[NAV.UNS] Navaid unserviceable - decoding

Text NOTAM production rules

This section provides rules for the automated production of the text NOTAM message items, based on the AIXM 5.1 data encoding of the Event. Therefore, AIXM specific terms are used, such as names of features and properties, types of TimeSlices, etc:

- the abbreviation **NAV.BL.** indicates that the corresponding data item must be taken from the **Navaid BASELINE**, which is valid at the start time of the Event;
- the abbreviation **NAV.TD.** indicates that the corresponding data item must be taken from the **Navaid TEMPDELTA**;
- the abbreviation **NEQ.BL.** indicates that the corresponding data item must be taken from the **NavaidEquipment BASELINE**, which is valid at the start time of the Event;
- the abbreviation **NEQ.TD.** indicates that the corresponding data item must be taken from the **NavaidEquipment TEMPDELTA**;
    - Important note: According to encoding rule ER-11, the TEMPDELTA might also include NavaidOperationalStatus elements that have been copied from the BASELINE data for compliance with the AIXM Temporality rules. The current practice is to not include such static information in the NOTAM text. Therefore, all NavaidOperationalStatus that have an associated annotation with purpose=REMARK and the text="Baseline data copy. Not included in the NOTAM text generation" shall be excepted from the text NOTAM generation algorithm!

Several NOTAMs possible

There are several situations that can trigger the need to issue several NOTAM to ensure that the information appears in the relevant en-route and airport Pre-Flight Information Bulletins (PIB). The Event can have an explicit associationEvent to AirportHeliport as defined in ER-12. If the Event has an associationEvent to an AirportHeliport, a "navaid unserviceable" NOTAM with scope AE and subsequent NOTAMs for each airport that is affected needs to be published, with the corresponding airport designator in item A.

The rules for the “first NOTAM” containing the FIR in Item A are indicated below. For any additional NOTAM, refer to “several NOTAM possible” section.

Note: A better solution would be that such navaid outages are translated into one NOTAM with the FIR in item A. Then, separate Events and separate NOTAM should be published for the affected Procedures, having the airport identifier in item A. This approach will be considered for the further development of this Specification, when the scenario for Procedures unavailability will be included.

Item A

The item A shall be generated according to the geographical location of the Airspace and shall contain the Airspace.designator of the predefined FIR(s) for which a NOTAM has to be issued, except if there is an association Event to an AirportHeliport case in the AirportHeliport.designator shall be used.

Item Q

Apply the common NOTAM production rules for item Q, complemented by the following specific rules for this particular scenario:

Q code

The mapping provided in the tables below shall be used.

NAV.BL.type	***Corresponding Q codes (2nd and 3rd letters)***
ILS or ILS_DME	QIC - if both the Localizer and the Glidepath components have a (E)TD associated with the Event QID - if only its DME component has (E)TD associated with the Event QIG - if only its Glidepath component has (E)TD associated with the Event QIL - if only its Localizer component has (E)TD associated with the Event QII - if only its MKR component has (E)TD associated with the Event and its (N)BL.NavaidComponent. markerPosition=INNER QIM - if only its MKR component has (E)TD associated with the Event and its (N)BL.NavaidComponent. markerPosition=MIDDLE QIO - if only its MKR component has (E)TD associated with the Event and its (N)BL.NavaidComponent. markerPosition=OUTER QIY - if only its NDB component has (E)TD associated with the Event and its (N)BL.NavaidComponent. markerPosition=MIDDLE QIX - if only its NDB component has (E)TD associated with the Event and its (N)BL.NavaidComponent. markerPosition=OUTER
MLS or MLS_DME	QIW
NDB or NDB_MKR	QNB - if NDB component (E)BL.class=ENR QNL - if NDB component (E)BL.class=L

LOC or LOC_DME	QIN
DME	QND
MKR	QNF
VOR_DME	QNM
TACAN	QNN
VORTAC	QNT
VOR	QNV
DF	QNX
NDB_DME, TLS or OTHER	QXX

and

NAV.TD.operationalStatus	*Corresponding Q codes (4th and 5th letters)*
UNSERVICEABLE	AS
ONTEST	CT
INTERRUPT	LS
PARTIAL	AS
FALSE_INDICATION	XX
DISPLACED	CM
IN_CONSTRUCTION	XX
OTHER	XX

Scope

Insert here AE.

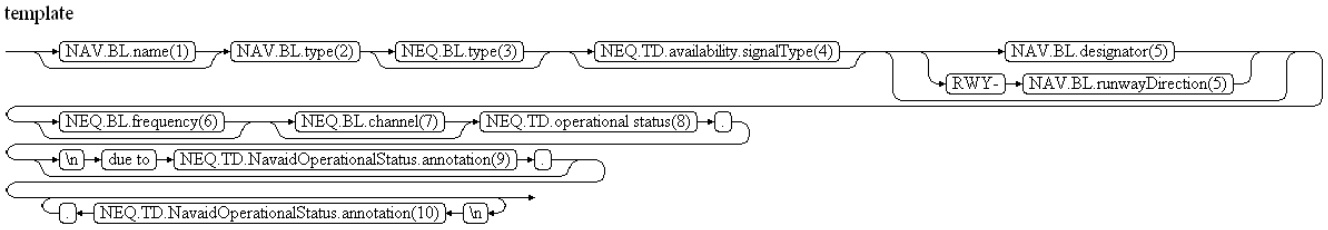
Items B, C and D

Items B and C shall be decoded from the values of **NAV.TD.validTime** following the common production rules.

If at least one **NAV.TD.NavaidOperationalStatus.timeInterval** exists (the Event has an associated schedule), then the associated Timesheets(s) shall be decoded in item D according to the common NOTAM production rules for {{Item D, E - Schedules}}. Otherwise, item D shall be left empty.

Item E

The following pattern should be used for automatically generating the E field text from the AIXM data:



EBNF Code

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template = ["NAV.BL.name(1)"] "NAV.BL.type(2)" ["NEQ.BL.type(3)"] ["NEQ.TD.availability.signalType(4)"] [( "NAV.
BL.designator(5)" | "RWY-" "NAV.BL.runwayDirection(5)")] \n ["NEQ.BL.frequency(6)"] ["NEQ.BL.channel(7)"] "NEQ.
TD.operational status(8)" "." \n
["\n" "due to" "NEQ.TD.NavaidOperationalStatus.annotation(9)" "."] \n
{"\n" "NEQ.TD.NavaidOperationalStatus.annotation(10)" "."}.
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<table>
<tr><th>Reference</th><th>Rule</th></tr>
<tr><td>(1)</td><td>The name of the Navaid shall be included if present in the NAV.BL data</td></tr>
<tr><td>(2)</td><td>Insert the type from the Navaid baseline, according to the following decoding rule:
<table>
<tr><th>NAV.BL. type</th><th>Text to be inserted in item E</th></tr>
<tr><td>VOR</td><td>"VOR"</td></tr>
<tr><td>DME</td><td>"DME"</td></tr>
<tr><td>NDB</td><td>If (E)BL.class=N then use the word "LOCATOR", otherwise use the word "NDB"</td></tr>
<tr><td>TACAN</td><td>"TACAN"</td></tr>
<tr><td>MKR</td><td>If used as NavaidComponent of an ILS or ILS_DME Navaid, then insert (N)BL.markerPosition first followed by "MKR", otherwise insert just the word "MKR"</td></tr>
<tr><td>ILS</td><td>"ILS"</td></tr>
<tr><td>ILS_DME</td><td>"ILS"</td></tr>
<tr><td>MLS</td><td>"MLS"</td></tr>
<tr><td>MLS_DME</td><td>"MLS"</td></tr>
<tr><td>VORTAC</td><td>"VORTAC"</td></tr>
<tr><td>VOR_DME</td><td>"VOR/DME"</td></tr>
<tr><td>DNB_DME</td><td>"NDB/DME"</td></tr>
<tr><td>TLS</td><td>"Transponder Landing System"</td></tr>
<tr><td>LOC</td><td>"LOC"</td></tr>
<tr><td>LOC_DME</td><td>"LOC/DME"</td></tr>
<tr><td>NDB_MKR</td><td>"NDB/MKR"</td></tr>
<tr><td>DF</td><td>"DF service"</td></tr>
<tr><td>SDF</td><td>"Simplified Directional Facility eqpt"</td></tr>
<tr><td>OTHER</td><td>None</td></tr>
</table></td></tr>
<tr><td>(3)</td><td>If the Navaid Baseline has several Navaid components and only one of its primary component NavaidEquipment has a NEQ.TD associated with the Event, then insert the type of that equipment, according to the following decoding rule:
<table>
<tr><th>NEQ. BL</th><th>Text to be inserted in Item E</th></tr>
<tr><td>DME</td><td>"DME part"</td></tr>
<tr><td>VOR</td><td>"VOR part"</td></tr>
<tr><td>TACAN</td><td>"TACAN part"</td></tr>
<tr><td>Glidepath</td><td>"GP part"</td></tr>
<tr><td>Localizer</td><td>"LOC part"</td></tr>
<tr><td>Azimuth</td><td>"azm signal"</td></tr>
<tr><td>Elevation</td><td>"elev signal"</td></tr>
<tr><td>SDF</td><td>"Simplified Directional Facility eqpt"</td></tr>
<tr><td>Direction Finder</td><td>"DF"</td></tr>
<tr><td>NDB</td><td>If (E)BL.class=N then use the word " LOCATOR", otherwise use the word "NDB"</td></tr>
<tr><td>MarkerBeacon</td><td>If used as NavaidComponent of an ILS or ILS_DME Navaid, then insert (N)BL.NavaidComponent.markerPosition first followed by "MKR", otherwise insert just the word "MKR"</td></tr>
</table></td></tr>
</table>

<table>
<tr><td>(4)</td><td>If NAV.BL is TACAN or VORTAC and its (TACAN)TD.availability.signalType is specified, then insert its value here.</td></tr>
<tr><td>(5)</td><td>The following rules apply:
If NAV.BL.type has the value ILS, ILS_DME, LOC, LOC_DME, MLS or MLS_DME, then insert the RunwayDirection.BL.designator of the associated NAV.BL.runwayDirection, if available;
Otherwise, insert the NAV.BL.designator, if available.</td></tr>
<tr><td>(6)</td><td>Apply the following rules:<table><tr><th>NAV.BL.type</th><th>Use the following value</th></tr><tr><td>VOR, VOR_DME, VORTAC</td><td>(VOR)BL.frequency followed by its uom value</td></tr><tr><td>NDB, NDB_MKR, NDB_DME</td><td>(NDB)BL.frequency followed by its uom value</td></tr><tr><td>SDF</td><td>(SDF)BL.frequency followed by its uom value</td></tr><tr><td>any other</td><td>leave empty</td></tr></table></td></tr>
<tr><td>(7)</td><td>Apply the following rules:<table><tr><th>NAV.BL.type</th><th>Use the following value</th></tr><tr><td>VOR_DME, DME, NDB_DME</td><td>(DME)BL.channel</td></tr><tr><td>TACAN, VORTAC</td><td>(TACAN)BL.channel</td></tr><tr><td>any other</td><td>leave empty</td></tr></table></td></tr>
<tr><td>(8)</td><td>Insert the NEQ.TD.operationalStatus decoded as follows:<table><tr><th>NEQ.BL.availability/operationalStatus</th><th>Text to be inserted in Item E</th></tr><tr><td>UNSERVICEABLE</td><td>"unserviceable"</td></tr><tr><td>ONTEST</td><td>"On test, do not use. False indication possible."</td></tr><tr><td>INTERRUPT</td><td>"subject to interruption"</td></tr><tr><td>PARTIAL</td><td>"unserviceable" (note that this should only occur for TACAN components)</td></tr><tr><td>FALSE_INDICATION</td><td>"do not use, false indication"</td></tr><tr><td>DISPLACED</td><td>"displaced"</td></tr><tr><td>IN_CONSTRUCTION</td><td>"in construction, do not use"</td></tr><tr><td>OTHER</td><td>"operational status is affected"</td></tr></table></td></tr>
<tr><td>(9)</td><td>If specified, insert here only the NEQ.TD.NavaidOperationalStatus.annotation that has propertyName="operationalStatus" and purpose="REMARK", translated into free text according to the following encoding rules.</td></tr>
<tr><td>(10)</td><td>Annotations shall be translated into free text according to the rules for annotations decoding.</td></tr>
</table>

Note: *The objective is to full automatic generation, without human intervention. However, the implementers of the specification might consider reducing the cost of a fully automated generation by allowing the operator to fine-tune the text in order to improve its readability (with the inherent risk for human error, when re-typing is allowed).*

Items F & G

Leave empty.

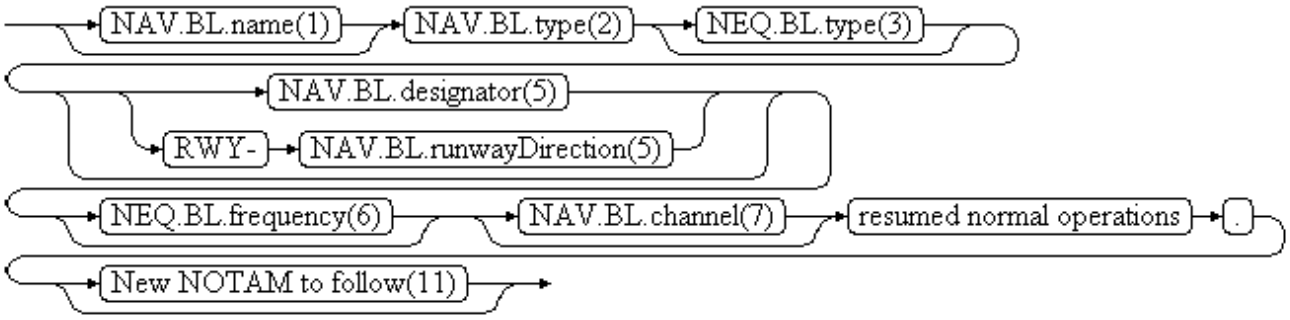
Event Update

The eventual update of this type of event shall be encoded following the general rules for {{Event updates or cancellation}}, which provide instructions for all NOTAM fields, except for item E and the condition part of the Q code, in the case of a NOTAM C

If a NOTAM C is produced, then the 4th and 5th letters (the "condition") of the Q code shall be "AK", except for the situation of a “new NOTAM to follow, in which case “XX”shall be used.

The following pattern should be used for automatically generating the E field text from the AIXM data:

template_cancel



EBNF Code

```
template_cancel = ["NAV.BL.name(1)"] "NAV.BL.type(2)" ["NEQ.BL.type(3)"]\n
[( "NAV.BL.designator(5)" | "RWY-" "NAV.BL.runwayDirection(5)")] \n
["NEQ.BL.frequency(6)"] ["NAV.BL.channel(7)"] "resumed normal operations""."\n
["New NOTAM to follow(11)"].
```

Reference	*Rule*
(11)	If the NOTAM will be followed by a new NOTAM concerning the same situation, then the operator shall have the possibility to specify "New NOTAM to follow" and this text shall be appended at the end of item E of the NOTAM C. Note: in this case, the 4th and 5th letters of the Q code shall also be changed into “XX”