        </extent>
      </TaxiwayElementTimeSlice>
    </timeSlice>
  </TaxiwayElement>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
        <gml:TimeInstant gml:id="ACY_TI01">
          <gml:timePosition>2010-01-07T09:00:00</gml:timePosition>
        </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

55.5 Translation Templates

55.5.1 FAA

TWY *designator* **BA** *frictionEstimationSurface*

55.5.2 ICAO E Line

TWY *designator* **BA** *frictionEstimationSurface* Plain Language

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Taxiway: *designator*

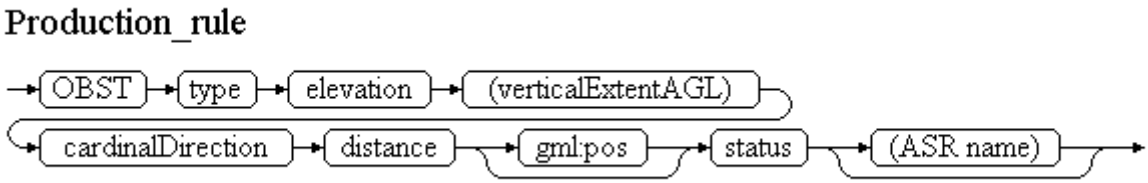
Braking Action: *clearanceFrictionEstimation*

55.6 Additional Analysis

None.

56 Obstruction - Permanent Obstacle Light Status

Specify that a structure has a light out of service



56.1 Example NOTAMs

1. !ACY 07/037 ACY OBST TOWER 295 (235 AGL) 3.26 NNW LGTS OTS (ASR 1048333) TIL 0908022251
2. !ACY 07/033 ACY OBST CRANE 120 (60 AGL) .8 S (3926N07434W) LGTS OTS WEF 0907161200-0907162000
3. !ACY 03/004 ACY OBST TOWER 395 (390 AGL) 5.00 SE LGTS OTS (ASR 1031208) TIL 1003170115

Source: US NOTAM Repository

56.2 AIXM Mapping and Translation

56.2.1 Scenario Details

TABLE 56.1

Attribute	Value
Description	Specify details of an Obstacle Light Status
Maps to Keyword	OBST
Feature Type Id	Vertical Structure
Feature XPath	aixm:VerticalStructure
AIXM Mapping Diagram	Obstacle/Vertical Structures
NOTAM lifespan	15 days
Start ASAP	Yes

56.2.2 Name [*name*]

Description: The name (ASN Number) of the vertical structure, if applicable.

Source: User-selected (ASN Number from list of feature designators).

TABLE 56.2
ASN Number

Attribute	Value
AIXM Path (UML)	VerticalStructure(feature)/ name(attribute)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice [interpretation SNAPSHOT]/ name
AIXM Mapping	Class: VerticalStructure
Type	TextNameType
Min length	1
Max length	60

Baseline Data Source	ASN Number

56.2.3 ASR Number [*designator*]

Description: An alphanumeric code by which the structure is identified locally.
Source: Baseline Data

TABLE 56.3
ASR Number

Attribute	Value
AIXM Path (UML)	VerticalStructure(feature)/ VerticalSturcturePart(object)/ designator(attribute)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice [interpretation SNAPSHOT]/ part/ VerticalStructurePart/ designator
AIXM Mapping	Class: VerticalStructurePart
Type	TextDesignatorType
Min length	1
Max length	16

56.2.4 Type [*type*]

Description: A code indicating the type of vertical structure, such as building, tower, cable, etc.
Source: Baseline data.

TABLE 56.4
Obstacle Type

Attribute	Value		
AIXM Path (UML)	VerticalStructure(feature) – type (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ type		
AIXM Mapping	Class: VerticalStructure		
Enumeration	CodeVerticalStructureType		
	AIXM	**Translations**	
	ANTENNA	ICAO	ANTENNA
		FAA	ANTENNA
		Plain Text	Antenna
	TOWER	ICAO	TOWER
		FAA	TOWER
		Plain Text	Tower
	CRANE	ICAO	CRANE
		FAA	CRANE
		Plain Text	Crane
	BUILDING	ICAO	BLDG
		FAA	BLDG
		Plain Text	Building
	RIG	ICAO	RIG
		FAA	RIG
		Plain Text	Rig
	STACK	ICAO	STACK
		FAA	STACK
		Plain Text	Stack
	BRIDGE	ICAO	BRIDGE
		FAA	BRIDGE
		Plain Text	Bridge
	CONTROL_TOWER	ICAO	CONTROL TOWER

		FAA	CONTROL TOWER
		Plain Text	Control Tower
	DOME	ICAO	DOME
		FAA	DOME
		Plain Text	Dome
	GRAIN_ELEVATOR	ICAO	SILO
		FAA	SILO
		Plain Text	Silo
	NATURAL_HIGHPOINT	ICAO	HILL
		FAA	HILL
		Plain Text	Hill
	POLE	ICAO	POLE
		FAA	POLE
		Plain Text	Pole
	TRANSMISSION_LINE	ICAO	POWER LINE
		FAA	POWER LINE
		Plain Text	Power Line
	TREE	ICAO	TREE
		FAA	TREE
		Plain Text	Tree
	WATERTOWER	ICAO	WATERTOWER
		FAA	WATERTOWER
		Plain Text	Water Tower
	WINDMILL	ICAO	WIND TURBINE
		FAA	WIND TURBINE
		Plain Text	Wind turbine
	WINDMILL_FARM	ICAO	WIND TURBINE FARM
		FAA	WIND TURBINE FARM
		Plain Text	Wind turbine farm

56.2.5 Height (AGL) [*verticalExtent*]

Description: The extent of the vertical structure part.

Source: Baseline data.

TABLE 56.5
Height AGL

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ VerticalStructurePart (object)/ verticalExtent (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/verticalExtent		
AIXM Mapping	Class: VerticalStructurePart		
Datatype	ValDistanceType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 FT = 0.3048 M		
Enumeration	UomDistanceType	FAA	FT
		ICAO	M
		Plain Text	Feet

56.2.6 Height (MSL) [*elevation*]

Description: The elevation (distance from Mean Sea Level) at the top of the obstacle.

Source: Baseline data.

TABLE 56.6
Elevation

Attribute	Value		
AIXM Path (UML)	VerticalStructure(feature)/ VerticalStructurePart (object)/ VerticalSturcturePartGeometry (choice)/ ElevatedSurface (object)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/horizontalProjection_location/ ElevatedPoint/ elevation		
AIXM Mapping	Class: ElevatedSurface		
Datatype	ValDistanceVerticalType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 FT = 0.3048 M		
Enumeration	UomDistanceType	FAA	FT
		ICAO	M
		Plain Text	Feet

56.2.7 Distance and Direction [*ARP*]

Description: An AIXM Point derived from GM_Point that includes properties for describing a point with elevation and vertical extent. Used in obstacles, navaids, etc.

Source: Baseline data.

TABLE 56.7
Airport ARP

Attribute	Value
AIXM Path (UML)	AirportHeliport(feature)/ Elevated Point(object)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ ARP/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal

NOTE: *GML uses decimal format for the latitude longitude. The NOTAM should read in degrees minutes seconds format.*

TABLE 56.8
Obstacle location

Attribute	Value
AIXM Path (UML)	VerticalStructure/ VerticalStructurePart (object)/ VerticalSturcturePartGeometry (choice)/ ElevatedSurface (object)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/horizontalProjection_location/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal
Calculated Value	distance direction = GML (VerticalStructure) relative to GML (Airport)

NOTE: *All obstacles that are within 5SM (4.3NM) of the Airport boundaries should be included for the airport. If the obstacle is greater than 5 statute miles from the Airport ARP, then the series letter will change.*

56.2.8 Status [operationalStatus]

Description: A code indicating the operational status of the lighting. For example, serviceable, unserviceable, work in progress, etc.

Source: User-selected when choosing the event specification.

TABLE 56.9
Obstacle Lighting Operational Status

Attribute	Value		
AIXM Path (UML)	VerticalStructure(feature)/ VerticalStructureLightingStatus(object)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ lightingAvailability/ VerticalStructureLightingStatus/ status		
AIXM Mapping	Class: VerticalStructureLightingStatus		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	LGTS OUT OF SERVICE
		FAA	LGTS OTS
		Plain Text	Lights Out of service

56.3 Q Codes and Series

TABLE 56.10
QCodes for Obstacle Lights Out of Service

AIXM Code	Q Code	
UNSERVICEABLE	Q Code	QOLAS
	Scope	AE
	Traffic	IV
	Purpose	NBO
	Series	A (if within 5 SM of Airport ARP)
		K (if on Airport Property but outside 5 SM of Airport ARP)

56.4 Business Rules

56.4.1 Template Business Rules

a. The baseline data must adhere to the NOTAM format once the user selects the obstacle and event specification.

b. The ASR number must be displayed if available.

c. The latitude and longitude must be entered in degree, minute, second format.

d. For the issued NOTAM, either an ASR Number or the coordinates (degree, minute, second format) of the structure must be displayed.

56.4.2 Policy Business Rules

a. The NOTAM must automatically expire within 15 days. It may be replaced if the condition is not repaired within 15 days.

b. The baseline data must be populated with all obstacles within 5 SM (4.3 NM) of the Airport ARP.

c. For obstacles on airport property that are farther than 5SM from the Airport ARP, the series letter should be K. (Donna McCord, to comply with future policy).

56.4.3 Data Encoding Business Rules

a. For verticalStructure, the SNAPSHOT should contain the ASN Number of the obstacle, the type of structure, the baseline lighting expectation, the height of the obstruction in AGL (verticalExtent), the calculated value for the height in MSL (verticalExtent plus elevation), the ASN number, if applicable, and a tag that points to the nearest airport.

b. The AIXM Message need only to have the coordinates of the verticalStructure and of the Airport. The direction and distance can be calculated by these coordinates.

c. For verticalStructure, the TEMPDELTA should contain the status of the lights.

d. The latitude and longitude must be converted to decimal for the AIXM Message.

56.5 Sample AIXM Message

Sample NOTAM Message: TOWER 187 (120 AGL) 12 ESE LGTS OTS (ASR1058102)


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ObstacleArea gml:id="OA01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ObstacleAreaTimeSlice gml:id="OA01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="VS_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <reference_ownerAirport xlink:href="ACY01"/>
        <obstacle xlink:href="VS01"/>
      </ObstacleAreaTimeSlice>
    </timeSlice>
  </ObstacleArea>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <VerticalStructure gml:id="VS01">
    <timeSlice>
      <VerticalStructureTimeSlice gml:id="VS01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="VS_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <name>ASNNUMBER</name>
        <type>TOWER</type>
        <lighted>YES</lighted>
          Located near (Point to Airport xlink:href)
        <part>
          <VerticalStructurePart gml:id="VSP01">
```

```
            <verticalExtent uom="FT">120</verticalExtent>
            <designator>ASR1058102</designator>
            <horizontalProjection_location>
              <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
                <gml:pos>38 -118</gml:pos>
                <elevation  uom="FT">67</elevation>
              </ElevatedPoint>
            </horizontalProjection_location>
          </VerticalStructurePart>
        </part>
      </VerticalStructureTimeSlice>
    </timeSlice>
  </VerticalStructure>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <VerticalStructure gml:id="VS02">
    <timeSlice>
      <VerticalStructureTimeSlice gml:id="VS02_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="VS02_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-22T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>6</sequenceNumber>
        <lightingAvailability>
          <VerticalStructureLightingStatus gml:id="VSLS01">
            <status>UNSERVICEABLE</status>
          </VerticalStructureLightingStatus>
        </lightingAvailability>
      </VerticalStructureTimeSlice>
    </timeSlice>
  </VerticalStructure>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP02">
            <gml:pos>38 -119</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

56.6 Translation Templates

56.6.1 FAA

OBST *type elevation (verticalExtent AGL) distance direction status (designator)* **WEF**

56.6.2 ICAO E Line

OBST *type elevation (verticalExtent AGL) distance direction status (designator)* **WEF**

56.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

[Schedule: *recurring schedule***]**

Obstacle Lights Out of Service

Affected Obstacle: *type (designator)*

Direction from Nearest Airport: *distance direction*

Height: *elevation* MSL *(verticalExtent AGL)*

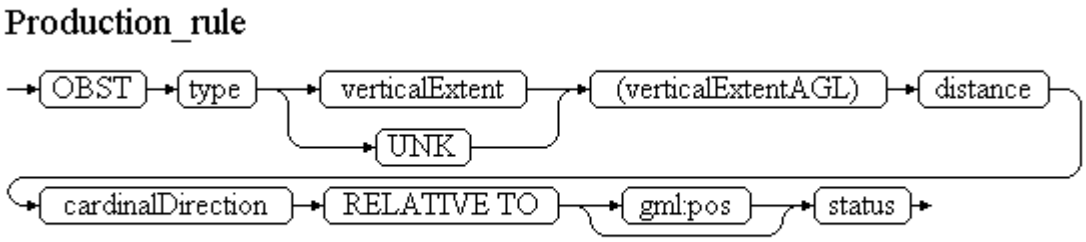
Status: *status*

56.7 Additional Analysis

Nearly all obstruction NOTAMs are for *type* = TOWER. Other obstacles listed in OBST NOTAMs for 2009 – 2010 are crane, stack, antenna, rig, moored balloon, rig, tree, wind turbine farm, ship, silo, power line, hill, trailer, beacon, and pole. Those that are not included in the drop down are log pile, rollercoaster, and ship mast. These are so infrequent that they should be entered using free text.

57 Obstruction – Temporary Obstacle Status

Specify the status of a temporary obstacle.



57.1 Example NOTAMs

1. !ACY 11/044 ACY OBST CRANE 100 (50 AGL) 1.2 ESE (3926/07433) WEF 0911251300-0911251700
2. !PIE CLW OBST CRANE 195 (125 AGL) .25 NE (2755N08241W) TIL 0711032000
3. !FTW 10/430 9F9 OBST DRILL RIG 952 (190 AGL) .05 W (3262N/9735W) TIL 3711162359

Source: US NOTAM Repository

57.2 AIXM Mapping and Translation

57.2.1 Scenario Details

TABLE 57.1

Attribute	Value
Description	Specify details of a Tower Light Status
Maps to Keyword	OBST
Feature Type Id	Vertical Structure
Feature XPath	aixm:VerticalStructure
AIXM Mapping Diagram	Obstacle/Vertical Structures
NOTAM lifespan	
Start ASAP	

57.2.2 Type [*type*]

Description: A code indicating the type of vertical structure, such as building, tower, cable, etc.

Source: User-selected (required)

TABLE 57.2
Obstacle Type

Attribute	Value
AIXM Path (UML)	VerticalStructure (feature) – type (attribute)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ type
AIXM Mapping	Class: VerticalStructure

Enumeration	CodeVerticalStructureType		
	AIXM	**Translations**	
	ANTENNA	ICAO	ANTENNA
		FAA	ANTENNA
		Plain Text	Antenna
	TOWER	ICAO	TOWER
		FAA	TOWER
		Plain Text	Tower
	CRANE	ICAO	CRANE
		FAA	CRANE
		Plain Text	Crane
	BUILDING	ICAO	BLDG
		FAA	BLDG
		Plain Text	Building
	RIG	ICAO	RIG
		FAA	RIG
		Plain Text	Rig
	STACK	ICAO	STACK
		FAA	STACK
		Plain Text	Stack
	BRIDGE	ICAO	BRIDGE
		FAA	BRIDGE
		Plain Text	Bridge
	CONTROL_TOWER	ICAO	CONTROL TOWER
		FAA	CONTROL TOWER
		Plain Text	Control Tower
	DOME	ICAO	DOME
		FAA	DOME
		Plain Text	Dome
	GRAIN_ELEVATOR	ICAO	GRAIN ELEVATOR
		FAA	SILO
		Plain Text	Silo
	NATURAL_HIGHPOINT	ICAO	NATURAL HIGHPOINT
		FAA	HILL
		Plain Text	Hill
	POLE	ICAO	POLE
		FAA	POLE
		Plain Text	Pole
	TRANSMISSION_LINE	ICAO	TRANSMISSION LINE
		FAA	POWER LINE
		Plain Text	Power Line
	TREE	ICAO	TREE
		FAA	TREE
		Plain Text	Tree
	WATERTOWER	ICAO	WATERTOWER
		FAA	WATERTOWER
		Plain Text	Water Tower
	WINDMILL	ICAO	WINDMILL
		FAA	WIND TURBINE
		Plain Text	Wind turbine
	WINDMILL_FARM	ICAO	WINDMILL FARM
		FAA	WIND TURBINE FARM
		Plain Text	Wind turbine farm
	OTHER:SATELLITE_DISH	ICAO	SATELLITE DISH
		FAA	SATELLITE DISH
		Plain Text	Satellite Dish

57.2.3 Height (AGL) [*verticalExtent*]

Description: The extent of the vertical structure part.

Source: Baseline data.

TABLE 57.3
Height AGL

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ VerticalStructurePart (object)/ verticalExtent (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/verticalExtent		
AIXM Mapping	Class: VerticalStructurePart		
Datatype	ValDistanceType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 FT = 0.3048 M		
Enumeration	UomDistanceType	FAA	FT
		ICAO	M
		Plain Text	Feet

57.2.4 Height (MSL) [*elevation*]

Description: The elevation (distance from Mean Sea Level) at the top of the obstacle.

Source: Baseline data.

TABLE 57.4
Elevation

Attribute	Value		
AIXM Path (UML)	VerticalStructure(feature)/ VerticalStructurePart (object)/ VerticalSturcturePartGeometry (choice)/ ElevatedSurface (object)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/horizontalProjection_location/ ElevatedPoint/ elevation		
AIXM Mapping	Class: ElevatedSurface		
Datatype	ValDistanceVerticalType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 FT = 0.3048 M		
Enumeration	UomDistanceType	FAA	FT
		ICAO	M
		Plain Text	Feet

57.2.5 Distance and Direction [*ARP*]

Description: An AIXM Point derived from GM_Point that includes properties for describing a point with elevation and vertical extent. Used in obstacles, navaids, etc.

Source: User-entered coordinates (optional)

TABLE 57.5
Airport ARP

Attribute	Value
AIXM Path (UML)	AirportHeliport(feature)/ Elevated Point(object)
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ ARP/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal

NOTE: *GML uses decimal format for the latitude longitude. The NOTAM should read in degrees minutes seconds format.*

TABLE 57.6
Obstacle location

Attribute	Value
AIXM Path (UML)	VerticalStructure/ VerticalStructurePart (object)/ VerticalSturcturePartGeometry (choice)/ ElevatedSurface (object)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/horizontalProjection_location/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal
Calculated Value	distance direction = GML (VerticalStructure) relative to GML (Airport)

NOTE: *All obstacles that are within 5SM (4.3NM) of the Airport boundaries should be included for the airport. If the obstacle is greater than 5 statute miles from the Airport ARP, then the series letter will change.*

57.2.6 Distance [*note*]

Description: Distance of the obstacle from the Aerodrome

Source: User-entered (optional, auto-populated if the user enters obstacle coordinates).

TABLE 57.7
Distance (note)

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ annotation/ note (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	Units of Measure: 1 FT = 0.3048 M		
	AIXM	**Translations**	
	<*value*> M	ICAO	<*value*> M
		FAA	<*value*>
		Plain Text	<*value*> MILES

57.2.7 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional, auto-populated if the user enters obstacle coordinates).

TABLE 57.8 Warning Direction (note)

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ annotation/ note (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	N SIDE	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	North Side
	NE SIDE	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	Northeast Side
	E SIDE	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	East Side
	SE SIDE	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	Southeast Side
	S SIDE	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	South Side
	SW SIDE	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	Southwest Side
	W SIDE	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	West Side
	NW SIDE	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	Northwest Side

57.2.8 Additional Location Description: [*note*]

Description: The text in a note.

Source: User-entered, selected from baseline data (optional).

TABLE 57.9
Relative Location to Approach End Runway

Attribute	Value
AIXM Path (UML)	VerticalStructure (feature)/ annotation/ note (attribute)
AIXM Element XPath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/

	LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	16		
Description	propertyName	operationalStatus	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	AIXM	**Translations**	
	APCH END RWY <*designator*>	ICAO	APCH END RWY <*designator*>
		FAA	APCH END RWY <*designator*>
		Plain Text	Approach End Runway <*designator*>

57.2.9 Status [operationalStatus]

Description: A code indicating the operational status of the lighting. For example, serviceable, unserviceable, work in progress, etc.

Source: User-selected (required).

TABLE 57.10
Temporary Obstacle Operational Status

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ VerticalStructureLightingStatus (object)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ lightingAvailability/ VerticalStructureLightingStatus/ status		
AIXM Mapping	Class: VerticalStructureLightingStatus		
Enumeration	CodeStatusOperationsType		
	AIXM	**Translations**	
	UNSERVICEABLE	ICAO	LGTS OUT OF SERVICE
		FAA	LGTS OTS
		Plain Text	Lights Out of Service
	DOWNGRADED	ICAO	UNLIGHTED
		FAA	UNLGTD
		Plain Text	Unlighted
	DOWNGRADED	ICAO	DAY LIGHT
		FAA	DALGT
		Plain Text	Day Light
	DOWNGRADED	ICAO	FLAGGED/LIGHTED
		FAA	FLAGGED/LGTD
		Plain Text	Flagged and Lighted
	DOWNGRADED	ICAO	FLAGGED/ UNLIGHTED
		FAA	FLAGGED/UNLGTD
		Plain Text	Flagged and Unlighted
	NEW (leave status blank)	ICAO	…
		FAA	…
		Plain Text	…

57.2.10 gml Coordinates [*gml:pos*]

Description: An AIXM Point derived from GM_Point that includes properties for describing a point with elevation and vertical extent. Used in obstacles, navaids, etc.

Source: User-provided (either in distance/direction or gml coordinates).

TABLE 57.11
Coordinates

Attribute	Value
AIXM Path (UML)	VerticalStructure (feature)/ VerticalStructurePart (object)/ VerticalSturcturePartGeometry (choice)/ ElevatedSurface (object)
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ part/ VerticalStructurePart/horizontalProjection_location/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal

57.3 Q Codes Series

TABLE 57.12
QCodes for Temporary Obstacles

AIXM Code	Q Code	
Lights Out of Service	Q Code	QOLAS
	Scope	AE
	Traffic	IV
	Purpose	NBOM
	Series	A (if within 5 SM of Airport ARP)
		K (if on Airport Property but outside 5 SM of Airport ARP)
New	Q Code	QOBCE
	Scope	AE
	Traffic	IV
	Purpose	NBOM
	Series	A (if within 5 SM of Airport ARP)
		K (if on Airport Property but outside 5 SM of Airport ARP)

57.4 Business Rules

57.4.1 Template Business Rules

a. When *type* equals null, then "Select a type."

b. When *(height AGL)* equals null, then "Enter a height."

c. If (*height MSL*) equals null, then the issued NOTAM should have UNK in the place of (*height MSL*).

d. When *status* equals null, then "Select a status."

e. When *coordinates*, *distance*, *and direction* equals null, then "Enter a location."

f. When *coordinates* are entered, automatically calculate *distance and direction* relative to the airport ARP point.

g. When *coordinates* are not entered, calculate *coordinates* from the *distance and direction* for the AIXM message, but do not display in the FAA NOTAM. Add *distance and direction*.

h. The latitude and longitude must be entered in degree, minute, second format. (Seconds are optional).

i. *Distance* should be a number greater than 0 and less than 10 with up to 2 decimal placeholders.

57.4.2 Policy Business Rules

a. If the status is "Lights Out of Service", then the NOTAM should have an expiration date of 15 days.

b. The baseline data must be populated with all obstacles within 5SM (4.3NM) of the Airport ARP.

c. For obstacles on airport property, that are farther than 5SM from the Airport ARP, the series letter should be K. (Donna McCord, to comply with future policy).

57.4.3 Data Encoding Business Rules

a. For verticalStructure, all of the information should appear in the TEMPDELTA.

b. The AIXM Message need only to have the coordinates of the verticalStructure and of the Airport. The direction and distance can be calculated by these coordinates.

c. The latitude and longitude must be converted to decimal for the AIXM Message.

57.5 Sample AIXM Message

Sample NOTAM Message: CRANE 187 (120 AGL) 12 ESE (38N/118W) LGTS OTS


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ObstacleArea gml:id="OA01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ObstacleAreaTimeSlice gml:id="OA01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="OA01_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <reference_ownerAirport xlink:href="ACY01"/>
        <obstacle xlink:href="VS01"/>
      </ObstacleAreaTimeSlice>
```

```
    </timeSlice>
  </ObstacleArea>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <VerticalStructure gml:id="VS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <VerticalStructureTimeSlice gml:id="VS01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="VS02_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>8</sequenceNumber>
        <type>CRANE</type>
          Located near (Point to Airport xlink:href)
        <part>
          <VerticalStructurePart gml:id="VSP01">
            <verticalExtent uom="FT">120</verticalExtent>
            <horizontalProjection_location>
              <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
                    <gml:pos>38 -118</gml:pos>
                    <elevation  uom="FT">67</elevation>
              </ElevatedPoint>
            </horizontalProjection_location>
          </VerticalStructurePart>
        </part>
        <lightingAvailability>
          <VerticalStructureLightingStatus gml:id="VSLS01">
            <status>UNSERVICEABLE</status>
          </VerticalStructureLightingStatus>
        </lightingAvailability>
      </VerticalStructureTimeSlice>
    </timeSlice>
  </VerticalStructure>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP02">
            <gml:pos>38 -119</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
```

```
</notamMessage:AIXMBasicMessage>
```


Sample NOTAM Message: CRANE UNK (120 AGL) 12 ESE


```
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <VerticalStructure gml:id="VS01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <VerticalStructureTimeSlice gml:id="VS01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="VS02_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>8</sequenceNumber>
        <type>CRANE</type>
          Located near (Point to Airport xlink:href)
        <part>
          <VerticalStructurePart gml:id="VSP01">
            <verticalExtent uom="FT">120</verticalExtent>
            <horizontalProjection_location>
              <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
                <gml:pos>38 -118</gml:pos>
              </ElevatedPoint>
            </horizontalProjection_location>
          </VerticalStructurePart>
        </part>
        <annotation>
        <Note gml:id="NOTE01">
          <translatedNote>
            <LinguisticNote gml:id="LN01">
        <note>1.25 SW</note>
            </LinguisticNote>
          </translatedNote>
        </Note>
      </annotation>
      </VerticalStructureTimeSlice>
    </timeSlice>
  </VerticalStructure>
</notamMessage:hasMember>
<notamMessage:hasMember>
  <AirportHeliport gml:id="ACY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="ACY_TS01_TI01">
            <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
```

```
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP02">
            <gml:pos>38 -119</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


57.6 Translation Templates

57.6.1 FAA

OBST *type elevation+verticalExtent (verticalExtent AGL)* distance direction [*coordinates*] [*status*]
WEF

57.6.2 ICAO E Line

OBST *type elevation+verticalExtent (verticalExtent AGL)* distance direction [*coordinates*] [*status*]
WEF

57.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

[Schedule: *recurring schedule***]**

Obstacle

Affected Obstacle: *type*

Direction from Airport: distance direction *(coordinates)*

Height: *elevation+verticalExtent* MSL *(verticalExtent AGL)*

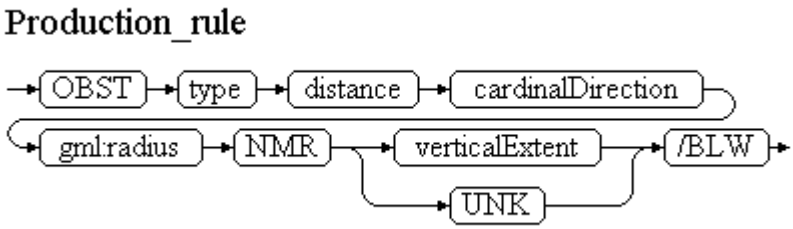
Status: *status*

57.7 Additional Analysis

None.

58 Obstruction – Moored Balloon or Kite Obstacle

Specify the status of a Moored Balloon or Kite obstacle.



58.1 Example NOTAMs

1. !LAX 07/039 LAX OBST MOORED BALLOON 1 NMR LAX123007 1100/BLW 0100-0500 DLY WEF 0907090100-0907100500
2. !DCA 05/241 DCA OBST MOORED BALLOON 9 NW 2 NMR 800/BLW TIL 0906182359
3. !SJT SJT OBST MOORED BALLOON 1 NMR SJT095018 510/BLW WEF
4. !SJT SJT OBST MOORED BALLOON 30 NE 1 NMR 610/BLW TIL 0710271700 07092514000709261400
5. !OGG 11/052 OGG OBST KITE 1NMR OGG130022/22SE OGG 1000/BLW TIL 0811292359
6. !ABQ ABQ OBST KITE 1 NMR ABQ020002 505/BLW WEF 07100119000710012100

Source: US NOTAM Repository

58.2 AIXM Mapping and Translation

58.2.1 Scenario Details

TABLE 58.1

Attribute	Value
Description	Specify details of a Moored Balloon or Kite
Maps to Keyword	OBST
Feature Type Id	Vertical Structure
Feature XPath	aixm:VerticalStructure
AIXM Mapping Diagram	Obstacle/Vertical Structures
NOTAM lifespan	
Start ASAP	

58.2.2 Type [*type*]

Description: A code indicating the type of vertical structure, such as building, tower, cable, etc.

Source: User-selected (required).

TABLE 58.2
Obstacle Type

Attribute	Value
AIXM Path (UML)	VerticalStructure(feature)/ type (attribute)
AIXM Element XPath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ type

AIXM Mapping	Class: VerticalStructure		
Enumeration	CodeVerticalStructureType		
	AIXM	**Translations**	
	TETHERED_BALLOON	ICAO	MOORED BALLOON
		FAA	MOORED BALLOON
		Plain Text	Moored Balloon
	OTHER:KITE	ICAO	KITE
		FAA	KITE
		Plain Text	Kite

58.2.3 Distance [*note*]

Description: Distance of the obstacle from the Aerodrome

Source: User-entered (optional, auto-populated if the user enters obstacle coordinates).

TABLE 58.3
Distance (note)

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ annotation/ note (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
AIXM Mapping	Class: Note, LinguisticNote		
Min length	1		
Max length	10000		
Description	propertyName	type	
	purpose	DESCRIPTION	
Enumeration	TextNoteType		
	Units of Measure: 1 FT = 0.3048 M		
	AIXM	**Translations**	
	<*value*> M	ICAO	<*value*> M
		FAA	<*value*>
		Plain Text	<*value*> MILES

58.2.4 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional, auto-populated if the user enters obstacle coordinates).

TABLE 58.4
Warning Direction (note)

Attribute	Value	
AIXM Path (UML)	VerticalStructure (feature)/ annotation/ note (attribute)	
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation TEMPDELTA]/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
AIXM Mapping	Class: Note, LinguisticNote	
Min length	1	
Max length	10000	
Description	propertyName	type
	purpose	DESCRIPTION

Enumeration	TextNoteType		
	AIXM	**Translations**	
	N SIDE	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	North Side
	NE SIDE	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	Northeast Side
	E SIDE	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	East Side
	SE SIDE	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	Southeast Side
	S SIDE	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	South Side
	SW SIDE	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	Southwest Side
	W SIDE	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	West Side
	NW SIDE	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	Northwest Side

58.2.5 Height (AGL) [*verticalExtent*]

Description: The extent of the vertical structure part.

Source: Baseline data.

TABLE 58.5
Height AGL

Attribute	Value		
AIXM Path (UML)	VerticalStructure (feature)/ VerticalStructurePart (object)/ verticalExtent (attribute)		
AIXM Element Xpath	VerticalStructure/ timeSlice/ VerticalStructureTimeSlice/ [interpretation SNAPSHOT]/ part/ VerticalStructurePart/verticalExtent		
AIXM Mapping	Class: VerticalStructurePart		
Datatype	ValDistanceType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 FT = 0.3048 M		
Enumeration	UomDistanceType	FAA	FT
		ICAO	M
		Plain Text	Feet

58.2.6 Distance and Direction [*ARP*]

Description: An AIXM Point derived from GM_Point that includes properties for describing a point with elevation and vertical extent. Used in obstacles, navaids, etc.

Source: User-provided (required either in distance/direction or gml coordinates).

TABLE 58.6
Airport ARP

Attribute	Value
AIXM Path (UML)	AirportHeliport (feature)/ Elevated Point (object)
AIXM Element XPath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation SNAPSHOT]/ ARP/ ElevatedPoint/ gml:pos
AIXM Mapping	Class: ElevatedPoint
Datatype	GML – decimal

58.2.7 Radius [gml:radius]

Description: An AIXM Point derived from GM_Point that includes properties for describing the radius around a point.

Source: User Entered (required).

TABLE 58.7
Radius Affected

Attribute	Value		
AIXM Path (UML)	ObstacleArea (feature)/ Surface (object)		
AIXM Element XPath	ObstacleArea/ timeSlice/ ObstacleAreaTimeSlice [interpretation TEMPDELTA]/ surfaceExtent/ ElevatedSurface/ gml:patches/ gml:PolygonPatch/ gml:exterior/ gml:Ring/ gml:curveMember/ gml:Curve/ gml:segments/ gml:CricleByCenterPoint/ gml:radius		
AIXM Mapping	Class: ElevatedSurface		
Datatype	ValDistanceType		
Min inclusive	0		
Unit Conversion	Units of Measure: 1 NM = 1.85200 KM		
Enumeration	UomDistanceType	FAA	NM
		ICAO	KM
		Plain Text	Nautical Mile

58.3 Q Codes and Series

TABLE 58.8
QCodes for Moored Balloon

AIXM Code	Q Code	
New	Q Code	QOBCE
	Scope	AE
	Traffic	IV
	Purpose	NBOM
	Series	A (if within 5 SM of Airport ARP)
		K (if farther than 5 SM of Airport ARP)

58.4 Business Rules

58.4.1 Template Business Rules

a. When *type* equals null, then "Select a type."

b. When *(height AGL)* equals null, then "Enter a height." If (*height AGL*) is left empty, then add UNK in place of height.

c. When *coordinates* or *distance and direction* equals null, then "Enter a location."

d. The *distance* should be a number less than 50 SM and the *radius* should be a number less than 10 NM.

e. When *coordinates* are entered, automatically calculate *distance and direction*.

f. When *coordinates* are not entered, calculate *coordinates* for the AIXM message, but do not display in the FAA NOTAM. Add *distance and direction* into an annotation. There should be two significant figures in each box, excluding the longitude degree, which should have three significant figures.

g. The latitude and longitude must be entered in degree, minute, second format.

58.4.2 Policy Business Rules

58.4.3 Data Encoding Business Rules

a. For verticalStructure, all of the information should appear in the TEMPDELTA.

b. The AIXM Message need only to have the coordinates of the verticalStructure and of the Airport. The direction and distance can be calculated by these coordinates.

c. The latitude and longitude must be converted to decimal for the AIXM Message.

58.5 Sample AIXM Message

Sample NOTAM Message: CRANE 187 (120 AGL) 12 ESE (38N/118W) LGTS OTS


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd"
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1">
<notamMessage:hasMember>
  <ObstacleArea gml:id="OA01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
    <timeSlice>
      <ObstacleAreaTimeSlice gml:id="OA01_TS01">
        <gml:validTime>
          <gml:TimePeriod gml:id="OA01_TS01_TP01">
            <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
            <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
          </gml:TimePeriod>
        </gml:validTime>
        <interpretation>TEMPDELTA</interpretation>
        <sequenceNumber>6</sequenceNumber>
        <reference_ownerAirport xlink:href="ACY01"/>
        <surfaceExtent>
          <ElevatedSurface gml:id="ES01">
            <gml:patches>
              <gml:PolygonPatch>
                <gml:exterior>
                  <gml:Ring>
                    <gml:curveMember>
                      <gml:Curve gml:id="CURVE01">
```

```
                    <gml:segments>
                      <gml:CircleByCenterPoint numArc="1">
                        <gml:pos>38 -118</gml:pos>
                        <gml:radius uom="NM">0.5</gml:radius>
                      </gml:CircleByCenterPoint>
                    </gml:segments>
                  </gml:Curve>
                </gml:curveMember>
              </gml:Ring>
            </gml:exterior>
          </gml:PolygonPatch>
        </gml:patches>
      </ElevatedSurface>
    </surfaceExtent>
    <obstacle xlink:href="VS01"/>
  </ObstacleAreaTimeSlice>
 </timeSlice>
</ObstacleArea>
</notamMessage:hasMember>
<notamMessage:hasMember>
 <VerticalStructure gml:id="VS01">
 <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
   <VerticalStructureTimeSlice gml:id="VS01_TS01">
    <gml:validTime>
     <gml:TimePeriod gml:id="VS01_TS01_TP01">
      <gml:beginPosition>2010-04-07T09:00:00</gml:beginPosition>
      <gml:endPosition>2010-04-15T09:00:00</gml:endPosition>
     </gml:TimePeriod>
    </gml:validTime>
    <interpretation>TEMPDELTA</interpretation>
    <sequenceNumber>8</sequenceNumber>
    <type>TETHERED_BALLOON</type>
     Located near (Point to Airport xlink:href)
    <part>
     <VerticalStructurePart gml:id="VSP01">
      <verticalExtent uom="FT">120</verticalExtent>
     </VerticalStructurePart>
    </part>
   </VerticalStructureTimeSlice>
  </timeSlice>
 </VerticalStructure>
</notamMessage:hasMember>
<notamMessage:hasMember>
 <AirportHeliport gml:id="ACY01">
 <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
  <timeSlice>
   <AirportHeliportTimeSlice gml:id="ACY_TS01">
    <gml:validTime>
     <gml:TimeInstant gml:id="ACY_TS01_TI01">
      <gml:timePosition>2010-04-07T09:00:00</gml:timePosition>
     </gml:TimeInstant>
    </gml:validTime>
    <interpretation>SNAPSHOT</interpretation>
    <ARP>
     <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
      <gml:pos>38 -119</gml:pos>
     </ElevatedPoint>
```

```
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```


58.6 Translation Templates

58.6.1 FAA

OBST *type distance cardinalDirection gml:radius NMR verticalExtent/BLW*

58.6.2 ICAO E Line

OBST *type distance cardinalDirection gml:radius NMR verticalExtent/BLW*

58.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

[Schedule: *recurring schedule***]**

New Obstacle: *type*

Location from Airport: *distance cardinalDirection*

Radius of Affected Area: *gml:radius*

Height of Affected Area: *verticalExtent* **/BLW**

58.7 Additional Analysis

None.

59 AIXM General Digital Encoding Business Rules

59.1 General Business Rules

An initial set of business rules for the Aeronautical Information Exchange Model (AIXM) version 5.1 is captured in an Excel report which has the following structure:

- Input source (ex: AIXM Model)
- Textual description
- AIXM Class associated with the business rule
- Category associated with the rule (minimal data rule, consistency, plausibility)
- Checking Level (error, warning)
- Name of the targeted AIXM classes and properties included
- Schematron code is provided (when available)

The provided Excel report also includes a macro which can generate a valid Schematron file (XML file) with all the selected rules. Directions on how to use the Schematron file can be found on the Eurocontrol Website.

59.2 Feature Identification and Reference (XLink and UUIDs)

The Aeronautical Information Exchange Model is a GML 3.2 application schema. The AIXM 5.1 schema uses the XLink schema bundled with GML 3.2 to represent the link between two features.

59.2.1 References within a message

In the case of the digital NOTAM messages, the AIXM 5.1 message will contain all or most of the referenced features in the message. When applicable, the Universally Unique Identifier (UUID) associated with the referenced AIXM feature should be included in the message. The UUID is a 128-bit number that should be unique and universal.
Each AIXM feature is identified through the use of the identifier property. In the AIXM Temporality Concept, the identifier property is the only time-invariant property and is therefore not captured within the timeSlice.

```
<Runway gml:id="RWY01">
<gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac593j</gml:identifier>
  <timeSlice>
    <RunwayTimeSlice gml:id="RWY01_TS01">
      <gml:validTime>
        <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
          <gml:timePosition>2010-11-30T15:32:41</gml:timePosition>
        </gml:TimeInstant>
      </gml:validTime>
      <interpretation>SNAPSHOT</interpretation>
      <designator>13/31</designator>
      <associatedAirportHeliport xlink:href="#ACY"/>
    </RunwayTimeSlice>
  </timeSlice>
</Runway>
…
<AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac595j</gml:identifier>
…
</AirportHeliport>
```

The uniform resource name (URN) are unlike URLs as they cannot be inherently resolved to find the resource. It is then the responsibility of the user to resolve the reference. The URN should be based on the UUID for the referenced feature, although it is viable to use natural keys instead, if the UUID does not exist or is not available.

59.3 Geographical Markup Language (GML) – Defining Geometries

The Aeronautical Information Exchange Model (AIXM) uses the Geographical Markup Language (GML) version 3.2 for encoding positional and shape aeronautical data, such as airspace, runways, etc. The ISO 19107 spatial schema contains an extensive list of geometries, geometric properties and operations, many of which are unnecessary. Therefore, a common use of the concept should be applied. Here, the preliminary discussion is described, although, it should be understood that this is not final and is subject to change.

In GML, the geodetic datus is specified by reference to a Coordinate Reference System (CRS). The CRS reference is critical for the correct encoding and processing of geographical data contained in a digital NOTAM message. The reference indicates the geodetic reference datum as well as the order of the values (latitude/longitude) and the convention used for measuring angles. It is generally recommended that the EPSG:4326 CRS is used by AIXM 5.1 data sets, which corresponds to the WGS-84 reference datum imposed by ICAO.

When applied to the encoding of a surface in AIXM:

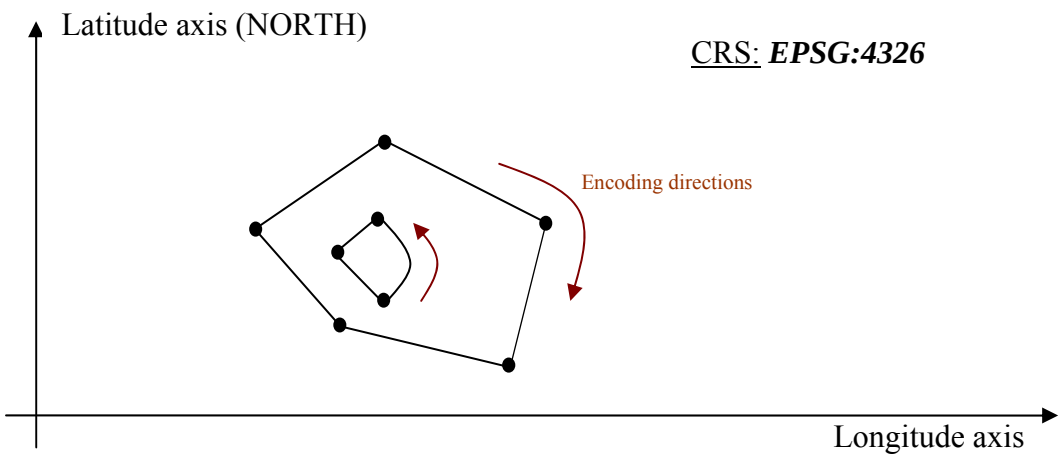
```
<ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
  <gml:patches>
    <gml:PolygonPatch>
      <gml:exterior>
        <gml:LinearRing>
          <gml:posList>39.2704 -74.3430 39.2707 -74.3424 39.2705 -74.3421 39.2702
-74.3421 39.2704 -74.3430</gml:posList>
        </gml:LinearRing>
      </gml:exterior>
    </gml:PolygonPatch>
  </gml:patches>
</ElevatedSurface>
```

or a point:

```
<ElevatedPoint gml:id="EP02" srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2">
  <gml:pos>39.27 -74.34</gml:pos>
</ElevatedPoint>
```

The first and last latitude/longitude pair in a gml:posList of series of gml:pos must be equal, which is mandatory for a closed surface in GML. Also, the same space separator is used between both latitude and longitude values and also between the latitude/longitude pairs. Additionally, the srsDiminsion should be defined as 2, for a 2D CRS, such as EPSG:4326.

The GML Specification does not indicate in which direction surfaces are described (clockwise or counter-clockwise). There is an established practice in computer graphics for 'geographic' CRSs, the outside perimeter is encoded clockwise. Additionally, an inside perimeter would be encoded counter-clockwise. Therefore, it is recommended that the use of the EPSG:4326 CRS in the Aeronautical Information Domain should follow this practice.



The following is proposed for a defined circle geometry (from Obstruction example):

```
<surfaceExtent>
  <ElevatedSurface gml:id="ES01" srsName="urn:ogc:def:crs:OGC:1.3:CRS84">
    <gml:patches>
      <gml:PolygonPatch>
        <gml:exterior>
          <gml:Ring>
            <gml:curveMember>
              <gml:Curve gml:id="CURVE01">
                <gml:segments>
                  <gml:CircleByCenterPoint numArc="1">
                    <gml:pos>38 -118</gml:pos>
                    <gml:radius uom="NM">0.5</gml:radius>
                  </gml:CircleByCenterPoint>
                </gml:segments>
              </gml:Curve>
            </gml:curveMember>
          </gml:Ring>
        </gml:exterior>
      </gml:PolygonPatch>
    </gml:patches>
  </ElevatedSurface>
</surfaceExtent>
```

In this example, the center of the circle is defined, as is the radius and units.

60 Metadata Message

The following sample of a metadata message is the minimal amount of information that is necessary to capture in the metadata message preceeding the features captured in the digital NOTAM. The metadata message contains the accountable organization, the bounding box (location), a time-stamp for each action (creation, publication, and revision, when applicable), the language (which, for the FAA is default English), and whether the NOTAM shall be publically distributed.

Sample Metadata Message:
Accountable Organization: ACY (contact number 202 580 7400)
Creation Time/Date: 02 April 2010 14:53 (12 seconds)
Publication Time/Date: 02 April 2010 14:53 (14 seconds)
Revision Time/Date: 07 April 2010 09:34 (42 seconds)
Bounding Box around ACY Airport: 39.48 -74.70 to 39.40 -74.58
Language: English
Topic Category: Transportation
Public Access (Public or Restricted): Public


```xml
<?xml version="1.0" encoding="UTF-8"?>
<notamMessage:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1
./AIXM_Features.xsd http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd "
gml:id="FNS-Message" xmlns:notamMessage="http://www.aixm.aero/schema/5.1/message"
xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:gco="http://www.isotc211.org/2005/gco"
xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1" xmlns:gts="http://www.isotc211.org/2005/gts"
xmlns:srv="http://www.isotc211.org/2005/srv">
<messageMetadata>
  <gmd:MD_Metadata>
    <gmd:contact>
      <gmd:CI_ResponsibleParty>
        <gmd:organisationName>
          <gco:CharacterString>ACY</gco:CharacterString>
        </gmd:organisationName>
        <gmd:contactInfo>
          <gmd:CI_Contact>
            <gmd:phone>
              <gmd:CI_Telephone>
                <gmd:voice>
                  <gco:CharacterString>+12025807400</gco:CharacterString>
                </gmd:voice>
              </gmd:CI_Telephone>
            </gmd:phone>
          </gmd:CI_Contact>
        </gmd:contactInfo>
        <gmd:role>
          <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="pointOfContact">pointOfContact</gmd:CI_RoleCode>
        </gmd:role>
      </gmd:CI_ResponsibleParty>
    </gmd:contact>
    <gmd:dateStamp>
      <gco:DateTime>2010-04-07T09:34:42</gco:DateTime>
    </gmd:dateStamp>
    <gmd:identificationInfo>
      <gmd:MD_DataIdentification>
        <gmd:citation>
```

```
            <gmd:CI_Citation>
              <gmd:title>
                <gco:CharacterString>NOTAM</gco:CharacterString>
              </gmd:title>
              <gmd:date>
                <gmd:CI_Date>
                  <gmd:date>
                    <gco:DateTime>2010-04-02T14:53:12</gco:DateTime>
                  </gmd:date>
                  <gmd:dateType>
                    <gmd:CI_DateTypeCode
codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_DateTypeCode"
codeListValue="creation">creation</gmd:CI_DateTypeCode>
                  </gmd:dateType>
                </gmd:CI_Date>
              </gmd:date>
              <gmd:date>
                <gmd:CI_Date>
                  <gmd:date>
                    <gco:DateTime>2010-04-02T14:53:14</gco:DateTime>
                  </gmd:date>
                  <gmd:dateType>
                    <gmd:CI_DateTypeCode
codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_DateTypeCode"
codeListValue="publication">publication</gmd:CI_DateTypeCode>
                  </gmd:dateType>
                </gmd:CI_Date>
              </gmd:date>
              <gmd:date>
                <gmd:CI_Date>
                  <gmd:date>
                    <gco:DateTime>2010-04-07T09:34:42</gco:DateTime>
                  </gmd:date>
                  <gmd:dateType>
                    <gmd:CI_DateTypeCode
codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_DateTypeCode"
codeListValue="revision">revision</gmd:CI_DateTypeCode>
                  </gmd:dateType>
                </gmd:CI_Date>
              </gmd:date>
            </gmd:CI_Citation>
          </gmd:citation>
          <gmd:abstract>
            <gco:CharacterString>Updates to the following Airport: EBBR, EBBT</gco:CharacterString>
          </gmd:abstract>
          <gmd:pointOfContact>
            <gmd:CI_ResponsibleParty>
              <gmd:organisationName>
                <gco:CharacterString>ACY</gco:CharacterString>
              </gmd:organisationName>
              <gmd:contactInfo>
                <gmd:CI_Contact>
                  <gmd:phone>
                    <gmd:CI_Telephone>
                      <gmd:voice>
                        <gco:CharacterString>+12025807400</gco:CharacterString>
                      </gmd:voice>
                    </gmd:CI_Telephone>
```

```
                </gmd:phone>
              </gmd:CI_Contact>
            </gmd:contactInfo>
            <gmd:role>
              <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="originator">originator</gmd:CI_RoleCode>
            </gmd:role>
          </gmd:CI_ResponsibleParty>
        </gmd:pointOfContact>
        <gmd:resourceConstraints>
          <gmd:MD_SecurityConstraints>
            <gmd:classification>
              <gmd:MD_ClassificationCode codeList="./resources/codeList.xml#MD_ClassificationCode"
codeListValue="public">public</gmd:MD_ClassificationCode>
            </gmd:classification>
          </gmd:MD_SecurityConstraints>
        </gmd:resourceConstraints>
        <gmd:language>
          <gmd:LanguageCode codeList="./resources/codeList.xml#LanguageCode"
codeListValue="eng">eng</gmd:LanguageCode>
        </gmd:language>
        <gmd:extent>
          <gmd:EX_Extent>
            <gmd:geographicElement>
              <gmd:EX_GeographicBoundingBox>
                <gmd:westBoundLongitude>
                  <gco:Decimal>-74.70</gco:Decimal>
                </gmd:westBoundLongitude>
                <gmd:eastBoundLongitude>
                  <gco:Decimal>-74.53</gco:Decimal>
                </gmd:eastBoundLongitude>
                <gmd:southBoundLatitude>
                  <gco:Decimal>39.40</gco:Decimal>
                </gmd:southBoundLatitude>
                <gmd:northBoundLatitude>
                  <gco:Decimal>39.48</gco:Decimal>
                </gmd:northBoundLatitude>
              </gmd:EX_GeographicBoundingBox>
            </gmd:geographicElement>
          </gmd:EX_Extent>
        </gmd:extent>
      </gmd:MD_DataIdentification>
    </gmd:identificationInfo>
  </gmd:MD_Metadata>
</messageMetadata>
<notamMessage:hasMember>
…
</notamMessage:hasMember>
</notamMessage:AIXMBasicMessage>
```

61 Complete AIXM Digital NOTAM Message

Below is a sample AIXM Digital NOTAM Message using a draft Event Schema. Included in the message is the metadata in additional to all relevant NOTAM information.

!ACY 667 ACY RWY CLSD EXC EMERG ACFT 0900 – 1300 DLY 201012010900 – 201012151300


```xml
<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XMLSpy v2008 (http://www.altova.com) by Jocelyn Cox, CNA in support of FAA -->
<message:AIXMBasicMessage xsi:schemaLocation="http://www.aixm.aero/schema/5.1 ./AIXM_Features.xsd
http://www.aixm.aero/schema/5.1/message ./message/AIXM_BasicMessage.xsd" gml:id="FNS-Message"
xmlns:message="http://www.aixm.aero/schema/5.1/message" xmlns:aixm="http://www.aixm.aero/schema/5.1"
xmlns:gco="http://www.isotc211.org/2005/gco" xmlns:gmd="http://www.isotc211.org/2005/gmd"
xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:event="http://www.aixm.aero/schema/5.1/event" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns="http://www.aixm.aero/schema/5.1" xmlns:gts="http://www.isotc211.org/2005/gts"
xmlns:srv="http://www.isotc211.org/2005/srv">
  <messageMetadata>
    <gmd:MD_Metadata>
      <gmd:contact>
        <gmd:CI_ResponsibleParty>
          <gmd:organisationName>
            <gco:CharacterString>ACY</gco:CharacterString>
          </gmd:organisationName>
          <gmd:contactInfo>
            <gmd:CI_Contact>
              <gmd:phone>
                <gmd:CI_Telephone>
                  <gmd:voice>
                    <gco:CharacterString>+12025807400</gco:CharacterString>
                  </gmd:voice>
                </gmd:CI_Telephone>
              </gmd:phone>
            </gmd:CI_Contact>
          </gmd:contactInfo>
          <gmd:role>
            <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="pointOfContact">pointOfContact</gmd:CI_RoleCode>
          </gmd:role>
        </gmd:CI_ResponsibleParty>
      </gmd:contact>
      <gmd:dateStamp>
        <gco:DateTime>2010-11-30T15:32:43</gco:DateTime>
      </gmd:dateStamp>
      <gmd:identificationInfo>
        <gmd:MD_DataIdentification>
          <gmd:citation>
            <gmd:CI_Citation>
              <gmd:title>
                <gco:CharacterString>NOTAM</gco:CharacterString>
              </gmd:title>
              <gmd:date>
                <gmd:CI_Date>
                  <gmd:date>
                    <gco:DateTime>2010-11-30T15:32:41</gco:DateTime>
                  </gmd:date>
                  <gmd:dateType>
```

```
                <gmd:CI_DateTypeCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_DateTypeCode"
codeListValue="creation">creation</gmd:CI_DateTypeCode>
              </gmd:dateType>
            </gmd:CI_Date>
          </gmd:date>
          <gmd:date>
            <gmd:CI_Date>
              <gmd:date>
                <gco:DateTime>2010-11-30T15:32:43</gco:DateTime>
              </gmd:date>
              <gmd:dateType>
                <gmd:CI_DateTypeCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_DateTypeCode"
codeListValue="publication">publication</gmd:CI_DateTypeCode>
              </gmd:dateType>
            </gmd:CI_Date>
          </gmd:date>
        </gmd:CI_Citation>
      </gmd:citation>
      <gmd:abstract>
        <gco:CharacterString>Updates to the following Airport: ACY</gco:CharacterString>
      </gmd:abstract>
      <gmd:pointOfContact>
        <gmd:CI_ResponsibleParty>
          <gmd:organisationName>
            <gco:CharacterString>ACY</gco:CharacterString>
          </gmd:organisationName>
          <gmd:contactInfo>
            <gmd:CI_Contact>
              <gmd:phone>
                <gmd:CI_Telephone>
                  <gmd:voice>
                    <gco:CharacterString>+12025807400</gco:CharacterString>
                  </gmd:voice>
                </gmd:CI_Telephone>
              </gmd:phone>
            </gmd:CI_Contact>
          </gmd:contactInfo>
          <gmd:role>
            <gmd:CI_RoleCode codeList="../ISO_19139_Schemas/resources/codeList.xml#CI_RoleCode"
codeListValue="originator">originator</gmd:CI_RoleCode>
          </gmd:role>
        </gmd:CI_ResponsibleParty>
      </gmd:pointOfContact>
      <gmd:resourceConstraints>
        <gmd:MD_SecurityConstraints>
          <gmd:classification>
            <gmd:MD_ClassificationCode codeList="./resources/codeList.xml#MD_ClassificationCode"
codeListValue="public">public</gmd:MD_ClassificationCode>
          </gmd:classification>
        </gmd:MD_SecurityConstraints>
      </gmd:resourceConstraints>
      <gmd:language>
        <gmd:LanguageCode codeList="./resources/codeList.xml#LanguageCode"
codeListValue="eng">eng</gmd:LanguageCode>
      </gmd:language>
      <gmd:extent>
        <gmd:EX_Extent>
          <gmd:geographicElement>
```

```
                <gmd:EX_GeographicBoundingBox>
                  <gmd:westBoundLongitude>
                    <gco:Decimal>-74.70</gco:Decimal>
                  </gmd:westBoundLongitude>
                  <gmd:eastBoundLongitude>
                    <gco:Decimal>-74.53</gco:Decimal>
                  </gmd:eastBoundLongitude>
                  <gmd:southBoundLatitude>
                    <gco:Decimal>39.40</gco:Decimal>
                  </gmd:southBoundLatitude>
                  <gmd:northBoundLatitude>
                    <gco:Decimal>39.48</gco:Decimal>
                  </gmd:northBoundLatitude>
                </gmd:EX_GeographicBoundingBox>
              </gmd:geographicElement>
            </gmd:EX_Extent>
          </gmd:extent>
        </gmd:MD_DataIdentification>
      </gmd:identificationInfo>
    </gmd:MD_Metadata>
  </messageMetadata>
  <message:hasMember>
    <event:Event gml:id="EVENT01">
      <event:timeSlice>
        <event:EventTimeSlice gml:id="EVENT01_TS01">
          <gml:validTime>
            <gml:TimePeriod gml:id="e01-2">
              <gml:beginPosition>2010-12-01T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-12-15T13:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <aixm:interpretation>BASELINE</aixm:interpretation>
          <aixm:sequenceNumber>1</aixm:sequenceNumber>
          <aixm:featureLifetime>
            <gml:TimePeriod gml:id="FLT01_TP01">
              <gml:beginPosition>2010-12-01T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-12-15T13:00:00</gml:endPosition>
            </gml:TimePeriod>
          </aixm:featureLifetime>
          <event:encoding>DIGITAL</event:encoding>
          <event:textNOTAM>
            <event:NOTAM gml:id="EVENT01_TEXT">
              <event:series>A</event:series>
              <event:number>0667</event:number>
              <event:year>2010</event:year>
              <event:type>N</event:type>
              <event:issued>2010-11-30T15:32:43</event:issued>
              <event:selectionCode>QMRLT</event:selectionCode>
              <event:traffic>ALL</event:traffic>
              <event:purpose>NBO</event:purpose>
              <event:scope>A</event:scope>
              <event:coordinates>3945N7461W</event:coordinates>
              <event:radius>005</event:radius>
              <event:effectiveStart>1012010900</event:effectiveStart>
              <event:effectiveEnd>1012151300</event:effectiveEnd>
              <event:schedule>0900 - 1300 DLY</event:schedule>
              <event:text>RWY 13/31 CLSD EXC EMERG ACFT</event:text>
            </event:NOTAM>
```

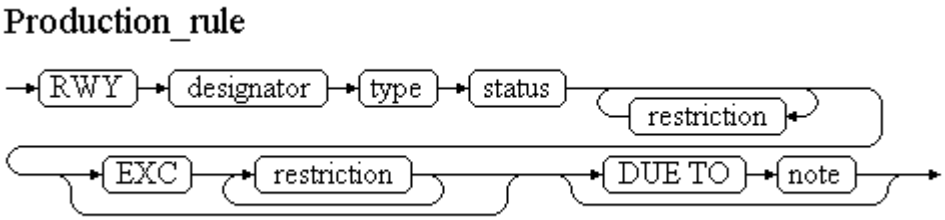
```
            </event:textNOTAM>
          </event:EventTimeSlice>
        </event:timeSlice>
      </event:Event>
    </message:hasMember>
    <message:hasMember>
      <RunwayDirection gml:id="RWYDIR01">
      <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac591j</gml:identifier>
        <timeSlice>
          <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS01">
            <gml:validTime>
              <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
                <gml:timePosition>2010-11-30T15:32:41</gml:timePosition>
              </gml:TimeInstant>
            </gml:validTime>
            <interpretation>SNAPSHOT</interpretation>
            <designator>13</designator>
            <usedRunway xlink:href="#RWY01"/>
          </RunwayDirectionTimeSlice>
        </timeSlice>
        <timeSlice>
          <RunwayDirectionTimeSlice gml:id="RWYDIR01_TS02">
            <gml:validTime>
              <gml:TimePeriod gml:id="RWYDIR01_TS02_TP01">
                <gml:beginPosition>2010-12-01T09:00:00</gml:beginPosition>
                <gml:endPosition>2010-12-15T13:00:00</gml:endPosition>
              </gml:TimePeriod>
            </gml:validTime>
            <interpretation>TEMPDELTA</interpretation>
            <sequenceNumber>14</sequenceNumber>
            <availability>
              <ManoeuvringAreaAvailability gml:id="MAA01">
                <timeInterval>
                  <Timesheet gml:id="TS01">
                    <timeReference>UTC</timeReference>
                    <startDate>01-12</startDate>
                    <endDate>15-12</endDate>
                    <day>ANY</day>
                    <startTime>09:00</startTime>
                    <endTime>13:00</endTime>
                    <daylightSavingAdjust>YES</daylightSavingAdjust>
                  </Timesheet>
                </timeInterval>
                <operationalStatus>LIMITED</operationalStatus>
                <usage>
                  <ManoeuvringAreaUsage gml:id="MAU01">
                    <type>PERMIT</type>
                    <selection>
                      <ConditionCombination gml:id="CC01">
                        <flight>
                          <FlightCharacteristic gml:id="FC01">
                            <status>EMERGENCY</status>
                          </FlightCharacteristic>
                        </flight>
                      </ConditionCombination>
                    </selection>
                  </ManoeuvringAreaUsage>
                </usage>
```

```
            </ManoeuvringAreaAvailability>
          </availability>
        </RunwayDirectionTimeSlice>
      </timeSlice>
    </RunwayDirection>
  </message:hasMember>
  <message:hasMember>
    <RunwayDirection gml:id="RWYDIR02">
    <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac592j</gml:identifier>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS01">
          <gml:validTime>
            <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
              <gml:timePosition>2010-11-30T15:32:41</gml:timePosition>
            </gml:TimeInstant>
          </gml:validTime>
          <interpretation>SNAPSHOT</interpretation>
          <designator>31</designator>
          <usedRunway xlink:href="#RWY01"/>
        </RunwayDirectionTimeSlice>
      </timeSlice>
      <timeSlice>
        <RunwayDirectionTimeSlice gml:id="RWYDIR02_TS02">
          <gml:validTime>
            <gml:TimePeriod gml:id="RWYDIR02_TS02_TP01">
              <gml:beginPosition>2010-12-01T09:00:00</gml:beginPosition>
              <gml:endPosition>2010-12-15T13:00:00</gml:endPosition>
            </gml:TimePeriod>
          </gml:validTime>
          <interpretation>TEMPDELTA</interpretation>
          <sequenceNumber>14</sequenceNumber>
          <availability>
            <ManoeuvringAreaAvailability gml:id="MAA02">
              <timeInterval>
                <Timesheet gml:id="TS02">
                  <timeReference>UTC</timeReference>
                  <startDate>01-12</startDate>
                  <endDate>15-12</endDate>
                  <day>ANY</day>
                  <startTime>09:00</startTime>
                  <endTime>13:00</endTime>
                  <daylightSavingAdjust>YES</daylightSavingAdjust>
                </Timesheet>
              </timeInterval>
              <operationalStatus>LIMITED</operationalStatus>
              <usage>
                <ManoeuvringAreaUsage gml:id="MAU02">
                  <type>PERMIT</type>
                  <selection>
                    <ConditionCombination gml:id="CC02">
                      <flight>
                        <FlightCharacteristic gml:id="FC02">
                          <status>EMERGENCY</status>
                        </FlightCharacteristic>
                      </flight>
                    </ConditionCombination>
                  </selection>
                </ManoeuvringAreaUsage>
```

```
            </usage>
          </ManoeuvringAreaAvailability>
        </availability>
      </RunwayDirectionTimeSlice>
    </timeSlice>
  </RunwayDirection>
</message:hasMember>
<message:hasMember>
  <Runway gml:id="RWY01">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac593j</gml:identifier>
    <timeSlice>
      <RunwayTimeSlice gml:id="RWY01_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-11-30T15:32:41</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>13/31</designator>
        <associatedAirportHeliport xlink:href="#ACY"/>
      </RunwayTimeSlice>
    </timeSlice>
  </Runway>
</message:hasMember>
<message:hasMember>
  <AirportHeliport gml:id="ACY">
  <gml:identifier codeSpace="urn:us:gov:dot:faa:aim">a82b3fc9-4aa4-4e67-8def-aaea1ac594j</gml:identifier>
    <timeSlice>
      <AirportHeliportTimeSlice gml:id="ACY_TS01">
        <gml:validTime>
          <gml:TimeInstant gml:id="RWYDIR01_TS01_TI01">
            <gml:timePosition>2010-11-30T15:32:41</gml:timePosition>
          </gml:TimeInstant>
        </gml:validTime>
        <interpretation>SNAPSHOT</interpretation>
        <designator>ACY</designator>
        <name>ATLANTIC CITY INTERNATIONAL AIRPORT</name>
        <locationIndicatorICAO>KACY</locationIndicatorICAO>
        <ARP>
          <ElevatedPoint srsName="urn:ogc:def:crs:EPSG::4326" srsDimension="2" gml:id="EP01">
            <gml:pos>39.27 -74.34</gml:pos>
          </ElevatedPoint>
        </ARP>
      </AirportHeliportTimeSlice>
    </timeSlice>
  </AirportHeliport>
</message:hasMember>
</message:AIXMBasicMessage>
```

62 Water Lane – Closure

Specify the status of a water lane by runway direction. The closure of a runway maps to Runway Direction and Runway.



62.1 Example NOTAMs

1. !FAI 05/026 FAI RWY 2W/20W WATER LANE CLSD WEF 0905070901

Source: US NOTAM Repository

62.2 AIXM Mapping and Translation

62.2.1 Scenario Details

TABLE 62.1

Attribute	Value
Description	Specify a the status of the water lane
Maps to Keyword	Runway Runway Direction*
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature XPath	aixm:RunwayDirection
NOTAM lifespan	
Start ASAP	No

*One additional business rule associated with Runway Direction. See below.

62.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 62.2

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

62.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 62.3

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

62.2.4 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 62.4

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane

62.2.5 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Aerodrome Closure event specification is selected. Specific restriction selected by Data Encoding Business Rules.

TABLE 62.5

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	LIMITED
		FAA	CLSD
		Plain Text	Closed

62.2.6 Permit/Forbid Operational Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (by selecting an item from template as either as a restriction or exclusion).

TABLE 62.6

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ type		
Enumeration	Code		
	AIXM	**Translations**	
	RESERV	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

62.2.7 Operation Restriction [*operation*]

Description: A coded identifier indicating an operation executed by an aircraft in relation with an airport/heliport.

Source: User-selected (optional).

TABLE 62.7

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ operation		
Enumeration	Code		
	AIXM	**Translations**	
	TOUCHGO	ICAO	TGL
		FAA	TGL
		Plain Text	Touch and go
	TRAIN_APPROACH	ICAO	PLA
		FAA	PLA
		Plain Text	Practice Low Approach
	LANDING	ICAO	LDG
		FAA	LDG
		Plain Text	landing

	TAKEOFF	ICAO	TKOF
		FAA	TKOF
		Plain Text	Takeoff
	OTHER:TRANSIENT	ICAO	TRANSIENT
		FAA	TSNT
		Plain Text	transient
	OTHER:AIRSHOW	ICAO	AIRSHOW
		FAA	AIRSHOW
		Plain Text	airshow
	OTHER:HELIPORT	ICAO	HELI
		FAA	HELI
		Plain Text	heliport

62.2.8 Flight Restriction [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 62.8

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV
		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation

62.2.9 Flight Restriction [*purpose*]

Description: A code indicating the purpose of the flight.

Source: User-selected (optional).

TABLE 62.9

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ purpose		
Enumeration	CodeFlightPurposeType		
	AIXM	**Translations**	
	SCHEDULED	ICAO	SKED ACFT
		FAA	SKED ACFT
		Plain Text	scheduled aircraft
	NON_SCHEDULED	ICAO	UNSKED ACFT
		FAA	UNSKED ACFT
		Plain Text	unscheduled aircraft
	AIR_TRAINING	ICAO	STUDENT
		FAA	STUDENT
		Plain Text	Student

62.2.10 Aircraft Restriction [*type*]

Description: Indicating the type of an aircraft.

Source: User-selected (optional).

TABLE 62.10

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type		
Enumeration	CodeAircraftType		
	AIXM	**Translations**	
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	seaplane
	OTHER:SKIPLANES	ICAO	SKI PLANE
		FAA	SKI
		Plain Text	ski plane
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	charters

62.2.11 Aircraft Restriction [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 62.11
Flight Status

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight
	SAR	ICAO	SEARCH AND RESCUE
		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA
		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

62.2.12 Aircraft Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft.

Source: User-entered (optional).

TABLE 62.12

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [*wingspan*]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		

Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*>
		FAA	GTR THAN <*value*>
		Plain Text	Greater than <*value*>
	BELOW (*type* = PERMIT)	ICAO	LESS THAN <*value*>
		FAA	LESS THAN <*value*>
		Plain Text	Less than <*value*>

62.2.13 Aircraft Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft.

Source: User-entered (optional).

TABLE 62.13

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [*weight*]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	OVR <*value*>
		FAA	OVR <*value*>
		Plain Text	Over <*value*>
	AT_OR_BELOW (*type* = PERMIT)	ICAO	AT BLW <*value*>
		FAA	AT BLW <*value*>
		Plain Text	And below <*value*>

62.2.14 Aircraft Restriction [*speed*]

Description: Speed and speed interpretation of the aircraft.

Source: User-entered (optional).

TABLE 62.14

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ speed		
Datatype	ValSpeedType		
Min inclusive	0		
Enumeration	Units of Measure: 1 KT = 1.852 KM_H		
	UomDistanceType	FAA	KT
		Plain Text	Knots
		ICAO	KM_H
		Plain Text	Kilometers/hour
	AIXM	**Translations**	
	Aircraft Restriction [*speed*]	ICAO	APCH SPD
		FAA	approach speed
		Plain Text	APCH SPD
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ speedInterpretation (attribute)		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (*type* = FORBID)	ICAO	GTR THAN <*value*> KTS
		FAA	> <*value*> KTS
		Plain Text	GTR THAN <*value*> KTS

62.2.15 Other [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 62.15

Attribute	Value	
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

62.2.16 Due to [*warning*]

Description: A reason for caution when operating at or near the facility. This is only a reason for closing (not an exception).

Source: User-selected (optional).

TABLE 62.16

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	DUE TO WIP	ICAO	WIP
		FAA	WIP
		Plain Text	Work in progress
	DUE TO EQUIP	ICAO	PERSONNEL AND EQUIP WORKING
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	DUE TO ICE REMOVAL	ICAO	ICE
		FAA	ICE
		Plain Text	Ice
	DUE TO UNSAFE ICE	ICAO	UNSAFE ICE
		FAA	UNSAFE ICE
		Plain Text	Unsafe ice
	DUE TO CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	DUE TO USER SUPPLIED FREE TEXT	ICAO	User Supplied
		FAA	
		Plain Text	

62.3 Q Codes

TABLE 62.17

AIXM Code	QCode	
ALL	Series	A
CLOSED	Q Code	QMRLC
	Scope	A
	Traffic	IV
	Purpose	NBO
ANY RESTRICTION/EXCEPTION COMBINATION	Q Code	QMRLT
	Scope	A
	Traffic	IV
	Purpose	NBO

62.4 Business Rules

62.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."

b. The addition of *restriction(s)* is optional. The user may be allowed to enter multiple *restrictions*.

c. The same *restriction* must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections)

d. A number (greater than zero) must be entered for *wingspan*, *weight*, and *speed* if selected.

e. When *restriction* equal to OTHER then enter text in additional text box. Please provide user with contraction look up TABLE.

f. For Runway Direction Closure, the must be a restriction or an exception in addition to CLSD. *Example*: RWY 04 CLSD TKOFF

62.4.2 Policy Business Rules

None.

62.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT.

b. If closing a full runway (both runway directions), both runway directions need to be closed, or restricted.

c. For entering *operationalStatus* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

d. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

e. The timePosition for the SNAPSHOT should correspond to the beginPosition.

f. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

g. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

h. For restrictions, *type* is FORBID. The values for wingspan Interpretation and weight Interpretation depend on *type* FORBID.

i. For exceptions, *type* is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on *type* PERMIT.

j. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

k. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

l. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

62.5 Sample AIXM Message (Closed)

See section 24.5 for example.

62.6 Sample AIXM Message (Closed with Exceptions)

See section 24.6 for example.

62.7 Translation Templates

62.7.1 FAA

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] WEF**

62.7.2 ICAO E Line

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] WEF**

62.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway: *designator*

Status: *status*

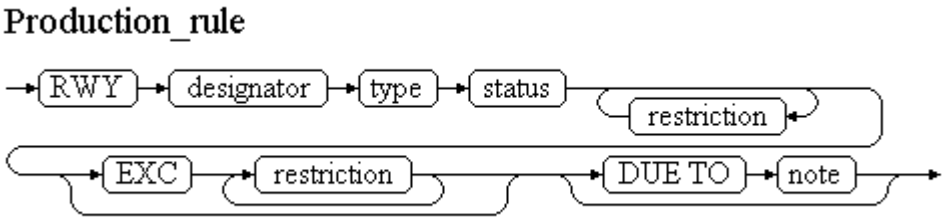
[Restriction(s): [*restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]**
WEF]

62.8 Additional Analysis

See AD, APRON, and TAXIWAY Closure for AIXM 5.1 sample message examples that are similar.

63 Ski Strip – Closure

Specify the status of a water lane by runway direction. The closure of a runway maps to Runway Direction and Runway.



63.1 Example NOTAMs

1. !FAI 05/026 FAI RWY 2W/20W WATER LANE CLSD WEF 0905070901

Source: US NOTAM Repository

63.2 AIXM Mapping and Translation

63.2.1 Scenario Details

TABLE 63.1

Attribute	Value
Description	Specify a the status of the water lane
Maps to Keyword	Runway Runway Direction*
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature XPath	aixm:RunwayDirection
NOTAM lifespan	
Start ASAP	No

*One additional business rule associated with Runway Direction. See below.

63.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 63.2

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

63.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 63.3

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

63.2.4 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 63.4

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

63.2.5 Status [operationalStatus]

Description: Indicates the availability of the facility for specific flight operations.

Source: Assumed when Aerodrome Closure event specification is selected. Specific restriction selected by Data Encoding Business Rules.

TABLE 63.5

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ operationalStatus (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ operationalStatus		
Enumeration	CodeStatusAirportType		
	AIXM	**Translations**	
	CLOSED	ICAO	CLSD
		FAA	CLSD
		Plain Text	Closed
	LIMITED	ICAO	LIMITED
		FAA	CLSD
		Plain Text	Closed

63.2.6 Permit/Forbid Operational Restriction [*type*]

Description: A code indicating whether the Aircraft Restriction is an actual restriction or an exclusion. This information is primarily for the AIXM Message and will not be displayed.

Source: User-selected (by selecting an item from template as either as a restriction or exclusion).

TABLE 63.6

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ type		
Enumeration	Code		
	AIXM	**Translations**	
	RESERV	ICAO	EXC
		FAA	EXC
		Plain Text	except
	FORBID	ICAO	TO
		FAA	TO
		Plain Text	to
	CONDITIONAL	ICAO	EXC PPR
		FAA	EXC PPR
		Plain Text	Except by Prior Permission

63.2.7 Operation Restriction [*operation*]

Description: A coded identifier indicating an operation executed by an aircraft in relation with an airport/heliport.

Source: User-selected (optional).

TABLE 63.7

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ operation		
Enumeration	Code		
	AIXM	**Translations**	
	TOUCHGO	ICAO	TGL
		FAA	TGL
		Plain Text	Touch and go
	TRAIN_APPROACH	ICAO	PLA
		FAA	PLA
		Plain Text	Practice Low Approach
	LANDING	ICAO	LDG
		FAA	LDG
		Plain Text	landing
	TAKEOFF	ICAO	TKOF
		FAA	TKOF
		Plain Text	Takeoff

	OTHER:TRANSIENT	ICAO	TRANSIENT
		FAA	TSNT
		Plain Text	transient
	OTHER:AIRSHOW	ICAO	AIRSHOW
		FAA	AIRSHOW
		Plain Text	airshow

63.2.8 Flight Restriction [*military*]

Description: A code indicating whether it is a military flight.

Source: User-selected (optional).

TABLE 63.8

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ military		
Enumeration	CodeMilitaryStatusType		
	AIXM	**Translations**	
	MIL	ICAO	MIL OPS
		FAA	MIL OPS
		Plain Text	military operations
	CIVIL	ICAO	CIV
		FAA	CIV
		Plain Text	civil
	OTHER:GA	ICAO	GEN AVIATION
		FAA	GA
		Plain Text	general aviation

63.2.9 Flight Restriction [*purpose*]

Description: A code indicating the purpose of the flight.

Source: User-selected (optional).

TABLE 63.9

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ purpose		
Enumeration	CodeFlightPurposeType		
	AIXM	**Translations**	
	SCHEDULED	ICAO	SKED ACFT
		FAA	SKED ACFT
		Plain Text	scheduled aircraft
	NON_SCHEDULED	ICAO	UNSKED ACFT
		FAA	UNSKED ACFT

		Plain Text	unscheduled aircraft
	AIR_TRAINING	ICAO	STUDENT
		FAA	STUDENT
		Plain Text	Student

63.2.10 Aircraft Restriction [*type*]

Description: Indicating the type of an aircraft.

Source: User-selected (optional).

TABLE 63.10

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ type		
Enumeration	CodeAircraftType		
	AIXM	**Translations**	
	SEAPLANE	ICAO	SEAPLANE
		FAA	SEAPLANE
		Plain Text	seaplane
	OTHER:SKIPLANES	ICAO	SKI PLANE
		FAA	SKI
		Plain Text	ski plane
	OTHER:AIRTAXI	ICAO	AIR TAXI
		FAA	AIR TAXI
		Plain Text	air taxi
	OTHER:CHARTERS	ICAO	CHARTERS
		FAA	CHARTERS
		Plain Text	charters

63.2.11 Aircraft Restriction [*status*]

Description: The designation of a special status for a flight.

Source: User-selected (optional).

TABLE 63.11
Flight Status

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ flight/ FlightCharacteristic/ status		
Enumeration	CodeFlightStatusType		
	AIXM	**Translations**	
	HOSP	ICAO	LIFE FLIGHT
		FAA	LIFE FLIGHT
		Plain Text	life flight
	SAR	ICAO	SEARCH AND RESCUE

		FAA	SEARCH AND RESCUE
		Plain Text	Search and Rescue
	OTHER:FIREFIGHTING	ICAO	ICAO
		FAA	FAA
		Plain Text	Plain Text
	EMERGENCY	ICAO	EMERG ACFT
		FAA	EMERG ACFT
		Plain Text	emergency aircraft

63.2.12 Aircraft Restriction [*wingspan*]

Description: Wingspan and wingspan interpretation of the aircraft.

Source: User-entered (optional).

TABLE 63.12

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspan		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M
	AIXM	**Translations**	
	Aircraft Restriction [wingspan]	ICAO	ACFT WINGSPAN
		FAA	ACFT WINGSPAN
		Plain Text	aircraft wingspan
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ wingspanInterpretation		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (type = FORBID)	ICAO	GTR THAN <value>
		FAA	GTR THAN <value>
		Plain Text	Greater than <value>
	BELOW (type = PERMIT)	ICAO	LESS THAN <value>
		FAA	LESS THAN <value>
		Plain Text	Less than <value>

63.2.13 Aircraft Restriction [*weight*]

Description: Weight and weight interpretation of the aircraft.

Source: User-entered (optional).

TABLE 63.13

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weight		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 LB = 0.45359 KG		
	UomDistanceType	FAA	LB
		ICAO	KG
	AIXM	**Translations**	
	Aircraft Restriction [weight]	ICAO	ACFT
		FAA	ACFT
		Plain Text	aircraft
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ weightInterpretation		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (type = FORBID)	ICAO	OVR <value>
		FAA	OVR <value>
		Plain Text	Over <value>
	AT_OR_BELOW (type = PERMIT)	ICAO	AT BLW <value>
		FAA	AT BLW <value>
		Plain Text	And below <value>

63.2.14 Aircraft Restriction [*speed*]

Description: Speed and speed interpretation of the aircraft.

Source: User-entered (optional).

TABLE 63.14

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionCombination/ [logicalOperator OR]/ aircraft/ AircraftCharacteristic/ speed		
Datatype	ValSpeedType		
Min inclusive	0		
Enumeration	Units of Measure: 1 KT = 1.852 KM H		
	UomDistanceType	FAA	KT
		Plain Text	Knots
		ICAO	KM H
		Plain Text	Kilometers/hour
	AIXM	**Translations**	
	Aircraft Restriction [speed]	ICAO	APCH SPD
		FAA	approach speed

		Plain Text	APCH SPD
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ UsageCondition (object)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ usage/ ManoeuvringAreaUsage/ ConditionalCombination (object)/ AircraftCharacteristic (object)/ speedInterpretation (attribute)		
Enumeration	CodeValueInterpretationType		
	AIXM	**Translations**	
	ABOVE (type = FORBID)	ICAO	GTR THAN <value> KTS
		FAA	> <value> KTS
		Plain Text	GTR THAN <value> KTS

63.2.15 Other [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 63.15

Attribute	Value	
AIXM Path (UML)	AirportHeliport (feature)/ AirportHeliportAvailability (object)/ note (attribute)	
AIXM Element Xpath	AirportHeliport/ timeSlice/ AirportHeliportTimeSlice [interpretation TEMPDELTA]/ availability/ AirportHeliportAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

63.2.16 Due to [*note*]

Description: A reason for caution when operating at or near the facility. This is only a reason for closing (not an exception).

Source: User-selected (optional).

TABLE 63.16

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ note (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ annotation/ Note/ translatedNote/ LinguisticNote/ note		
Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	DUE TO WIP	ICAO	WIP
		FAA	WIP
		Plain Text	Work in progress
	DUE TO EQUIP	ICAO	PERSONNEL AND EQUIP WORKING
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	DUE TO SNOW REMOVAL	ICAO	SNOW REMOVAL

		FAA	SNOW REMOVAL
		Plain Text	Snow Removal
	DUE TO ICE REMOVAL	ICAO	ICE REMOVAL
		FAA	ICE REMOVAL
		Plain Text	Ice Removal
	DUE TO CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	DUE TO USER SUPPLIED FREE TEXT	ICAO	User Supplied
		FAA	
		Plain Text	

63.3 Q Codes

TABLE 63.17

AIXM Code	QCode	
ALL	Series	A
CLOSED	Q Code	QMRLC
	Scope	A
	Traffic	IV
	Purpose	NBO
ANY RESTRICTION/EXCEPTION COMBINATION	Q Code	QMRLT
	Scope	A
	Traffic	IV
	Purpose	NBO

63.4 Business Rules

63.4.1 Template Business Rules

a. If *designator* equals null then "Select a designator."

b. The addition of *restriction(s)* is optional. The user may be allowed to enter multiple *restrictions*.

c. The same *restriction* must not be entered more than one time per NOTAM (in both the CLSD TO and EXCLUDING sections)

d. A number (greater than zero) must be entered for *wingspan, weight*, and *speed* if selected.

e. When *restriction* equal to OTHER then enter text in additional text box. Please provide user with contraction look up TABLE.

f. For Runway Direction Closure, the must be a restriction or an exception in addition to CLSD. *Example*: RWY 04 CLSD TKOFF

63.4.2 Policy Business Rules

None.

63.4.3 Data Encoding Business Rules

a. For entering *designator* use a TimeSlice of type SNAPSHOT.

b. If closing a full runway (both runway directions), both runway directions need to be closed, or restricted.

c. For entering *operationalStatus* and additional restriction/exception information use a TimeSlice of type TEMPDELTA.

d. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

e. The timePosition for the SNAPSHOT should correspond to the beginPosition.

f. If *operationalStatus* is CLOSED (no restrictions or exceptions), then Availability should not be included in the Message.

g. If *operationalStatus* is LIMITED (one or more restrictions or exceptions), then Availability should be included in the Message, including either a list of permitted (RESERV) aircraft/operations or a list of forbidden (FORBID) aircraft/operations. The following is assumed:

(1) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is closed except for the listed operations, aircraft, or flights.

(2) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, then the Aerodrome is open except for the listed operations, aircraft, or flights.

(3) When *operationalStatus* is LIMITED, and a list of operations, aircraft, or flight types are listed under the type FORBID, and a list of operations, aircraft, or flight types are listed under the type RESERV, then the Aerodrome is open except for the listed operations and the exceptions to the listed operations.

h. For restrictions, *type* is FORBID. The values for wingspan Interpretation and weight Interpretation depend on *type* FORBID.

i. For exceptions, *type* is PERMIT. The values for wingspan Interpretation and weight Interpretation depend on *type* PERMIT.

j. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

k. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

l. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

63.5 Sample AIXM Message (Closed)

See section24.5 for example.

63.6 Sample AIXM Message (Closed with Exceptions)

See section 24.6 for example.

63.7 Translation Templates

63.7.1 FAA

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] WEF**

63.7.2 ICAO E Line

RWY *designator status* **[***restriction***] [***/restriction/restriction/…***] [EXC** *restriction***]**
[*/restriction/restriction/…***] WEF**

63.7.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway: *designator*

Status: *status*

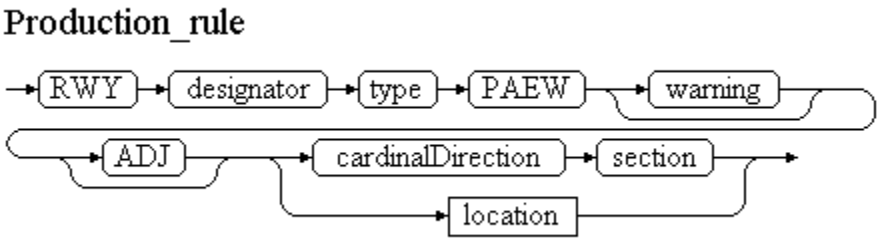
[Restriction(s): [*restriction***] [***/restriction/restriction/…***] [EXC** *restriction***] [***/restriction/restriction/…***]**
WEF]

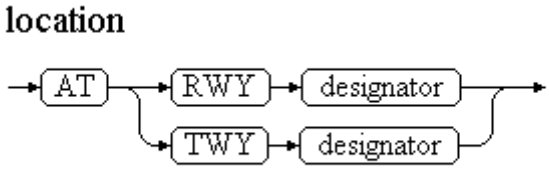
63.8 Additional Analysis

See AD, APRON, and TAXIWAY Closure for AIXM 5.1 sample message examples that are similar.

64 Water Lane/Ski Strip – Personnel and Equipment Working

Specify personnel warning for a runway. The Personnel and Equipment Working Warning maps to Runway Direction and Runway.





64.1 Example NOTAMs

1. !FAI 05/025 FAI RWY 2W/20W WEF 0905070901

Source: US NOTAM Repository

64.2 AIXM Mapping and Translation

64.2.1 Scenario Details

TABLE 64.1

Attribute	Value
Description	Specify a personnel warning for a water lane
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
NOTAM lifespan	
Start ASAP	No

64.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 64.2

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator

Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

64.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 64.3

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

64.2.4 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 64.4

Attribute	Value		
AIXM Path (UML)	Runway (feature) / RunwayDirection (feature)/ type (attribute)		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

64.2.5 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, personnel and equipment working near a runway).

Source: User-selected (required).

TABLE 64.5

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warning

Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	EQUIP	ICAO	PERSONNEL AND EQUIPMENT WORKING
		FAA	PAEW
		Plain Text	Personnel and Equipment Working
	INSPECTION	ICAO	INSPECTION
		FAA	INSPECTION
		Plain Text	inspection
	CALIBRATION	ICAO	CLBR WORK
		FAA	CLBR WORK
		Plain Text	calibration
	OTHER:CONSTRUCTION	ICAO	CONSTRUCTION
		FAA	CONSTRUCTION
		Plain Text	Construction
	OTHER:MAINTENANCE	ICAO	MAINTENANCE
		FAA	MAINTENANCE
		Plain Text	Maintenance

64.2.6 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the apron.

Source: Assumed.

TABLE 64.6

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningAdjacent (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningAdjacent		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES*	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1*
**Cannot have PAEW on an open runway. (RWY CLSD)*

64.2.7 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 64.7

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningDirection (object)
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningDirection

Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.0.*

64.2.8 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection).

TABLE 64.8

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningSection (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningSection		
Enumeration	CodeApronSectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ
		Plain Text	touch down zone
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

64.2.9 Runway Designator [*atRunway*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 64.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ atRunway (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ atRunway		
xlink Path	xlink href to feature Runway		
Enumeration	**AIXM**	**Translations**	
	Full Runway	ICAO	FOR RWY <*designator*>
		FAA	FOR RWY <*designator*>
		Plain Text	For Runway <*designator*>
	Runway End	ICAO	FOR APCH END RWY <*designator*>
		FAA	FOR APCH END RWY <*designator*>
		Plain Text	For Approach End Runway <*designator*>

64.2.10 Taxiway Designator [*atTaxiway*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data (optional).

TABLE 64.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ atTaxiway (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ atTaxiway		
xlink Path	xlink href to feature Taxiway		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <*designator*>
		FAA	FOR TWY <*designator*>
		Plain Text	For Taxiway <*designator*>

64.2.11 Other [*note*]

Description: Additional closure information not captured in drop-down menu.

Source: User-entered (optional).

TABLE 64.11

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ atTaxiway (attribute)	
AIXM Element Xpath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ atTaxiway	
Min length	1	
Max length	10000	
Description	propertyName	operationalStatus
	purpose	DESCRIPTION
Enumeration	TextNoteType	

64.3 Q Codes

TABLE 64.12

AIXM Code	Q Code	
ALL AIXM Codes	**Series**	**A**
	Q Code	QMRHW
	Scope	A
	Traffic	IV
	Purpose	NBO

64.4 Business Rules

64.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. EQUIP is the default value for the field *warning*. If an option other than EQUIP is selected, the NOTAM should read "PAEW *warning*".

c. When *warningAdjacent* equals null, then "Specify Adjacent."

d. The field for *warningDirection* is optional.

e. The fields for *atTaxiway* or *atRunway* are optional.

f. The fields for *warningDirection* and *warningSection*, the field for *atRunway*, or the field for *atTaxiway* should be filled out. Only one set should be entered.

64.4.2 Policy Business Rules

None.

64.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT.

b. For entering *warning*, use a TimeSlice of type TEMPDELTA. If a *warning* is not selected, the default value is EQUIP.

c. For entering *warningDirection* and *warningSection* use TimeSlice of type TEMPDELTA. If warning*Direction or warningSection* are not entered by the user, then remove this from the AIXM message. The field *warningAdjacent* must be YES.

d. The elements of type *atTaxiway* or *atRunway* are optional and must use a TimeSlice of type TEMPDELTA.

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. The timePosition for the SNAPSHOT should correspond to the beginPosition.

g. Personnel and Equipment Working must be defined for the entire runway by indicating both Runway Directions.

h. An xlink:href is required and should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

i. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

j. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

64.5 Sample AIXM Message

See section 39.5 for sample message.

64.6 Translation Templates

64.6.1 FAA

RWY *designator* **PAEW [***reason***] [***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

64.6.2 ICAO E Line

RWY *designator* **PAEW [***reason***] [***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

64.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Warning: PAEW *reason*

Affected Runway: *designator*

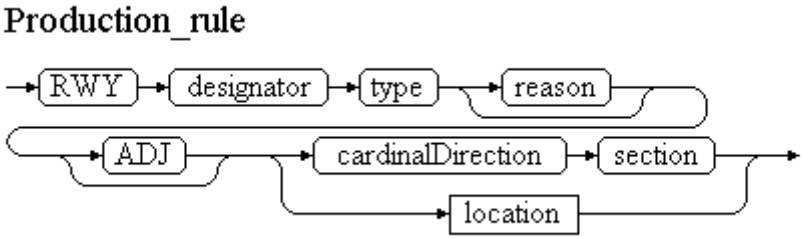
[Location: [*warningAdjacent*] [*warningDirection*] [*warningSection*] [*atTaxiway*] [*atRunway*]**]**

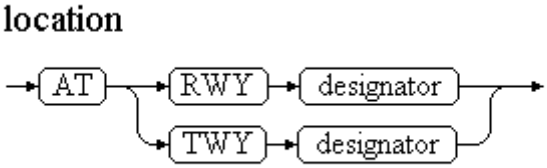
64.7 Additional Analysis

None.

65 Water Lane/Ski Strip - Wildlife Hazard

Specify a wildlife hazard for a water lane. The Wildlife Hazard Warning maps to Runway.





65.1 Example NOTAMs

1. !LXT 08/010 LXT RWY 18/36 BIRD ACTIVITY

Source: US NOTAM Repository

65.2 AIXM Mapping and Translation

65.2.1 Scenario Details

TABLE 65.1

Attribute	Value
Description	Specify a wildlife hazard for one or more runways
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection
Feature Path	aixm:RunwayDirection
NOTAM lifespan	
Start ASAP	Yes

65.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required, if closing runway direction).

TABLE 65.2

Attribute	Value
AIXM Path (UML)	RunwayDirection(feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType

Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

65.2.3 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required, if closing full runway).

TABLE 65.3

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

65.2.4 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 65.4

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

65.2.5 Warning [*warning*]

Description: A reason for caution when operating at the facility (for example, animal hazard (birds, dogs, elk) on or near a runway).

Source: User-selected (required).

TABLE 65.5

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warning (attribute)
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warning

Enumeration	CodeAirportWarningType		
	AIXM	**Translations**	
	BIRD	ICAO	BIRD ACT
		FAA	BIRD ACTIVITY
		Plain Text	bird activity
	ANIMAL	ICAO	ANIMAL HAZARD
		FAA	WILDLIFE HAZARD
		Plain Text	wildlife hazard

65.2.6 Adjacent [warningAdjacent]

Description: A code indicating whether the warning reason is on or adjacent to the apron.

Source: User-selected (required).

TABLE 65.6

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningAdjacent (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningAdjacent		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	ADJACENT
		FAA	ADJ
		Plain Text	Adjacent
	NO	ICAO	…
		FAA	…
		Plain Text	…

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1*

65.2.7 Cardinal Direction [warning*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 65.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningDirection (object)		
AIXM Element X Path	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningDirection		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE

		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.0.*

65.2.8 Runway Section [warning*Section*]

Description: A code indicating the position of an item on a surface of a runway.

Source: User-selected (optional, required with warningDirection)

TABLE 65.8

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ warningSection (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ warningSection		
Enumeration	CodeApronSectionType		
	AIXM	**Translations**	
	TDZ	ICAO	TDZ
		FAA	TDZ
		Plain Text	touch down zone
	CL	ICAO	CL
		FAA	CNTRLN
		Plain Text	center line
	EDGE	ICAO	EDGE
		FAA	EDGE
		Plain Text	edge
	END	ICAO	END
		FAA	END
		Plain Text	end
	SIDE	ICAO	SIDE
		FAA	SIDE
		Plain Text	side

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

65.2.9 Runway Designator [*forRunway*]

Description: The full textual designator of the landing and take-off direction, or full runway.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (optional).

TABLE 65.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ forRunway (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ forRunway		
Type	TextDesignatorType		
Min length	1		
Max length	16		
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*		
Enumeration	**AIXM**	**Translations**	
	Full Runway	ICAO	FOR RWY <designator>
		FAA	FOR RWY <designator>
		Plain Text	For Runway <designator>
	Runway End	ICAO	FOR APCH END RWY <designator>
		FAA	FOR APCH END RWY <designator>
		Plain Text	For Approach End Runway <designator>

65.2.10 Taxiway Designator [*forTaxiway*]

Description: The full textual designator used to identify a taxiway at an aerodrome/heliport which has more than one.
Source: User-selected from baseline data (optional).

TABLE 65.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayDirection (feature)/ ManoeuvringAreaAvailability (object)/ forTaxiway (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ availability/ ManoeuvringAreaAvailability/ forTaxiway		
Type	TextDesignatorType (Character1Type)		
Min length	1		
Max length	16		
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	FOR TWY <designator>
		FAA	FOR TWY <designator>
		Plain Text	For Taxiway <designator>

65.3 Q Codes

TABLE 65.11

AIXM Code	Q Code	
ALL	**Series**	**A**
BIRD	Q Code	QMRXX (runway plain language)
	Scope	A
	Traffic	IV

	Purpose	BO
ANIMAL	Q Code	QMRXX (runway plain language)
	Scope	A
	Traffic	IV
	Purpose	BO

65.4 Business Rules

65.4.1 Template Business Rules

a. If *designator* equals null, then "Select a designator."

b. When *reason* equal to null, then "Select a warning reason."

c. When *warningAdjacent* equals null, then "Specify Adjacent."

d. The field for *warningDirection* is optional.

65.4.2 Policy Business Rules

None.

65.4.3 Data Encoding Business Rules

a. For entering *designator*, use a TimeSlice of type SNAPSHOT.

b. For entering *warning*, use a TimeSlice of type TEMPDELTA.

c. For entering warningDirection and *warningSection*, use TimeSlice of type TEMPDELTA. If warning*Direction or warningSection* is not entered by the user, then remove this from the AIXM message.

d. The elements of type *atTaxiway* or *atRunway* are optional and must use a TimeSlice of type TEMPDELTA.

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. The timePosition for the SNAPSHOT should correspond to the beginPosition.

g. Wildlife Hazard should not be defined for runway direction. For encoding the AIXM, define both runway directions.

h. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

i. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

j. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

65.5 Sample AIXM Message

See section 40.5 for sample message.

65.6 Translation Templates

65.6.1 FAA

RWY *designator reason* **[***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

65.6.2 ICAO E Line

RWY *designator reason* **[***warningAdjacent***] [**warning*Direction***] [***warningSection***] [***atTaxiway***] [***atRunway***] WEF**

65.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Warning: *reason*

Affected Runway: *designator*

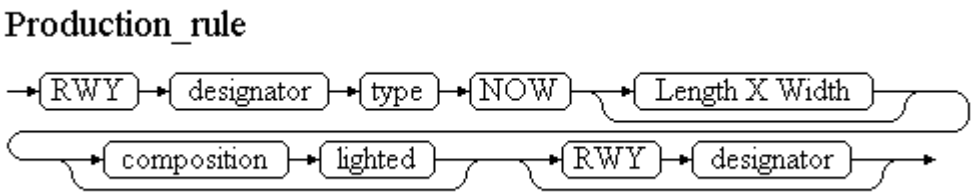
[Location: [*warningAdjacent*] [*warningDirection*] [*warningSection*] [*atTaxiway*] [*atRunway*]**]**

65.7 Additional Analysis

None.

66 Water Lane/Ski Strip – Properties Change

This type of NOTAM is used to report a change in the length, width, composition, or designator of a runway.



66.1 Example NOTAMs

1. !AAA 05/006 AAA RWY 14/32 NOW 2865X135
2. !ANW 06/001 ANW RWY 12/30 NOW RWY 13/31
3. !PRC SJN RWY 2/20 NOW RWY 3/21*

Source: US NOTAM Repository

***Source:** FAA Order JO 7930.2

66.2 AIXM Mapping and Translation

66.2.1 Scenario Details

TABLE 66.1

Attribute	Value
Description	Runway Information Change
Maps to Keyword:	Runway
Feature Type Id	AirportHeliport/ Runway
Feature XPath	aixm:Runway
NOTAM lifespan	
Start ASAP	No

66.2.2 Baseline Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required if baseline data permits)

TABLE 66.2

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

66.2.3 New Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-entered (optional).

TABLE 66.3

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:PERMDELTA]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

66.2.4 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 66.4

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

66.2.5 Baseline Data Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: Baseline Data.

TABLE 66.5

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

66.2.6 Baseline Data Runway Width [*widthStrip*]

Description: The width of the runway.

Source: Baseline Data.

TABLE 66.6

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ widthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

66.2.7 Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: User-entered (optional)

TABLE 66.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: PERMDELTA]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

66.2.8 Runway Width [*widthStrip*]

Description: The width of the runway.

Source: User-entered (optional)

TABLE 66.8

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: PERMDELTA]/ widthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

66.2.9 Baseline Composition [*composition*]

Description: A code indicating the composition of an aerodrome/heliport related surface. For example, asphalt, concrete, etc.

Source: Baseline data.

TABLE 66.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ composition (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: SNAPSHOT]/ surfaceProperties/ SurfaceCharacteristics/ composition		
Enumeration	CodeSurfaceCompositionType		
	AIXM	**Translations**	
	GRAVEL	ICAO	GRVL
		FAA	GRVL
		Plain Text	Gravel
	WATER	ICAO	WATER
		FAA	WTR
		Plain Text	Water
	SNOW	ICAO	SN
		FAA	SN
		Plain Text	Snow

66.2.10 Composition [*composition*]

Description: A code indicating the composition of an aerodrome/heliport related surface. For example, asphalt, concrete, etc.

Source: User-selected (optional).

TABLE 66.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ composition (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ surfaceProperties/ SurfaceCharacteristics/ composition		
Enumeration	CodeSurfaceCompositionType		
	AIXM	**Translations**	
	GRAVEL	ICAO	PRECISION
		FAA	PRECISION
		Plain Text	Precision
	WATER	ICAO	NONPRECISION
		FAA	NONPRECISION
		Plain Text	Non-Precision
	SNOW	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard

66.2.11 Lighting status [*lighted*]

Description: A code indicating whether the runway is lighted or unlighted (if known).

Source: Baseline Data.

TABLE 66.11

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ lighted (attribute)	
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ lighted	
Enumeration	CodeLightedType	
	AIXM	**Translations**
	LIGHTED	ICAO: LGTD
		FAA: LGTD
		Plain Text: lighted
	UNLIGHTED	ICAO: UNLGTD
		FAA: UNLGTD
		Plain Text: unlighted
	UNKNOWN	ICAO: …
		FAA: …
		Plain Text: …

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

66.2.12 Lighting status [*lighted*]

Description: A code indicating whether the runway is lighted or unlighted (if known).

Source: User-selected (optional).

TABLE 66.12

Attribute	Value	
AIXM Path (UML)	Runway (feature)/ lighted (attribute)	
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMP/PERMDELTA]/ lighted	
Enumeration	CodeLightedType	
	AIXM	**Translations**
	LIGHTED	ICAO: LGTD
		FAA: LGTD
		Plain Text: lighted
	UNLIGHTED	ICAO: UNLGTD
		FAA: UNLGTD
		Plain Text: unlighted
	UNKNOWN	ICAO: …
		FAA: …
		Plain Text: …

NOTE: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

66.3 Q Codes

TABLE 66.13

AIXM Code	Q Code	
ALL	**Series**	**A**
LENGTH X WIDTH	Q Code	QMRLL
	Scope	A
	Traffic	IV
	Purpose	NBO
COMPOSITION	Q Code	QMRXX
	Scope	A

	Traffic	IV
	Purpose	NBO
LIGHTED	Q Code	QMRCL
	Scope	A
	Traffic	IV
	Purpose	NBO

66.4 Business Rules

66.4.1 Template Business Rules

a. When *length* equal to null, *width* equal to null,*composition* equal to null, *lighted* equal to null, and *designatorNew* equal to null, then "Specify at least one item."

b. When *length* not equal to null and *length* equal to 0, then "Specify a length greater than 0."

c. When *width* not equal to null and *width* equal to 0, then "Specify a width greater than 0."

d. When *length* not equal to null and *length* contains "(\.)", then "Specify a length as a whole number."

e. When *width* not equal to null and *width* contains "(\.)", then "Specify a width as a whole number."

f. User must enter a full runway (both sides).

g. Translate length and width of runway to metric units (meters) for ICAO.

h. At a minimum, one full field must be entered to submit the NOTAM.

66.4.2 Policy Business Rules

New composition must designate lighting if known (FAA Order JO 7930.2). If *composition* is not equal to null and *lighted* is equal to null then "Specify if runway is lighted."

66.4.3 Data Encoding Business Rules

a. For entering the Baseline Data, use a TimeSlice under the feature Runway of type SNAPSHOT.

b. For entering the new information, use a TimeSlice under the feature Runway of type TEMPDELTA.

c. If the NOTAM end time is equal to 90 days or more (EST), use interpretation = PERMDELTA (instead of TEMPDELTA).

d. The timePosition for the SNAPSHOT should correspond to the beginPosition.

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

h. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

66.5 Sample AIXM Message

See section 45.5 for example message.

66.6 Translation Templates

66.6.1 FAA

RWY *designator* **NOW** *length* **X** *width composition* **/** *lighted* **RWY** *designatorNew*

66.6.2 ICAO E Line

RWY *designator* **NOW** *length* **X** *width composition* **/** *lighted* **RWY** *designatorNew*

66.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Information Change

Affected Runway: **RWY** *designator*

Length: *length*

Width: *width*

Composition: *composition*

Lighted: *lighted*

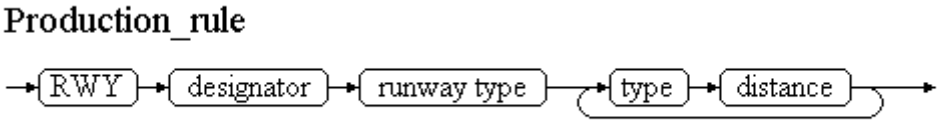
New Designator: **RWY** *designatorNew*

66.7 Additional Analysis

None.

67 Water Lane – Distance Available

Specify the distance available for use on a runway



67.1 Example NOTAMs

1. !RWY 32 TORA 6976 TODA 6976 ASDA 6601 LDA 6601
2. !RWY 14 TORA 10067 TODA 10067 ASDA 10067 LDA 10067
3. !RWY 17L LDA 8700

Source: US NOTAM Repository

67.2 AIXM Mapping and Translation

67.2.1 Scenario Details

TABLE 67.1

Attribute	Value
Description	Specify the distance available for use on a runway
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
NOTAM lifespan	
Start ASAP	

67.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 67.2

Attribute	Value
AIXM Path (UML)	RunwayDirection (feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

67.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 67.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

67.2.4 Type [*type*]

Description: A conventional operational distance declared for a runway direction. For example, TORA, TODA, LDA, ASDA.

Source: User-entered (minimum one field required).

TABLE 67.4

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	LDA	ICAO	LDA
		FAA	LDA
		Plain Text	landing distance available
	TORA	ICAO	TORA
		FAA	TORA
		Plain Text	take-off run available
	TODA	ICAO	TODA
		FAA	TODA
		Plain Text	take-off distance available
	ASDA	ICAO	ASDA
		FAA	ASDA
		Plain Text	accelerate-stop distance available

67.2.5 Distance [*distance*]

Description: The value of the declared distance.

Source: User-entered.

TABLE 67.5

Attribute	Value
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/

	RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

67.2.6 Baseline Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Examples: 11/29, 18/36.

Source: User-selected direction from baseline data (required).

TABLE 67.6

Attribute	Value
AIXM Path (UML)	Runway/ designator
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice/ designator
Datatype	TextDesignatorType
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

67.2.7 Baseline Data Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: Baseline Data.

TABLE 67.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

67.2.8 Baseline Data Runway Width [*widthStrip*]

Description: The width of the runway.

Source: Baseline Data.

TABLE 67.8

Attribute	Value
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ widthStrip

Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

67.3 Q Codes

TABLE 67.9

AIXM Code	Q Code	
ALL	**Series**	**A**
LDA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TORA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TODA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
ASDA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO

67.4 Business Rules

67.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* equal null, then "Specify at least one distance."

c. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* less than or equal to 0, then "Specify a distance greater then 0."

d. When *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is greater than or equal to the length of the permanent value, then "Specify a distance less then the length of the permanent value. "If no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value."

e. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* is less than 2/3 of the length of the permanent value, then "The distance available is less than 2/3 of the permanent value. Do you want to continue?" Allow the user to continue if they agree. Again, if no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value.

f. Specify only one *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) per NOTAM.

g. Only one distance (*distanceTORA*, *distanceTODA*, *distanaceASDA*, *distanceLDA*) is required, the remaining distances are optional.

h. If *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is null, do not display the text "TORA" ("TODA", "ASDA", "LDA") in the NOTAM.

67.4.2 Policy Business Rules

None.

67.4.3 Data Encoding Business Rules

a. For entering the *designator*, use a TimeSlice of type SNAPSHOT.

b. For entering the *type* and *distance*, use a TimeSlice of type TEMPDELTA.

c. The baseline Runway information *lengthStrip* and *widthStrip* should be included in the feature Runway.

d. The timePosition for the SNAPSHOT should correspond to the beginPosition.

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator, and lengthStrip; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

h. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

67.5 Sample AIXM Message

See section 43.5 for example message.

67.6 Translation Templates

67.6.1 FAA

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

67.6.2 ICAO E Line

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

67.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Runway: *designator*

Take-off Run Avaiable: *distanceTORA*

Take-off Distance Available: *distanceTODA*

Accelerate-stop Distance Available: *distanceASDA*
Landing Distance Available: *distanceLDA*

67.7 Additional Analysis

None.

68 Water Lane – Threshold Displacement

Specify that a threshold has been relocated.

68.1 Example NOTAMs

1. !ALS ALS RWY 20 THR DSPLCD 600 NONSTD MARKING

Source: US NOTAM Repository

68.2 AIXM Mapping and Translation

68.2.1 Scenario Details

TABLE 68.1

Attribute	Value
Description	Specify which runway threshold has been relocated.
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
NOTAM lifespan	
Start ASAP	No

68.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required)

TABLE 68.2

Attribute	Value
AIXM Path (UML)	RunwayDirection (feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

68.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 68.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

68.2.4 Type [type]

Description: A conventional operational distance declared for a runway direction.

Source: Assumed.

TABLE 68.4

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	OTHER:THRESHOLD	ICAO	
		FAA	
		Plain Text	

68.2.5 Distance [*distance*]

Description: The value of the threshold displacement.

Source: User-entered.

TABLE 68.5

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

68.2.6 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: Baseline Data.

TABLE 68.6

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ approachMarkingType		
Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	PRECISION	ICAO	PRECISION
		FAA	PRECISION
		Plain Text	Precision
	NONPRECISION	ICAO	NONPRECISION
		FAA	NONPRECISION
		Plain Text	Non-Precision
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	unmarked

68.2.7 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: User-selected (optional).

TABLE 68.7

Attribute	Value		
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)		
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ approachMarkingType		
Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	PRECISION	ICAO	PRECISION
		FAA	PRECISION
		Plain Text	Precision
	NONPRECISION	ICAO	NONPRECISION
		FAA	NONPRECISION
		Plain Text	Non-Precision
	NON_STANDARD	ICAO	NONSTD
		FAA	NONSTD
		Plain Text	Non-Standard
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	unmarked

68.2.8 Baseline Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Examples: 11/29, 18/36.

Source: User-selected direction from baseline data (required).

TABLE 68.8

Attribute	Value
AIXM Path (UML)	Runway/ designator
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice/ designator
Datatype	TextDesignatorType
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

68.2.9 Baseline Data Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: Baseline Data.

TABLE 68.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

68.2.10 Baseline Data Runway Width [*widthStrip*]

Description: The width of the runway.

Source: Baseline Data.

TABLE 68.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ widthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

68.3 Q Codes

TABLE 68.11

AIXM Code	Q Code	
OTHER:THRESHOLD	**Series**	**A**
	Q Code	QMTCM
	Scope	A
	Traffic	IV

	Purpose	NBO

68.4 Business Rules

68.4.1 Template Business Rules

a. When *distance* equals null, then "Specify a distance."

b. When *distance* equals 0, then "Specify a distance greater then 0."

c. When *distance* equals the length of the runway, then "Specify a distance less then the length of the runway."

d. When *distance* is greater than 1/3 of the length of the runway, then "The displaced distance is greater than 1/3 of the runway length. Do you want to continue?" Allow the user to continue if they agree.

68.4.2 Policy Business Rules

None.

68.4.3 Data Encoding Business Rules

a. For entering the *type* and *distance*, use a TimeSlice under the feature RunwayCentrelinePoint of type TEMPDELTA.

b. For entering the *designator* and the baseline information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type SNAPSHOT.

c. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

d. The baseline Runway information *lengthStrip* and *widthStrip* should be included in the feature Runway.

e. The timePosition for the SNAPSHOT should correspond to the beginPosition.

f. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

g. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

h. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

i. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

68.5 Sample AIXM Message

See section 44.5 for sample message.

68.6 Translation Templates

68.6.1 FAA

RWY *designator THR DSPLCD distance approachMarkingType*

68.6.2 ICAO E Line

RWY *designator THR DSPLCD distance approachMarkingType*

68.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Threshold Displacement

Affected Runway: *designator*

Threshold Displaced: *distance* ft

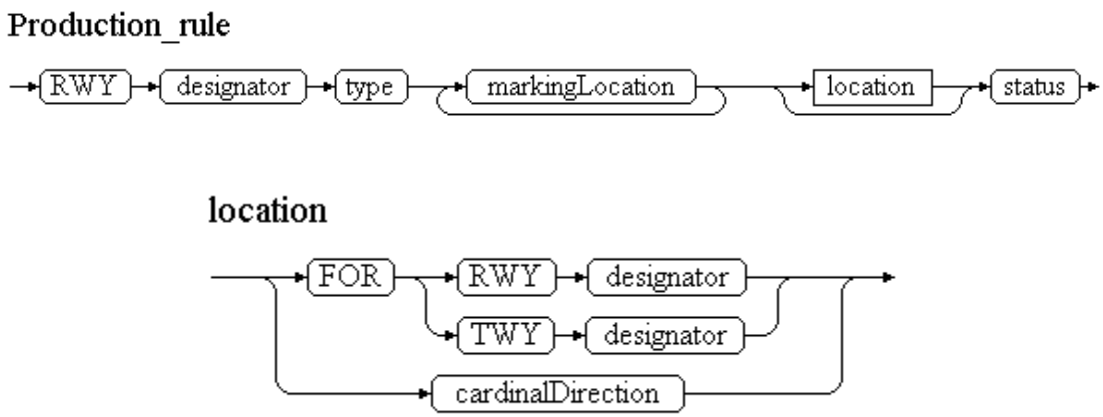
Marking: *approachMarkingType*

68.7 Additional Analysis

None.

69 Water Lane – Ground Marking Status

Specify that the runway marking has been changed.



69.1 Example NOTAMs

1. !AMA 10/011 AMA RWY 4/22 EDGELINE MARKINGS NONSTD
2. !VNY 04/008 VNY RWY 16R/34L EDGE MARKINGS OBSCD
3. !TEB 09/082 TEB RWY 1/19 MANDATORY HOLD SHORT MARKINGS ON RWY 6/24 UNMARKED

Source: US NOTAM Repository

69.2 AIXM Mapping and Translation

69.2.1 Scenario Details

TABLE 69.1

Attribute	Value
Description	Specify the status of the markings on a runway.
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Markings
Feature XPath	aixm:RunwayMarking
NOTAM lifespan	
Start ASAP	Yes
Recurring Schedule	No
Prior Permission	No

69.2.2 Designator [*designator*] – Runway

Description The full textual designator of the runway, used to uniquely identify it at an aerodrome/heliport which has more than one.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 69.2

Attribute	Value
AIXM Path (UML)	Runway(feature)/ designator (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

69.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 69.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

69.2.4 Marking Type [*markingLocation*]

Description: A code indicationg the location of the marking relative to the surface.

Source: User-selected (*markingLocation* or *type* required)

TABLE 69.4

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ markingLocation (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ markingLocation		
Enumeration	CodeRunwaySectionType		
	AIXM	**Translations**	
	OTHER:THR_BUOYS	ICAO	THRESHOLD BUOYS
		FAA	THRESHOLD BUOYS
		Plain Text	Threshold Buoys

**Should appear in one menu with Marking Type [type]*

69.2.5 Runway Designator [*atRunway*]

Description: The full textual designator of the landing and take-off direction, or full runway. *Examples*: 27, 35L, 01R.

Source: User-selected from baseline data (optional)

TABLE 69.5

Attribute	Value		
AIXM Path (UML)	RunwayMarking(feature)/ atRunway (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ atRunway		
xlink Path	xlink href to feature Runway		
Enumeration	**AIXM**	**Translations**	
	Full Runway	ICAO	AT RWY <designator>
		FAA	AT RWY <designator>
		Plain Text	at Runway <designator>
	Runway End	ICAO	AT APCH END RWY <designator>
		FAA	AT APCH END RWY <designator>
		Plain Text	at Approach End Runway <designator>

69.2.6 Taxiway Designator [*atTaxiway*]

Description: The full textual designator used to identify an taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data. (optional)

TABLE 69.6

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ atTaxiway (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ atTaxiway		
xlink Path	xlink href to feature Taxiway		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	AT TWY <designator>
		FAA	AT TWY <designator>
		Plain Text	at Taxiway <designator>

69.2.7 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional)

TABLE 69.7

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ cardinalDirection (attribute)		
AIXM Element X Path	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ cardinalDirection		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE

		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

***Note**: Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

69.2.8 Status [*condition*]

Description: The quality of the marking, such as good, fair, poor, and other (obscured).

Source: User-selected (required).

TABLE 69.8

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ condition (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ condition		
Enumeration	CodeMarkingConditionType		
	AIXM	**Translations**	
	OTHER:OBSC	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Markings Obscured
	OTHER:PART_OBSC	ICAO	PARTIALLY OBSCURED
		FAA	PARTIALLY OBSC
		Plain Text	Partially Obscured
	OTHER:UNAVBL	ICAO	UNAVBL
		FAA	UNAVBL
		Plain Text	Unavailable
	OTHER:OTS	ICAO	UNSERVICEABLE (U/S)
		FAA	OTS
		Plain Text	Out of service

69.2.9 Marking Type [*runwayMarkingType*]

Description: Type of marking related to landing categories such as precision, non-precision and basic.

Source: User-selected (required).

TABLE 69.9

Attribute	Value
AIXM Path (UML)	RunwayMarking (feature)/ runwayMarkingType (attribute)
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ runwayMarkingType

Enumeration	CodeRunwayMarkingType		
	AIXM	**Translations**	
	NON_STANDARD	ICAO	NONSTD MARKINGS
		FAA	NONSTD MARKINGS
		Plain Text	Non-Standard Markings
	NONE	ICAO	UNMARKED
		FAA	UNMARKED
		Plain Text	Unmarked
	PRECISION	ICAO	PRECISION MARKINGS
		FAA	PRECISION MARKINGS
		Plain Text	Precision Markings
	NONPRECISION	ICAO	NONPRECISION MARKINGS
		FAA	NONPRECISION MARKINGS
		Plain Text	Non-Precision Markings

69.3 Q Codes

TABLE 69.10

AIXM Code	Q Code	
ALL	**Series**	**A**
	Q Code	QMMXX
	Scope	A
	Traffic	IV
	Purpose	MNBO

69.4 Business Rules

69.4.1 Template Business Rules

a. If *designator* equal to null then "Select a designator."

b. When *type* equals null then "Select a Marking Type."

c. One of the element type, *markingLocation* is required. Multiple are allowed.

d. Location is optional, but the user must not enter more than one of the following: *atTaxiway, atRunway,* or *cardinalDirection.*

e. If *condition* or *runwayMarkingType* are null, then "Select the Marking Status."

69.4.2 Policy Business Rules

None.

69.4.3 Data Encoding Business Rules

a. For entering the *designator* and *approachMarkingType* (optional), use a TimeSlice under the feature RunwayDirection of type SNAPSHOT.

b. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

c. The timePosition for the SNAPSHOT should correspond to the beginPosition.

d. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

e. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

f. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

g. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

69.5 Sample AIXM Message

See section 34.5 for example message.

69.6 Translation Templates

69.6.1 FAA

RWY *designator* [*markingLocation*] [*location*] [*condition*] [*runwayMarkingType*]

69.6.2 ICAO E Line

RWY *designator* [*markingLocation*] [*location*] [*condition*] [*runwayMarkingType*]

69.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *afffectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway Surface Markings

Affected Runway: *designator*

Marking Type: [*markingLocation*]

Location: [*location*]

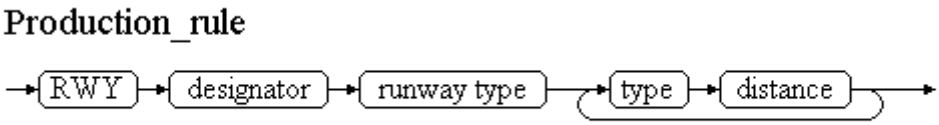
Status: [*condition*] [*runwayMarkingType*]

69.7 Additional Analysis

None.

70 Ski Strip – Distance Available

Specify the distance available for use on a runway



70.1 Example NOTAMs

1. !RWY 32 TORA 6976 TODA 6976 ASDA 6601 LDA 6601
2. !RWY 14 TORA 10067 TODA 10067 ASDA 10067 LDA 10067
3. !RWY 17L LDA 8700

Source: US NOTAM Repository

70.2 AIXM Mapping and Translation

70.2.1 Scenario Details

TABLE 70.1

Attribute	Value
Description	Specify the distance available for use on a runway
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
NOTAM lifespan	
Start ASAP	

70.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required).

TABLE 70.2

Attribute	Value
AIXM Path (UML)	RunwayDirection (feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

70.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 70.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

70.2.4 Type [*type*]

Description: A conventional operational distance declared for a runway direction. For example, TORA, TODA, LDA, ASDA.

Source: User-entered (minimum one field required).

TABLE 70.4

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	LDA	ICAO	LDA
		FAA	LDA
		Plain Text	landing distance available
	TORA	ICAO	TORA
		FAA	TORA
		Plain Text	take-off run available
	TODA	ICAO	TODA
		FAA	TODA
		Plain Text	take-off distance available
	ASDA	ICAO	ASDA
		FAA	ASDA
		Plain Text	accelerate-stop distance available

70.2.5 Distance [*distance*]

Description: The value of the declared distance.

Source: User-entered.

TABLE 70.5

Attribute	Value
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/

	RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

70.2.6 Baseline Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Examples: 11/29, 18/36.

Source: User-selected direction from baseline data (required).

TABLE 70.6

Attribute	Value
AIXM Path (UML)	Runway/ designator
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice/ designator
Datatype	TextDesignatorType
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

70.2.7 Baseline Data Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: Baseline Data.

TABLE 70.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

70.2.8 Baseline Data Runway Width [*widthStrip*]

Description: The width of the runway.

Source: Baseline Data.

TABLE 70.8

Attribute	Value
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ widthStrip
Datatype	ValDistanceType

Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

70.3 Q Codes

TABLE 70.9

AIXM Code	Q Code	
ALL	**Series**	**A**
LDA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TORA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
TODA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO
ASDA	Q Code	QMDCH
	Scope	A
	Traffic	IV
	Purpose	NBO

70.4 Business Rules

70.4.1 Template Business Rules

a. When *designator* equal to null, then "Specify a runway."

b. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* equal null, then "Specify at least one distance."

c. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* less than or equal to 0, then "Specify a distance greater then 0."

d. When *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is greater than or equal to the length of the permanent value, then "Specify a distance less then the length of the permanent value. "If no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value."

e. When *distanceTORA*, *distanceTODA*, *distanceASDA*, and *distanceLDA* is less than 2/3 of the length of the permanent value, then "The distance available is less than 2/3 of the permanent value. Do you want to continue?" Allow the user to continue if they agree. Again, if no permanent values are available for the TODA, TORA, ASDA, or LDA, use the length of the runway as the permanent value.

f. Specify only one *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) per NOTAM.

g. Only one distance (*distanceTORA*, *distanceTODA*, *distanaceASDA*, *distanceLDA*) is required, the remaining distances are optional.

h. If *distanceTORA* (*distanceTODA*, *distanceASDA*, *distanceLDA*) is null, do not display the text "TORA" ("TODA", "ASDA", "LDA") in the NOTAM.

70.4.2 Policy Business Rules

None.

70.4.3 Data Encoding Business Rules

a. For entering the *designator*, use a TimeSlice of type SNAPSHOT.

b. For entering the *type* and *distance*, use a TimeSlice of type TEMPDELTA.

c. The baseline Runway information *lengthStrip* and *widthStrip* should be included in the feature Runway.

d. The timePosition for the SNAPSHOT should correspond to the beginPosition.

e. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

f. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

g. The associated Runway should have interpretation SNAPSHOT and contain the designator, and lengthStrip; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

h. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

70.5 Sample AIXM Message

See section 43.5 for example message.

70.6 Translation Templates

70.6.1 FAA

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

70.6.2 ICAO E Line

RWY *designator* **TORA** *distanceTORA* **TODA** *distanceTODA* **ASDA** *distanceASDA* **LDA** *distanceLDA* **WEF**

70.6.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Runway: *designator*

Take-off Run Avaiable: *distanceTORA*
Take-off Distance Available: *distanceTODA*
Accelerate-stop Distance Available: *distanceASDA*
Landing Distance Available: *distanceLDA*

70.7 Additional Analysis

None.

71 Ski Strip – Threshold Displacement

Specify that a threshold has been relocated.

71.1 Example NOTAMs

1. !ALS ALS RWY 20 THR DSPLCD 600 NONSTD MARKING

Source: US NOTAM Repository

71.2 AIXM Mapping and Translation

71.2.1 Scenario Details

TABLE 71.1

Attribute	Value
Description	Specify which runway threshold has been relocated.
Maps to Keyword:	RunwayDirection
Feature Type Id	AirportHeliport/ Runway/ RunwayDirection/ RunwayCentrelinePoint
Feature XPath	aixm:RunwayCentrelinePoint
NOTAM lifespan	
Start ASAP	No

71.2.2 Designator [*designator*] – Runway Direction

Description: The full textual designator of the landing and take-off direction.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (required)

TABLE 71.2

Attribute	Value
AIXM Path (UML)	RunwayDirection (feature)/ designator (attribute)
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ designator
Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

71.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 71.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

71.2.4 Type [*type*]

Description: A conventional operational distance declared for a runway direction.

Source: Assumed.

TABLE 71.4

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Enumeration	CodeDeclaredDistanceType		
	AIXM	**Translations**	
	OTHER:THRESHOLD	ICAO	
		FAA	
		Plain Text	

71.2.5 Distance [*distance*]

Description: The value of the threshold displacement.

Source: User-entered.

TABLE 71.5

Attribute	Value		
AIXM Path (UML)	RunwayCentrelinePoint (feature)/ RunwayDeclaredDistance (object)/ type (attribute)		
AIXM Element XPath	RunwayCentrelinePoint/ timeSlice/ RunwayCentrelinePointTimeSlice [interpretation: TEMPDELTA]/ associated DeclaredDistance/ RunwayDeclaredDistance/ type		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

71.2.6 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: Baseline Data.

TABLE 71.6

Attribute	Value	
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)	
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:SNAPSHOT]/ approachMarkingType	
Enumeration	CodeRunwayMarkingType	
	AIXM	**Translations**
	PRECISION	ICAO PRECISION
		FAA PRECISION
		Plain Text Precision
	NONPRECISION	ICAO NONPRECISION
		FAA NONPRECISION
		Plain Text Non-Precision
	NON_STANDARD	ICAO NONSTD
		FAA NONSTD
		Plain Text Non-Standard
	NONE	ICAO UNMARKED
		FAA UNMARKED
		Plain Text unmarked

71.2.7 Approach Marking Type [*approachMarkingType*]

Description: A conventional operational distance declared for a runway direction.

Source: User-selected (optional).

TABLE 71.7

Attribute	Value	
AIXM Path (UML)	RunwayDirection (feature)/ approachMarkingType (attribute)	
AIXM Element XPath	RunwayDirection/ timeSlice/ RunwayDirectionTimeSlice [interpretation:TEMPDELTA]/ approachMarkingType	
Enumeration	CodeRunwayMarkingType	
	AIXM	**Translations**
	PRECISION	ICAO PRECISION
		FAA PRECISION
		Plain Text Precision
	NONPRECISION	ICAO NONPRECISION
		FAA NONPRECISION
		Plain Text Non-Precision
	NON_STANDARD	ICAO NONSTD
		FAA NONSTD
		Plain Text Non-Standard
	NONE	ICAO UNMARKED
		FAA UNMARKED
		Plain Text unmarked

71.2.8 Baseline Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Examples: 11/29, 18/36.

Source: User-selected direction from baseline data (required).

TABLE 71.8

Attribute	Value
AIXM Path (UML)	Runway/ designator
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice/ designator
Datatype	TextDesignatorType
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

71.2.9 Baseline Data Runway Length [*lengthStrip*]

Description: The length of the runway.

Source: Baseline Data.

TABLE 71.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ lengthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ lengthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

71.2.10 Baseline Data Runway Width [*widthStrip*]

Description: The width of the runway.

Source: Baseline Data.

TABLE 71.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ widthStrip (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ widthStrip		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

71.3 Q Codes

TABLE 71.11

AIXM Code	Q Code	
OTHER:THRESHOLD	**Series**	**A**
	Q Code	QMTCM
	Scope	A
	Traffic	IV

	Purpose	NBO

71.4 Business Rules

71.4.1 Template Business Rules

a. When *distance* equals null, then "Specify a distance."

b. When *distance* equals 0, then "Specify a distance greater then 0."

c. When *distance* equals the length of the runway, then "Specify a distance less then the length of the runway."

d. When *distance* is greater than 1/3 of the length of the runway, then "The displaced distance is greater than 1/3 of the runway length. Do you want to continue?" Allow the user to continue if they agree.

71.4.2 Policy Business Rules

None.

71.4.3 Data Encoding Business Rules

a. For entering the *type* and *distance*, use a TimeSlice under the feature RunwayCentrelinePoint of type TEMPDELTA.

b. For entering the *designator* and the baseline information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type SNAPSHOT.

c. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

d. The baseline Runway information *lengthStrip* and *widthStrip* should be included in the feature Runway.

e. The timePosition for the SNAPSHOT should correspond to the beginPosition.

f. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

g. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

h. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

i. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

71.5 Sample AIXM Message

See section 44.5 for sample message.

71.6 Translation Templates

71.6.1 FAA

RWY *designator THR DSPLCD distance approachMarkingType*

71.6.2 ICAO E Line

RWY *designator THR DSPLCD distance approachMarkingType*

71.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *affectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Threshold Displacement

Affected Runway: *designator*

Threshold Displaced: *distance* ft

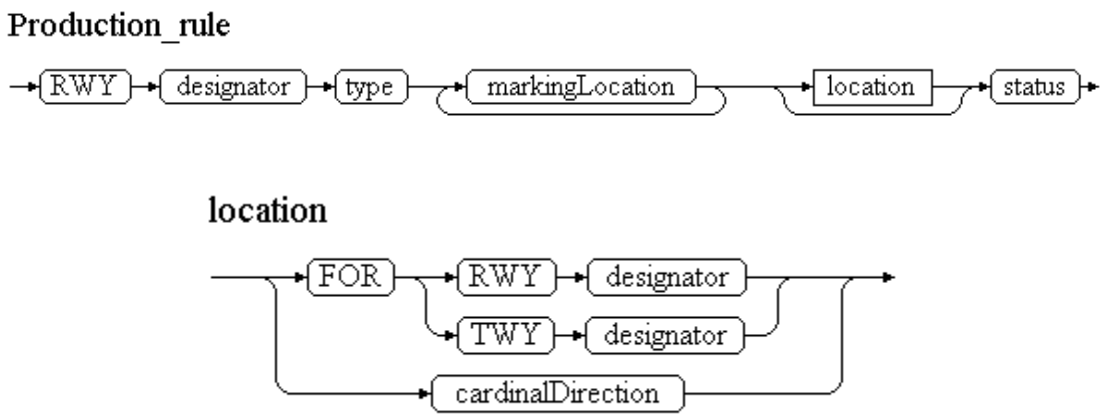
Marking: *approachMarkingType*

71.7 Additional Analysis

None.

72 Ski Strip – Ground Marking Status

Specify that the runway marking has been changed.



72.1 Example NOTAMs

1. !AMA 10/011 AMA RWY 4/22 EDGELINE MARKINGS NONSTD
2. !VNY 04/008 VNY RWY 16R/34L EDGE MARKINGS OBSCD
3. !TEB 09/082 TEB RWY 1/19 MANDATORY HOLD SHORT MARKINGS ON RWY 6/24 UNMARKED

Source: US NOTAM Repository

72.2 AIXM Mapping and Translation

72.2.1 Scenario Details

TABLE 72.1

Attribute	Value
Description	Specify the status of the markings on a runway.
Maps to Keyword	Runway
Feature Type Id	AirportHeliport/ Markings
Feature XPath	aixm:RunwayMarking
NOTAM lifespan	
Start ASAP	Yes
Recurring Schedule	No
Prior Permission	No

72.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the runway, used to uniquely identify it at an aerodrome/heliport which has more than one
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required).

TABLE 72.2

Attribute	Value
AIXM Path (UML)	Runway(feature)/ designator (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator
Type	Character1Type
Min length	1
Max length	16
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*

72.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

Source: User-selected from baseline data (required).

TABLE 72.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

72.2.4 Marking Type [*markingLocation*]

Description: A code indicating the location of the marking relative to the surface.

Source: User-selected (*markingLocation* or *type* required)

TABLE 72.4

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ markingLocation (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ markingLocation		
Enumeration	CodeRunwaySectionType		
	AIXM	**Translations**	
	OTHER:REFLECTIVE_EDGE	ICAO	REFLECTIVE EDGE MARKERS
		FAA	REFLECTIVE EDGE MARKERS
		Plain Text	Reflective edge markers
	OTHER:THR_MARKERS	ICAO	THR MARKERS
		FAA	THR MARKERS
		Plain Text	Threshold markers

*Should appear in one menu with Marking Type [*type*]

72.2.5 Runway Designator [*atRunway*]

Description: The full textual designator of the landing and take-off direction, or full runway.
Examples: 27, 35L, 01R.

Source: User-selected from baseline data (optional)

TABLE 72.5

Attribute	Value		
AIXM Path (UML)	RunwayMarking(feature)/ atRunway (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ atRunway		
Type	TextDesignatorType		
Min length	1		
Max length	16		
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*		
Enumeration	**AIXM**	**Translations**	
	Full Runway	ICAO	AT RWY <designator>
		FAA	AT RWY <designator>
		Plain Text	at Runway <designator>
	Runway End	ICAO	AT APCH END RWY <designator>
		FAA	AT APCH END RWY <designator>
		Plain Text	at Approach End Runway <designator>

72.2.6 Taxiway Designator [*atTaxiway*]

Description: The full textual designator used to identify an taxiway at an aerodrome/heliport which has more than one.

Source: User-selected from baseline data. (optional)

TABLE 72.6

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ atTaxiway (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ atTaxiway		
Type	TextDesignatorType (Character1Type)		
Min length	1		
Max length	16		
Pattern	([A-Z]|[0-9])+([\+\-/]*([A-Z]|[0-9])+)*		
Enumeration	**AIXM**	**Translations**	
	Full Taxiway	ICAO	AT TWY <designator>
		FAA	AT TWY <designator>
		Plain Text	at Taxiway <designator>

72.2.7 Cardinal Direction [cardinal*Direction*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional)

TABLE 72.7

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ cardinalDirection (attribute)		
AIXM Element X Path	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation SNAPSHOT]/ cardinalDirection		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE

		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

72.2.8 Status [*condition*]

Description: The quality of the marking, such as good, fair, poor, and other (obscured).

Source: User-selected (required).

TABLE 72.8

Attribute	Value		
AIXM Path (UML)	RunwayMarking (feature)/ condition (attribute)		
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ condition		
Enumeration	CodeMarkingConditionType		
	AIXM	**Translations**	
	OTHER:OBSC	ICAO	OBSCURED
		FAA	OBSC
		Plain Text	Markings Obscured
	OTHER:PART_OBSC	ICAO	PARTIALLY OBSCURED
		FAA	PARTIALLY OBSC
		Plain Text	Partially Obscured
	OTHER:UNAVBL	ICAO	UNAVBL
		FAA	UNAVBL
		Plain Text	Unavailable
	OTHER:OTS	ICAO	UNSERVICEABLE (U/S)
		FAA	OTS
		Plain Text	Out of service

72.2.9 Marking Type [*runwayMarkingType*]

Description: Type of marking related to landing categories such as precision, non-precision and basic.

Source: User-selected (required).

TABLE 72.9

Attribute	Value	
AIXM Path (UML)	RunwayMarking (feature)/ runwayMarkingType (attribute)	
AIXM Element XPath	RunwayMarking/ timeSlice/ RunwayMarkingTimeSlice [interpretation TEMPDELTA]/ runwayMarkingType	
Enumeration	CodeRunwayMarkingType	
	AIXM	**Translations**
	NON_STANDARD	ICAO: NONSTD MARKINGS
		FAA: NONSTD MARKINGS
		Plain Text: Non-Standard Markings
	NONE	ICAO: UNMARKED
		FAA: UNMARKED
		Plain Text: Unmarked
	PRECISION	ICAO: PRECISION MARKINGS
		FAA: PRECISION MARKINGS
		Plain Text: Precision Markings
	NONPRECISION	ICAO: NONPRECISION MARKINGS
		FAA: NONPRECISION MARKINGS
		Plain Text: Non-Precision Markings

72.3 Q Codes

TABLE 72.10

AIXM Code	Q Code	
ALL	**Series**	**A**
	Q Code	QMMXX
	Scope	A
	Traffic	IV
	Purpose	MNBO

72.4 Business Rules

72.4.1 Template Business Rules

a. If *designator* equal to null then "Select a designator."

b. When *type* equals null then "Select a Marking Type."

c. One of the element type, *markingLocation* is required. Multiple are allowed.

d. Location is optional, but the user must not enter more than one of the following: *atTaxiway, atRunway,* or *cardinalDirection.*

e. If *condition* or *runwayMarkingType* are null, then "Select the Marking Status."

72.4.2 Policy Business Rules

None.

72.4.3 Data Encoding Business Rules

a. For entering the *designator* and *approachMarkingType* (optional), use a TimeSlice under the feature RunwayDirection of type SNAPSHOT.

b. For entering the new information for *approachMarkingType*, use a TimeSlice under the feature RunwayDirection of type TEMPDELTA.

c. The timePosition for the SNAPSHOT should correspond to the beginPosition.

d. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

e. An xlink:href is required, should point to the associated Runway, and must use a TimeSlice of type SNAPSHOT.

f. The associated Runway should have interpretation SNAPSHOT and contain the designator; an xlink:href is required, should point to the associated AirportHeliport, and must use a TimeSlice of type SNAPSHOT.

g. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

72.5 Sample AIXM Message

See section 34.5 for example message.

72.6 Translation Templates

72.6.1 FAA

RWY *designator* [*markingLocation*] [*location*] [*condition*] [*runwayMarkingType*]

72.6.2 ICAO E Line

RWY *designator* [*markingLocation*] [*location*] [*condition*] [*runwayMarkingType*]

72.6.3 Plain Language

Accountable Airport: *accountableFacility*

NOTAM Number: XX/XXX

Affected Airport: *afffectedFacility*

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Runway Surface Markings

Affected Runway: *designator*

Marking Type: [*markingLocation*]

Location: [*location*]

Status: [*condition*] [*runwayMarkingType*]

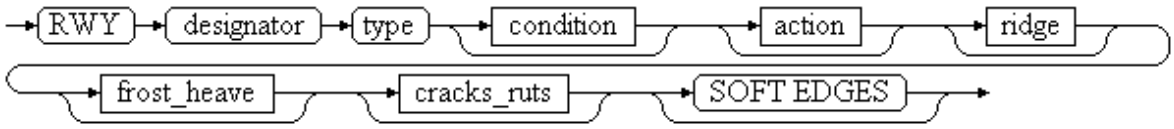
72.7 Additional Analysis

None.

73 Ski Strip – Surface Condition

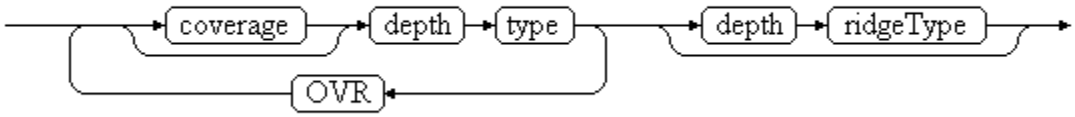
This scenario is used to report snow, ice, slush, water conditions and actions such as plowed, swept, sanded and deiced as outlined in Order 7930.2M section 5-1-4.

Production_rule



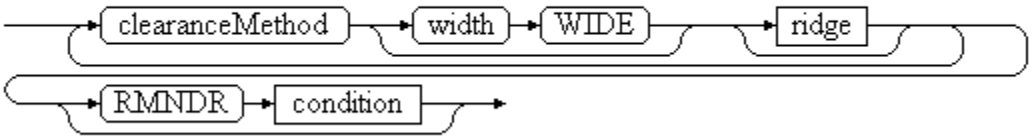
Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.

condition



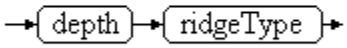
Action(s) – plowed, swept, sanded, deiced, etc.

action



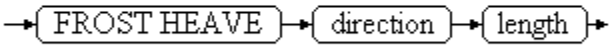
Ridge – snowbank, berm and windrows

ridge



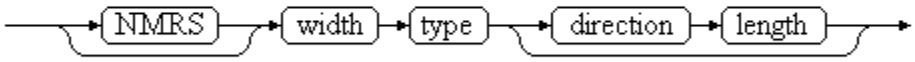
Frost Heave

frost_heave



Cracks/Ruts

cracks_ruts



73.1 Example NOTAMs

1. !BTL 11/022 BTL RWY 5/23 THN WSR OVR PTCHY THN IR 1 IN DRFT WEF 0811302050
2. !CMX 11/070 CMX RWY 13/31 1 IN DRFT OVR THN IR WEF 0811281317
3. !OTZ 12/399 OTZ RWY 9/27 THN LSR OVR PTCHY 1/2 IN DRFT OVR PTCHY THN SIR WEF 0812251550
4. !BGR 02/100 BGR RWY 15/33 THN LSR OVR THN PTCHY PSR PLW 180 WIDE SA 50 WIDE 18 IN DRFT WEF 0902192330
5. !BET 11/111 BET RWY 18/36 PTCHY THN DRFT OVR THN FROST WEF 0811092115
6. !OTZ 02/291 OTZ RWY 9/27 PTCHY 1/2 IN DRFT OVR PTCHY THN SIR SWEPT 100 WIDE SA 60 WIDE 4 FT BERM 15 FT INSIDE RWY LGTS N SIDE 24 IN BERM INSIDE RWY LGTS S SIDE WEF 0902200159
7. !CQM 01/001 CQM RWY 13/31 FROST HEAVE NW 1000 WEF 0901201730
8. !FAI 04/213 FAI RWY 1R/19L FROST HEAVE S 2600 WEF 0904120903
9. !MRI 02/097 MRI RWY 4/22 3 IN PTCHY SIR 5 IN RUTS WEF 0902180709
10. !HVN 09/001 HVN RWY 2/20 RWY UNEVEN 6IN RUTS E 1000
11. !DRI 06/354 OPL RWY 18/36 NMRS 2 IN CRACKS WEF 0906241520
12. !JST 07/008 JST RWY 5/23 SOFT EDGES
13. !CDV 11/007 CDV RWY 9/27 THN SIR SA/DEICED SOLID 80 WIDE RMNDR BA FAIR WEF 0811012357
14. !ADQ 11/238 ADQ RWY 7/25 4 IN LSR OVR PTCHY THN IR BA POOR WEF 0811221429

Source: US NOTAM Repository

73.2 AIXM Mapping and Translation General

73.2.1 Scenario Details

TABLE 73.1

Attribute	Value
Description	Specify the surface conditions for a runway.
Feature Type Id	Runway
Feature XPath	aixm:Runway
NOTAM lifespan	
Start ASAP	Yes
Recurring Schedule	No
Prior Permission	No

73.2.2 Designator [*designator*] – Runway

Description: The full textual designator of the landing and take-off direction.
Example: 09/27, 02R/20L, RWY 1.

Source: User-selected from baseline data (required if baseline data permits)

TABLE 73.2

Attribute	Value
AIXM Path (UML)	Runway (feature) /designator (attribute)
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ designator

Type	TextDesignatorType
Min length	1
Max length	16
Pattern	([A-Z]|[0-9]|[, !"&#$%'\(\)*\+\-\./:;<=>\?@\[\\\]\^_|\{\}])*

73.2.3 Runway Type [*type*]

Description: A code that distinguishes the type of runway surface.

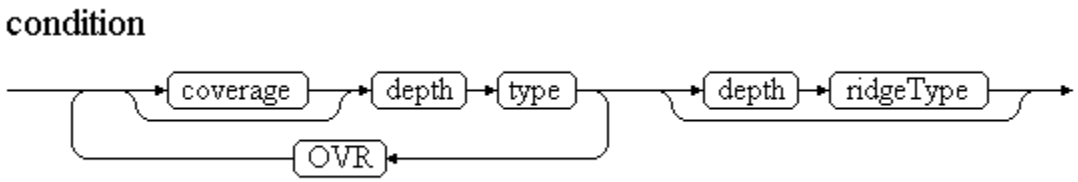
Source: User-selected from baseline data (required).

TABLE 73.3

Attribute	Value		
AIXM Path (UML)	Runway (feature) /type (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:SNAPSHOT]/ type		
Enumeration	CodeRunwayType		
	OTHER:WATERLANE	ICAO	WATER LANE
		FAA	WATER LANE
		Plain Text	Water lane
	OTHER:SKISTRIP	ICAO	SKI STRIP
		FAA	SKI STRIP
		Plain Text	Ski strip

73.3 AIXM Mapping and Translation Condition(s)

Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



73.3.1 Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 73.4

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ coverage (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ coverage		
Enumeration	CodeCoverageType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy
	FULLY_COVERED	ICAO	…

		FAA	…
		Plain Text	Fully Covered

73.3.2 Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 73.5

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ depth		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

73.3.3 Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 73.6

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ layer/ SurfaceContaminationLayer/ layerOrder
Datatype	NoSequenceType
Min inclusive	0

73.3.4 Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

TABLE 73.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ layer/ SurfaceContaminationLayer/ type		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WR

		Plain Text	Water on Runway
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLR
		Plain Text	Slush on Runway
	ICE	ICAO	ICE
		FAA	IR
		Plain Text	Ice on Runway
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PSR
		Plain Text	Packed Snow on Runway
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LSR
		Plain Text	Loose Snow on Runway
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SIR
		Plain Text	Snow and Ice on Runway
	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WSR
		Plain Text	Wet Snow on Runway
	MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	OTHER:PONDING	ICAO	PONDING
		FAA	PONDING
		Plain Text	Ponding
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks

73.3.5 Drift Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (optional)

TABLE 73.8

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

73.3.6 Ridge Type [*ridgeType*]

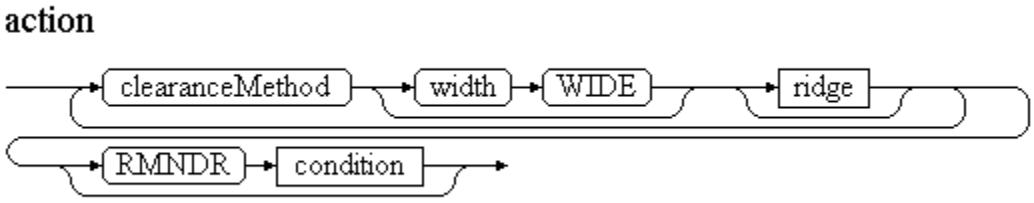
Description: The type of drift (such as a snowbank).
Source: In this section, constrained to be drift.

TABLE 73.9

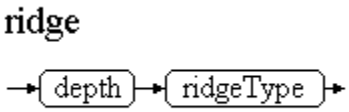
Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ ridgeType (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ ridgeType		
Enumeration	CodeRidgeType		
	AIXM	**Translations**	
	DRIFT	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift

73.4 AIXM Mapping and Translation Action(s)

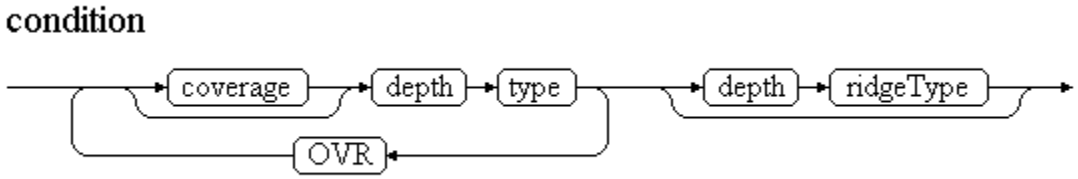
Action(s) – plowed, swept, sanded, deiced, etc.



Ridge – snowbank, berm and windrows



Condition(s) - snow, snow and ice, slush, mud, water, frost, drifts, etc.



73.4.1 Clearance Method [*clearanceMethod*]

Description: The method used to clear the surface contamination.

Source: User-selected (required with clearedWidth, ridgeType, ridgeDepth, and/or remaining conditions)

TABLE 73.10

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ clearanceMethod (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ clearanceMethod		
Enumeration	CodeClearanceMethodType		
	AIXM	**Translations**	
	PLOWED	ICAO	PLOWED
		FAA	PLW
		Plain Text	plowed
	SANDED	ICAO	SANDED
		FAA	SA
		Plain Text	sanded
	PATCHY SAND	ICAO	PATCHY SAND
		FAA	PTCHY SA
		Plain Text	Patchy sand
	SWEPT	ICAO	SWEPT
		FAA	SWEPT
		Plain Text	swept
	PLOWED_SWEPT	ICAO	PLOWED/ SWEPT
		FAA	PLW/ SWEPT
		Plain Text	plowed and swept
	PLOWED_SWEPT_SANDED	ICAO	PLOWED/ SWEPT/ SANDED
		FAA	PLW/ SWEPT/ SA
		Plain Text	plowed, swept, and sanded
	DEICED_LIQUID	ICAO	DEICED LIQUID
		FAA	DEICED LIQUID
		Plain Text	deiced liquid
	DEICED_SOLID	ICAO	DEICED SOLID
		FAA	DEICED SOLID
		Plain Text	deiced solid

73.4.2 Cleared Width [*clearedWidth*]

Description: Width of runway cleared of contamination, if less than the total width.

Source: User-entered (optional)

TABLE 73.3

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ clearedWidth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ clearedWidth		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

73.4.3 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 73.12

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

73.4.4 Type [*ridgeType*]

Description: The type of drift (such as a snowbank).

Source: In this section, constrained to be drift.

TABLE 73.13

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ ridgeType (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ ridgeType		
Enumeration	CodeRidgeType		
	AIXM	**Translations**	
	DRIFT	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift
	BERM	ICAO	
		FAA	BERM
		Plain Text	berm

	SNOWBANK	ICAO	SN BANKS
		FAA	SNBNK
		Plain Text	snowbank
	WINDROWS	ICAO	WINDROWS
		FAA	WINDROWS
		Plain Text	windrows

73.4.5 Remaining Coverage [*coverage*]

Description: The coverage of the first layer of contamination on the surface. Select 'patchy' if surface is not fully covered; otherwise, it is assumed that the surface is fully covered.

Source: User-selected (required with depth)

TABLE 73.4

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ coverage (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ coverage		
Enumeration	CodeCoverageType		
	AIXM	**Translations**	
	PATCHY	ICAO	PATCHY
		FAA	PTCHY
		Plain Text	Patchy
	FULLY_COVERED	ICAO	…
		FAA	…
		Plain Text	Fully Covered

73.4.6 Remaining Contamination Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with coverage)

TABLE 73.5

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ depth		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 304.8 MM, 1 IN = 25.4 MM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	MM

73.4.7 Remaining Layer Order [*layerOrder*]

Description: The order of the layer, starting from the uppermost (value "1") towards the movement area surface, in case overlapping contaminants are present

Source: User-entered (required with depth and coverage)

TABLE 73.6

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ layerOrder (attribute)
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ layerOrder
Datatype	NoSequenceType
Min inclusive	0

73.4.8 Remaining Contamination Type [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with depth, coverage, and layer order)

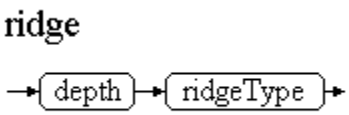
TABLE 73.7

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ type		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	WATER	ICAO	WATER
		FAA	WR
		Plain Text	Water on Runway
	FROST	ICAO	FROST
		FAA	FROST
		Plain Text	Frost
	SLUSH	ICAO	SLUSH
		FAA	SLR
		Plain Text	Slush on Runway
	ICE	ICAO	ICE
		FAA	IR
		Plain Text	Ice on Runway
	COMPACT_SNOW	ICAO	COMPACTED SN
		FAA	PSR
		Plain Text	Packed Snow on Runway
	OTHER:FROZEN_SLUSH	ICAO	FROZEN SLUSH
		FAA	FRZN SLUSH
		Plain Text	Frozen Slush
	OTHER:RUF_ICE	ICAO	ICE
		FAA	RUF ICE
		Plain Text	Rough Ice
	OTHER:LOOSE_SNOW	ICAO	LOOSE SN
		FAA	LSR
		Plain Text	Loose Snow on Runway
	DRY_SNOW	ICAO	DRY SN
		FAA	SN
		Plain Text	Snow
	OTHER:SNOW_ICE	ICAO	SN/ICE
		FAA	SIR
		Plain Text	Snow and Ice on Runway

	OTHER:SLUSH_ICE	ICAO	SLUSH/ICE
		FAA	SLUSH/ICE
		Plain Text	Slush and Ice
	WET_SNOW	ICAO	WET SN
		FAA	WSR
		Plain Text	Wet Snow on Runway
	OTHER:MUD	ICAO	MUD
		FAA	MUD
		Plain Text	Mud
	RUT	ICAO	RUTS
		FAA	RUTS
		Plain Text	Ruts
	OTHER:CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	Cracks

73.5 AIXM Mapping and Translation Ridge

Ridge – snowbank, berm and windrows



73.5.1 Ridge Depth [*depth*]

Description: The depth of the contamination on the surface.

Source: User-entered (required with ridgeType)

TABLE 73.8

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ depth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ depth		
Datatype	ValDepthType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 30.48 CM, 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN <¼, ¼, ½, 1, 2, 3, etc to 35
			FT 3, 4, etc to 10
		ICAO	CM

73.5.2 Ridge Type [*ridgeType*]

Description: The type of drift (such as a snowbank).

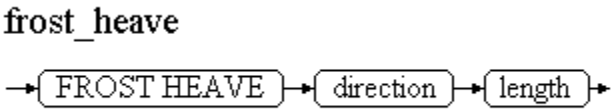
Source: In this section, constrained to be drift.

TABLE 73.9

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwayContamination (object)/ SurfaceContamination (object)/ Ridge (object)/ ridgeType (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ overallContaminant/ RunwayContamination/ criticalRidge/ Ridge/ ridgeType		
Enumeration	CodeRidgeType		
	AIXM	**Translations**	
	DRIFT	ICAO	DRSN (drifting snow)
		FAA	DRFT
		Plain Text	drift

73.6 AIXM Mapping and Translation Frost Heave

Frost Heave



73.6.1 FROST HEAVE [*type*]

Description: The type of contaminating substance on the movement area surface.

Source: User-selected (required with direction or length)

TABLE 73.20

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ type (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ type		
Enumeration	CodeContaminationType		
	AIXM	**Translations**	
	OTHER:FROST_HEAVE	ICAO	FROST HEAVE
		FAA	FROST HEAVE
		Plain Text	Frost Heave

73.6.2 Frost Heave Direction [*cardinalDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 73.10

Attribute	Value
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/

	SurfaceContaminationLayer(object)/ cardinalDirection (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ cardinalDirection		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE
		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

73.6.3 Frost Heave Length [contaminantLength]

Description: Length of the contaminant.

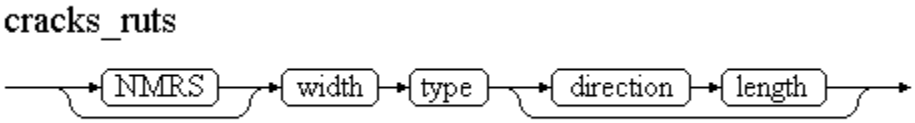
Source: User-entered (optional)

TABLE 73.11

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ RunwaySectionContamination (object)/ SurfaceContamination (object)/ SurfaceContaminationLayer(object)/ contaminantLength (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation: TEMPDELTA]/ areaContaminant/ RunwaySectionContamination/ layer/ SurfaceContaminationLayer/ contaminantLength		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

73.7 AIXM Mapping and Translation Cracks/Ruts and Soft Edges

Cracks/Ruts



Soft Edges

73.7.1 NMRS [*numerousDefects*]

Description: A code indicating whether there are numerous cracks/ruts on the surface.

Source: User-selected (optional).

TABLE 73.12

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ numerousDefects (attribute)		
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ numerousDefects		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	NMRS
		FAA	NMRS
		Plain Text	NMRS
	NO	ICAO	…
		FAA	…
		Plain Text	…

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1*

73.7.2 Width [*crackWidth*]

Description: Width of a surface defect

Source: User-entered (required, with NMRS and crackType)

TABLE 73.13

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ crackWidth (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ crackWidth		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 IN = 2.54 CM		
	UomDistanceType	FAA	IN
		ICAO	CM

73.7.3 Type [*crackType*]

Description:

Source: User-selected (required with crackWidth and NMRS).

TABLE 73.14

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ crackType (attribute)		
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ crackType		
Enumeration			
	AIXM	**Translations**	
	CRACKS	ICAO	CRACKS
		FAA	CRACKS
		Plain Text	cracks
	RUTS	ICAO	RUTS
		FAA	RUTS
		Plain Text	ruts

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1*

73.7.4 Direction [*crackDirection*]

Description: Eight points of the compass used to indicate the direction of the warning area.

Source: User-selected (optional).

TABLE 73.15

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ crackDirection (attribute)		
AIXM Element X Path	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ crackDirection		
Enumeration	CodeCardinalDirectionType		
	AIXM	**Translations**	
	NORTH	ICAO	N SIDE
		FAA	N SIDE
		Plain Text	north side
	EAST	ICAO	E SIDE
		FAA	E SIDE
		Plain Text	east side
	SOUTH	ICAO	S SIDE
		FAA	S SIDE
		Plain Text	south side
	WEST	ICAO	W SIDE
		FAA	W SIDE
		Plain Text	west side
	NORTH_EAST	ICAO	NE SIDE
		FAA	NE SIDE
		Plain Text	north-east side
	SOUTH_EAST	ICAO	SE SIDE
		FAA	SE SIDE
		Plain Text	south-east side
	NORTH_WEST	ICAO	NW SIDE
		FAA	NW SIDE

		Plain Text	north-west side
	SOUTH_WEST	ICAO	SW SIDE
		FAA	SW SIDE
		Plain Text	south-west side

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1.*

73.7.5 Length [*crackLength*]

Description: Length of a surface Defect

Source: User-entered (optional)

TABLE 73.16

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ crackLength (attribute)		
AIXM Element XPath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ crackLength		
Datatype	ValDistanceType		
Min inclusive	0		
Enumeration	Units of Measure: 1 FT = 0.3048 M		
	UomDistanceType	FAA	FT
		ICAO	M

73.7.6 Soft Edges [*softEdges*]

Description: A code indicating whether there are soft edges on the surface.

Source: User-selected (optional).

TABLE 73.17

Attribute	Value		
AIXM Path (UML)	Runway (feature)/ SurfaceCharacteristics (object)/ softEdges (attribute)		
AIXM Element Xpath	Runway/ timeSlice/ RunwayTimeSlice [interpretation:TEMPDELTA]/ surfaceProperties/ SurfaceCharacteristics/ softEdges		
Enumeration	CodeYesNoType		
	AIXM	**Translations**	
	YES	ICAO	SOFT EDGES
		FAA	SOFT EDGES
		Plain Text	Soft Edges
	NO	ICAO	…
		FAA	…
		Plain Text	…

Note: *Objects highlighted in blue currently do not have a representation in AIXM 5.1*

73.8 Business Rules

73.8.1 Template Business Rules

Enforce required items in first (second, third) layer.

a. When *coverage1 (coverage2, coverage3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

b. When *coverage1 (coverage2, coverage3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

c. When *depth1 (depth2, depth3)* not equal to null and *type1 (type2, type3)* equal to null then "Select a type for first (second, third) layer."

d. When *type1 (type2, type3)* not equal to null and *depth1 (depth2, depth3)* equal to null then "Specify a depth for first (second, third) layer."

Enforce range in first (second, third) layer.

e. When *depth1 (depth2, depth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the first (second, third) layer in the form (THN, 1/4, 1/2 or 1)."

f. When *depth1 (depth2, depth3)* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce range of the depth of the snowdrifts

g. When *depthOfDrift* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

h. When *depthOfDrift* is greater than 35" then "Be sure to report depths greater than 35" as multiples of feet only."

Enforce required items in action(s) fields.

i. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

j. When *clearanceRidgeType1 (clearanceRidgeType2, clearanceRidgeType3)* and/or *clearanceRidgeDepth1 (clearanceDepthType2, clearanceDepthType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

k. When *clearanceFrictionEstimation (clearanceFrictionEstimation2, clearanceFrictionEstimation3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

l. When *remainderCoverage1 (remainderCoverage2, remainderCoverage3)* and/or *remainderDepth1 (remainderDepth2, remainderDepth3)* and/or *remainderType1 (remainderType2, remainderType3)* not equal to null and *clearanceMethod1 (clearanceMethod2, clearanceMethod3)* equal to null then "Specify at least one clearance method."

m. When *clearanceMethod1* (*clearanceMethod2, clearanceMethod3*) is plowed, swept, plowed and swept, or plowed, swept and sanded and *width1* (*width2, width3*) equal to null then "Specify the width of the cleared area and remainder if known. Note: plowed/swept is omitted when the entire surface has been plowed."

n. When clearanceMethod1 is null and clearanceMethod2 and/or clearanceMethod3 is not null then "Specify Method-1 first."

o. When clearanceMethod2 is null and clearanceMethod3 is not null then "Specify Method-2 before specifying Method-3."

Enforce range in action(s) fields.

p. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* equal to 0 then "Specify a width greater then 0."

q. When *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* not equal to null and *clearanceWidth1 (clearanceWidth2, clearanceWidth3)* greater then *runwayWidth* then "Specify a width less then or equal to the runway width."

Enforce required items in ridge fields.

r. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* not equal to null and *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* equal to null then "Specify a ridge type."

s. When *ridgeType (clearanceRidgeType1, clearanceRidgeType2, clearanceRidgeType3)* not equal to null and *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* equal to null then "Specify a ridge depth."

Enforce range in ridge fields.

t. When *ridgeDepth (clearanceRidgeDepth1, clearanceRidgeDepth2, clearanceRidgeDepth3)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a ridge depth in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in remainder fields.

u. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

v. When *remainderCoverage1 (remainderCoverage2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

w. When *remainderDepth1 (remainderDepth2)* not equal to null and *remainderType1 (remainderType2)* equal to null then "Select a type for remainder."

x. When *remainderType1 (remainderType2)* not equal to null and *remainderDepth1 (remainderDepth2)* equal to null then "Specify a depth for remainder."

y. When *remainderType1 (remainderType2)* not equal to null and (*clearanceMethod1* equal to null and *clearanceMethod2* and *clearanceMethod3* equal to null) then "Specify at least one clearance method."

Enforce range in remainder.

z. When *remainderDepth1 (remainderDepth2)* does not match "[1]{1,1}\\|[0-9]{1,2}|THN" then "Specify a depth for the remainder in the form (THN, 1/4, 1/2 or 1)."

Enforce required items in frost heave fields.

aa. When *directionFrost* not equal to null and *sectionLengthFrost* equal to null then "Specify the length of movement area affected by frost heaves."

bb. When *sectionLengthFrost* not equal to null and *directionFrost* equal to null then "Specify a direction."

Enforce range in frost heave fields.

cc. When *sectionLengthFrost* not equal to null and *sectionLengthFrost* greater than *runwayLength* then "Specify a length less then or equal to the runway length."

Enforce required items in cracks/ruts fields.

dd. When *cracksRutsWidth* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *typeCracksRuts* equal to null then "Specify a type of cracks/ruts."

ee. When *typeCracksRuts* and/or *directionCracksRuts* and/or *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* equal to null then "Specify the width of cracks/ruts."

ff. When *sectionLengthCracksRuts* not equal to null and *cracksRutsWidth* and/or *directionCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type/direction of the cracks/ruts."

gg. When *directionCracksRuts* not equal to null and *cracksRutsWidth* and/or *sectionLengthCracksRuts* and/or *typeCracksRuts* equal to null, then "Specify the width/type of the cracks/ruts and/or the length of the section of movement area affected by the cracks/ruts."

Enforce range in frost heave fields.

hh. When *sectionLengthCracksRuts* not equal to null and *sectionLengthCracksRuts* greater than *runwayLength* then "Specify a section length less then or equal to the runway length."

Enforce required items in template.

ii. Set *startDate* equal to start immediately.

Other.

jj. Ensure that one of the following sections: Surface, Conditions, Action, Ridge, Frost Heave, Cracks/Ruts or Soft Edges are completed according to the above business rules before allowing the user to submit a NOTAM.

73.8.2 Policy Business Rules (from Order 7930.2M, section 5-1-4)

a. The term BARE is not to be used in NOTAMs.

b. Report the greatest depth measured.

c. Round off measurements to the next higher reporTABLE value.

d. Measurements are as follows:

e. THN (< ¼ ″), ¼″, ½″, 1″, 1+″ (reported as whole numbers), 35+″ (reported as multiples of feet only)

f. A surface not completely covered should be described as PTCHY. Do not use percentages.

g. Specify the width of the cleared area if less than the width of the runway.

h. Snowbanks are assumed to be at the edge of a movement area, or at the edge of the plowed/swept area.

i. Every snow NOTAM shall have the time that the conditions were observed by the airport operator as the last element of the NOTAM.

73.8.3 Data Encoding Business Rules

a. For entering *designator* and the xlink reference to the associated Airport use a TimeSlice of type SNAPSHOT.

b. For entering all temporary surface conditions use a TimeSlice of type TEMPDELTA.

c. The beginPosition and endPosition for the TEMPDELTA should correspond to the NOTAM activity times.

d. The timePosition for the SNAPSHOT should correspond to the beginPosition.

e. The associated AirportHeliport should have interpretation SNAPSHOT and contain the FAA and ICAO designators.

73.9 Sample AIXM Message

See section 28.9 for example message.

73.10 Translation Templates

73.10.1 FAA

RWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1*

clearanceRidgeType1 clearanceMethod2 clearanceWidth2 **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES WEF**

73.10.2 ICAO E Line

RWY *designator coverage1 depth1 type1* **OVR** *coverage2 depth2 type2* **OVR** *coverage3 depth3 type3 depthOfDrift* **DRFT** *clearanceMethod1 clearanceWidth1* **WIDE** *clearanceRidgeDepth1 clearanceRidgeType1 clearanceMethod2 clearanceWidth2* **WIDE** *clearanceRidgeDepth2 clearanceRidgeType2 clearanceMethod3 clearanceWidth3* **WIDE** *clearanceRidgeDepth3 clearanceRidgeType3* **RMNDR** *remainderCoverage1 remainderDepth1 remainderType1* **OVR** *remainderCoverage2 remainderDepth2 remainderType2 remainderDepthOfDrift* **DRFT** *ridgeDepth ridgeType* **FROST HEAVE** *directionFrost sectionLengthFrost* **NMRS** *cracksRutsWidth* **CRACKS|RUTS** *directionCracksRuts sectionLengthCracksRuts* **SOFT EDGES WEF**

73.10.3 Plain Language

Affected Airport: *affectedAirport*

NOTAM Number: XX/XXX

Effective Time Frame
Valid From: *startDate*
Valid To: *endDate*

Affected Surface: *designator*|*name*|**ALL**

CONDITION(S)
coverage1 depth1 type1
over *coverage2 depth2 type2*
over *coverage3 depth3 type3*
Drifts: *depthOfDrift*

CLEARANCE METHOD(S)
clearanceMethod1
clearanceWidth1 **WIDE**
Ridge: *clearanceRidgeDepth1 clearanceRidgeType1*
clearanceMethod2
clearanceWidth2 **WIDE**
Ridge: *clearanceRidgeDepth2 clearanceRidgeType2*
clearanceMethod3
clearanceWidth3 **WIDE**
Ridge: *clearanceRidgeDepth3 clearanceRidgeType3*
Remainder: *remainderCoverage1 remainderDepth1 remainderType1*
over *remainderCoverage2 remainderDepth2 remainderType2*
Drifts: *remainderDepthOfDrift*

RIDGE
ridgeDepth ridgeType

CRACKS/RUTS
cracksRutsWidth **CRACKS|RUTS**

Direction: *directionCracksRuts*
Length of Surface: *sectionLengthCracksRuts*

FROST HEAVES
Direction: *directionFrost*
Length of Surface: *sectionLengthFrost*

SOFT EDGES
Present|Not Present

73.11 Additional Analysis

None.

74 EBNF Diagrams

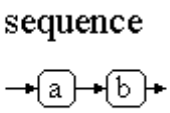
The data used to composed the NOTAM text is presented in the form of a "Template", using EBNF (Extended Backus Naur Form). This document includes graphical representations of the EBNF rules, as described below. The EBNF raw files are available in the next chapter (EBNF Sources).

NOTE-
The graphical representation of the EBNF rules was created with the free EBNF Visualizer 1.1.

74.1 EBNF Rules

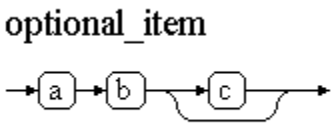
74.1.1 Sequence

A terminal symbol is any string. In this example ‘a’ and ‘b’ are two terminal symbols that are required items in the rule.

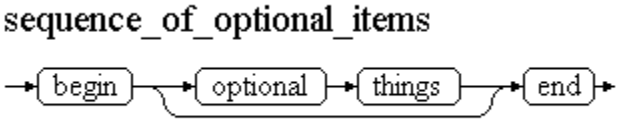


74.1.2 Optional Item

In this example item ‘c’ is an optional item denoted by the bypass line. The item ‘c’ may occur once or not at all in the rule.

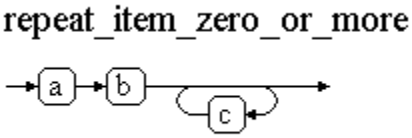


It is also possible to express a sequence of optional items as depicted in the example below.

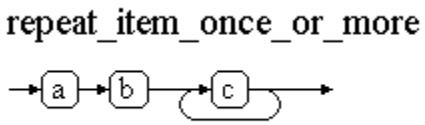


74.1.3 Iterations

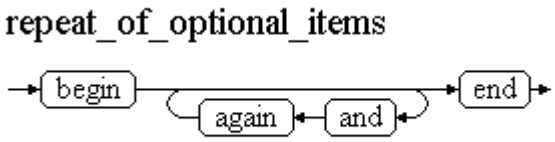
The item ‘c’ can occur from zero to infinite times.



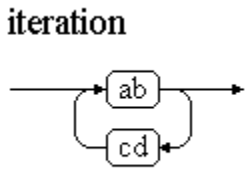
In this example item ‘c’ can occur one to infinite times.



It is also possible to have an iteration of a sequence from zero to infinite times.

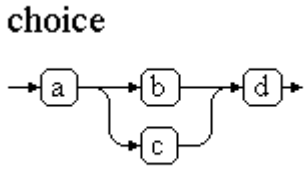


The rule below depicts the iteration between item ‘ab’ and item ‘cd’.

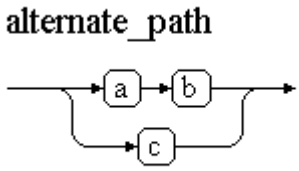


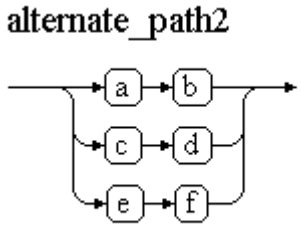
74.1.4 Choice

This rule depicts a choice between two items. Only one path will be used in a scenario at any given time.



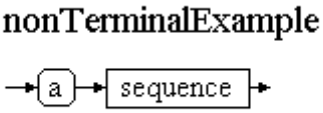
This rule can also be combined with a sequence to provide alternate paths of multiple items.





74.1.5 Non-Terminal Symbol

While a terminal symbol is depicted by a rounded box, a non-terminal symbol is represented by a box with square edges. A non-terminal symbol cannot be expressed explicitly. In the example below, ‘sequence’ is a non-terminal item expressed by the first rule of this appendix.



74.2 EBNF Example Source: Codes

sequence= a b.
optional_item = a b [c].
repeat_item_zero_or_more= a b {c}.
repeat_item_once_or_more= a b c {c}.
sequence_of_optional_items= begin [optional things] end.
repeat_of_optional_items = begin {and again} end.
choice= a (b|c) d.
alternate_path= a b | c.
alternate_path2= a b | c d | e f.
iteration= ab {cd ab}.
nonTerminalExample= a sequence.

75 EBNF Sources

75.1 Aerodrome

75.1.1 Aerodrome – Beacon Status

Production_rule = "AD" "ABN" ["color"] "status" ["cardinalDirection"].

75.1.2 Aerodrome – Closure

Production_rule = "AD" "status" {["restriction"]} ["EXC" "restriction" {"restriction"}] \n
["DUE TO" "note"].

75.1.3 Aerodrome – Construction Status

Production_rule = "AD" "warning" ["direction"] ["description"].

75.1.4 Aerodrome – Helipad Status

Production_rule = "AD" "designator" "status" ["DUE TO" "note"].

75.1.5 Aerodrome – Personnel and Equipment Working

Production_rule = "AD" "PAEW" ["warning"] ["direction"] ["description"].

75.1.6 Aerodrome – Wildlife Hazard

Production_rule = "AD" "warning" ["ADJ"] ["direction"] ["description"].

75.1.7 Aerodrome – Wind Indicator Status

Production_rule = "AD" "type" ["RWY" "designator"] "status".

75.2 Service

75.2.1 Service – Aircraft Rescue and Fire Fighting (ARFF) Availability

Production_rule = "SVC" "ARFF" [["VEHICLE"] "status"]\n
["NOW" "INDEX" "value" | "INDEX" "UNCHANGED"].

75.2.2 Service – Fuel Availability

Production_rule = "SVC" ["deliveryMethod"] {"category"} "FUEL" "status".

75.3 Apron

75.3.1 Apron – Closure

Production_rule = "APRON" "name" "status" {"restriction"}\n
["EXC" "restriction" {"restriction"}]\n
["description"] ["warningBarrier"].

75.3.2 Apron – Construction Status

Production_rule = "APRON" "name" "warning" ["ADJ"] ["direction"]\n
["section"] ["decription"] ["warningBarrier"].

75.3.3 Apron – Ground Markings Status

Production_rule = "APRON" "name" "markingLocation" {"markingLocation"} ["cardinalDirection"] "status".

75.3.4 Apron – Ground Lighting Status

Production_rule = "APRON" "name" "status".

75.3.4.1.1 Apron – Personnel and Equipment Working

Production_rule = "APRON" "name" "PAEW" "reason" ["ADJ"] ["direction"]\n
["section"] ["description"] ["warningBarrier"].

75.3.5 Apron – Surface Condition

Production_rule = APRON name [condition] [action] [ridge]\n
[frost_heave] [cracks_ruts] ["SOFT EDGES"].
condition = [coverage] depth type {OVR [coverage] depth type} [depth ridgeType].
action = [clearanceMethod width WIDE][ridge] {[clearanceMethod width WIDE][ridge]}\n
[RMNDR condition].
ridge = depth ridgeType.
frost_heave = "FROST HEAVE" direction length.
cracks_ruts = [NMRS] width type [direction length].

75.4 Runway

75.4.1 Runway – Closure

Production_rule = "RWY" "designator" "status" {"restriction"}\n
["EXC" "restriction" {"restriction"}] "location" ["DUE TO" "note"].
location = "BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator").

75.4.2 ALL Runways – Continuous Snow or Ice Removal

Production_rule = "RWY" ("ALL"|"INSTR") "RWYS" "ALTNLY" "status" "note".

75.4.3 Runway – Friction Measurements

Production_rule = "RWY" "designator" "frictionDevice" "MU"\n
"frictionCoefficient (1st Third)" "/frictionCoefficient (2nd Third)" "/frictionCoefficient (3rd Third)".

75.4.4 Runway – Braking Action

Production_rule = "RWY" "designator" "BA" "frictionEstimationSurface".

75.4.5 Runway – Ground Marking Status

Production_rule = "RWY" "designator" "type" "markingLocation" {"markingLocation"} ["location"] "status".
location = ("FOR" ("RWY""designator"|"TWY""designator"))|"cardinalDirection".

75.4.6 Runway – Approach Lighting System Status

Production_rule = "RWY" "designator" "ALS" "status".

75.4.7 Runway – Pilot Controlled Lighting Status

intensity_level = clicks TIMES intensity.
Production_rule = RWY designator PCL status\n
[((KEY frequency intensity_level {intensity_level})|(EXC intensity)) INTST].

75.4.8 Runway – Pilot Controlled Lighting Frequency Change

Production_rule = RWY designator "PCL NOW" frequency.

75.4.9 Runway – Construction Status

Production_rule = "RWY" "designator" "PAEW" ["warning"] ["ADJ"]\n
("direction" "section" | "location") ["description"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("AT" ("RWY""designator"|"TWY""designator")).

75.4.10 Runway – Personnel and Equipment Working

Production_rule = "RWY" "designator" "PAEW" ["warning"] ["ADJ"]\n
("direction" "section" | "location") ["description"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("AT" ("RWY""designator"|"TWY""designator")).

75.4.11 Runway – Surface Condition

Production_rule = RWY designator [condition] [action] [ridge]\n
[frost_heave] [cracks_ruts] ["SOFT EDGES"].
condition = [coverage] depth type {OVR [coverage] depth type} [depth ridgeType].
action = clearanceMethod [width WIDE][ridge] {clearanceMethod [width WIDE][ridge]}\n
[RMNDR condition].
ridge = depth ridgeType.
frost_heave = "FROST HEAVE" direction length.
cracks_ruts = [NMRS] width type [direction length].

75.4.12 Runway – Lights Obscured

Production_rule = "RWY" "designator" "LGTS OBSC" "obscuredLightsSide" ["description"].

75.4.13 Runway – Lighted Sign Status

Production_rule = "RWY" "designator" ["description"] "sign"\n
["cardinalDirection"] ["location"] "status".
location = "AT" (("RWY" "designator")|("TWY""designator")).

75.4.14 Runway Direction – Lighted Sign Status

Production_rule = "RWY" "designator" ["description"] "sign"\n
["cardinalDirection"] ["location"] "status".

location = "AT" (("RWY" "designator")|("TWY""designator")).

75.4.15 Runway – Ground Lighting Status

Production_rule = "RWY" "designator" "type" "status" ["location"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("FOR" ("RWY""designator"|"TWY""designator")).

75.4.16 Runway Direction – Ground Lighting Status

Production_rule = "RWY" "designator" "type" "status" ["location"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("FOR" ("RWY""designator"|"TWY""designator")).

75.4.17 Runway – Wildlife Hazard

Production_rule = "RWY" "designator" ["warning"] ["ADJ"]\n
(("direction" "section") | ("AT" ("RWY" "designator"|"TWY" "designator"))) ["description"].

75.4.18 Runway – Runway Visual range Status

Production_rule = "RWY" "designator" "type" "status".

75.4.19 Runway – VFR Traffic Pattern

Production_rule = "RWY" "designator" "pattern" "TFC PAT".

75.4.20 Runway – Distance Available

Production_rule = "RWY" "designator" "type" "distance" {"type" "distance"}.

75.4.21 Runway – Threshold Displacement

Production_rule = "RWY" "designator" "THR DSPLCD" "distance" ["marking"].

75.4.22 Runway – Properties Change

Production_rule = "RWY" "designator" "NOW" ["Length X Width"]\n
["composition" "lighted"] ["RWY" "designator"].

75.4.23 Runway – Safety Area Status

Production_rule = "RWY" "designator" "type" "status"\n
[["ADJ"]("direction" "section" | "location")] ["description"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("FOR" ("RWY""designator"|"TWY""designator")).

75.5 Taxiway

75.5.1 Taxiway – Closure

Production_rule = "TWY" ("designator"|"ALL") "status" {"restriction"}\n

["EXC" "restriction" {"restriction"}][location]\n
["description"] ["warningBarrier"].
location = "BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator").

75.5.2 Taxiway – Construction Status

Production_rule = "TWY" ("designator"|"ALL") "warning" ["location"]["ADJ"]\n
["direction"] ["section"]["note"]["warningBarrier"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("AT" ("RWY""designator"|"TWY""designator")).

75.5.3 Taxiway – Designated Non-Movement Area

Production_rule = "TWY" ("designator"|"ALL") "status" ["location"].
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("AT" ("RWY""designator"|"TWY""designator")).

75.5.4 Taxiway – Ground Lighting Status

Production_rule = "TWY" ("designator"|"ALL") ["type"] ["location"]"status".
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("AT" ("RWY""designator"|"TWY""designator")).

75.5.5 Taxiway – Lighted Sign Status

Production_rule = "TWY" ("designator"|"ALL") ["description"] "sign" \n
["cardinalDirection"]["location"]"status".
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("FOR" ("RWY""designator"|"TWY""designator")).

75.5.6 Taxiway – Personnel and Equipment Working

Production_rule = "TWY" ("designator"|"ALL") "PAEW" "reason" ["location"]\n
["ADJ"]["direction"]["section"]\n
["description"]"warningBarrier".
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator")).

75.5.7 Taxiway – Ground Markings Status

Production_rule = "TWY" ("designator"|"ALL") ["markingLocation"]["type"]
{["markingLocation"]["type"]}\n
["location"]"status".
location = ("BTN" ("RWY""designator"|"TWY""designator") "AND"
("RWY""designator"|"TWY""designator"))\n
|("FOR" ("RWY""designator"|"TWY""designator")).

75.5.8 Taxiway – Surface Condition

Production_rule = TWY designator [condition] [action] [ridge]\n
[frost_heave] [cracks_ruts] ["SOFT EDGES"].
condition = [coverage] depth type {OVR [coverage] depth type} [depth ridgeType].
action = clearanceMethod [width WIDE][ridge] {clearanceMethod [width WIDE][ridge]}\n
[RMNDR condition].
ridge = depth ridgeType.
frost_heave = "FROST HEAVE" direction length.
cracks_ruts = [NMRS] width type [direction length].

75.5.9 Taxiway – Braking Action

Production_rule = "TWY" ("designator"|"ALL") "BA" "frictionEstimationSurface".

75.6 Obstruction

75.6.1 Obstruction – Permanent Obstacle Light Status

Production_rule = "OBST" "type" "elevation" "(verticalExtentAGL)"\n
"cardinalDirection" "distance" ["gml:pos"]"status" ["(ASR name)"].

75.6.2 Obstruction – Temporary Obstacle Status

Production_rule = "OBST" "type" ("verticalExtent"|"UNK") "(verticalExtentAGL)""distance"\n
"cardinalDirection" "RELATIVE TO" ["gml:pos"]"status".

75.6.3 Obstruction – Moored Balloon or Kite Obstacle

Production_rule = "OBST" "type" "distance" "cardinalDirection"\n
"gml:radius" "NMR" ("verticalExtent"|"UNK") "/BLW".

75.7 Water Lane/Ski Strip

75.7.1 Water Lane – Closure

Production_rule = "RWY" "designator" "type" "status" {"restriction"} \n
["EXC" "restriction" {"restriction"}] ["DUE TO" "note"].

75.7.2 Ski Strip – Closure

Production_rule = "RWY" "designator" "type" "status" {"restriction"} \n
["EXC" "restriction" {"restriction"}] ["DUE TO" "note"].

75.7.3 Water Lane/Ski Strip – Personnel and Equipment Working

Production_rule = "RWY" "designator" "type" ["reason"]\n
["ADJ"]("cardinalDirection" "section" | "location").
location = "AT" ("RWY""designator" | "TWY""designator").

75.7.4 Water Lane/Ski Strip – Wildlife Hazard

Production_rule = "RWY" "designator" "type" ["reason"]\n
["ADJ"]("cardinalDirection" "section" | "location").

location = "AT" ("RWY""designator" | "TWY""designator").

75.7.5 Water Lane/Ski Strip – Information Change

Production_rule = "RWY" "designator" "type" "NOW" ["Length X Width"]\n
["composition" "lighted"] ["RWY" "designator"].

75.7.6 Water Lane – Distance Available

Production_rule = "RWY" "designator" "runway type" "type" "distance" {"type" "distance"}.

75.7.7 Water Lane – Threshold Displacement

Production_rule = "RWY" "designator" "type" "THR DSPLCD" "distance" ["marking"].

75.7.8 Water Lane – Ground Marking Status

Production_rule = "RWY" "designator" "type" "markingLocation" {"markingLocation"} ["location"]
"status".
location = ("FOR" ("RWY""designator"|"TWY""designator"))|"cardinalDirection".

75.7.9 Ski Strip – Distance Available

Production_rule = "RWY" "designator" "runway type" "type" "distance" {"type" "distance"}.

75.7.10 Ski Strip – Threshold Displacement

Production_rule = "RWY" "designator" "type" "THR DSPLCD" "distance" ["marking"].

75.7.11 Ski Strip – Ground Marking Status

Production_rule = "RWY" "designator" "type" "markingLocation" {"markingLocation"} ["location"]
"status".
location = ("FOR" ("RWY""designator"|"TWY""designator"))|"cardinalDirection".

75.7.12 Ski Strip/Water Lane – Surface Condition

Production_rule = RWY designator type [condition] [action] [ridge]\n
[frost_heave] [cracks_ruts] ["SOFT EDGES"].
condition = [coverage] depth type {OVR [coverage] depth type} [depth ridgeType].
action = clearanceMethod [width WIDE][ridge] {clearanceMethod [width WIDE][ridge]}\n
[RMNDR condition].
ridge = depth ridgeType.
frost_heave = "FROST HEAVE" direction length.
cracks_ruts = [NMRS] width type [direction length].

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