

# AIXM/WXXM Conference

4<sup>th</sup>-6<sup>th</sup> of May 2010  
Washington, DC

AIXM – European operational developments  
Eddy Porosnicu, EUROCONTROL, AIM



# Content

- AIXM 5.1 documentation enhancements
- Digital NOTAM Concept finalization
- Start of implementation

# AIXM 5.1 documentation enhancements

# AIXM - Wiki

[www.aixm.aero/wiki](http://www.aixm.aero/wiki)

The image shows a screenshot of the AIXM Wiki homepage on the left and a browser window displaying the 'Class - City' article on the right. The homepage includes a search bar, navigation links, and a 'What is available' section. The browser window shows the article content, including a definition of 'Class - City', a list of attributes, and navigable associations.

**AIXM Wiki - Home**  
Last modified by EDUARDO POROSNCU on 2010/04/08 15:49

**What is available**

The Wiki has been upgraded to show version 5.1 of the Aeronautical Information Model. There is one page ("article") for each diagram and class from the UML XML examples and the "Temporality Concept" document. This is the base guidelines, mappings, FAQ, etc. - in other words, the true AIXM "wiki". Even if this is just the beginning, we hope that the current content will be organised in "spaces".

- o **AIXM Space**
  - o you will find one article for each AIXM 5.1 class, data type or diagram
  - o XML Encodings - you will find a few examples of AIXM 5.1 encodings
  - o Work in Progress | Temporality | you will find the content of the "Temporality Concept" document
  - o Work in Progress | Solutions | you will find proposed solutions
  - o AIXM 5.1 changes - you will find the list of changes that were implemented
- o **Applications Space**
  - o BasicMessage
- o **Extensions Space**
  - o Eurocontrol eAGM Extension - documentation about an European used for CDM/military airspace management process.
- o **Trials and Implementations Space**
  - o Digital SNOWTAM Trial - we are also using this Wiki to make a Digital SNOWTAM message is converted into an AIXM 5.1 message

If you are interested to contribute to the further development of the AIXM Wiki, please contact us.

**How to use the Wiki**

The most important function of a Wiki is probably the search... function. In the search field and press "Enter". You will get a list of all articles that contain the searched text.

**Some things to remember when browsing the Wiki**

**More about this ...** - you will see this link on top right of many pages, frequently you cannot log-in. It is a placeholder for an article that is expected to be written. It is necessary in order to protect the part of the Wiki that has been automatically generated. There are only very few pages that have some content on the "More about this ...".

- o All UML diagrams are "click-able", meaning that if you move the mouse over them, they will be displayed.

**Some technical details**

We are using xWiki version 2.1.2. One good news, we hope you can install it offline! We will try to export regularly the content of the on-line AIXM Wiki, so you can have it offline.

**Known bugs and limitations**

- o **Technical problem solved** If you still see below this line an error message, it means that the problem is now solved, but some browsers might still show it because of cache.

Tags:

COMMENTS (0) ATTACHMENTS (0) HISTORY INFORMATION

No comments for this document

LOG IN

search...

EXPORT MORE ACTIONS

QUICK LINKS

- o Home
- o Document Index
- o Tags
- o What's New
- o AIXM AERO site
- o AIXM Forum

File Edit View History Bookmarks Tools Help

Speed Dial

EUROCONTROL - Aeronautical Information Exchange Model

Class - City (AIXM:Class\_City) - XWiki - Mozilla Firefox

https://extranet.eurocontrol.int/https://prisme-oas.hq.corp.eurocontrol.int/aixmwiki\_public/bin/view/AIXM:Class\_City

More about this ...  
Discuss Class - City on the AIXM Forum

## Class - City

<< object >> Logical View AIXM AIXM Features.AirportHelipot.AirportHelipot

A city or location that may be served by an airport/helipot.

## List of attributes

Name	Data Type	Definition
name	TextNameType	The full free text name of the city or town the aerodrome/helipot is serving.

## Navigable associations from City

To	Association	Multiplicity	Role
Note	hasAnnotations	0..*	annotation

## Navigable associations to City

From	Association	Multiplicity	Role
AirportHelipot	serves	0..*	servedCity

## Used By (diagrams)

[AirportHelipot Diagram](#)

Attention, this article has been automatically generated from the AIXM UML Model and will be replaced in total when AIXM is updated. Any edits made in the meantime will be lost.

LAST MODIFIED BY EDEL GARRIHY ON 26/02/2009 AT 16:05  
VERSION 2.1 LAST MODIFIED BY EDEL GARRIHY ON 26/02/2009 AT 16:05

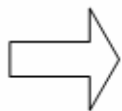
CREATOR: ADMINISTRATOR ON 2009/01/27 11:48



# Mapping AICM 4.5 -> AIXM 5.1



OBSTACLE
geoLat geoLong
txtName txtDescrType <sup>1</sup> codeGroup <sup>2</sup> codeLgt <sup>3</sup> txtDescrLgt txtDescrMarking codeDatum valGeoAccuracy uomGeoAccuracy valElev valElevAccuracy valHgt valGeoidUndulation uomDistVer valCrc txtVerDatum txtRmk



Vertical
name [txtName] highlighted [codeGroup] group [codeGroup]

1..\*

Vertical
verticalExtension @uom [uom] type [txtDescrType]

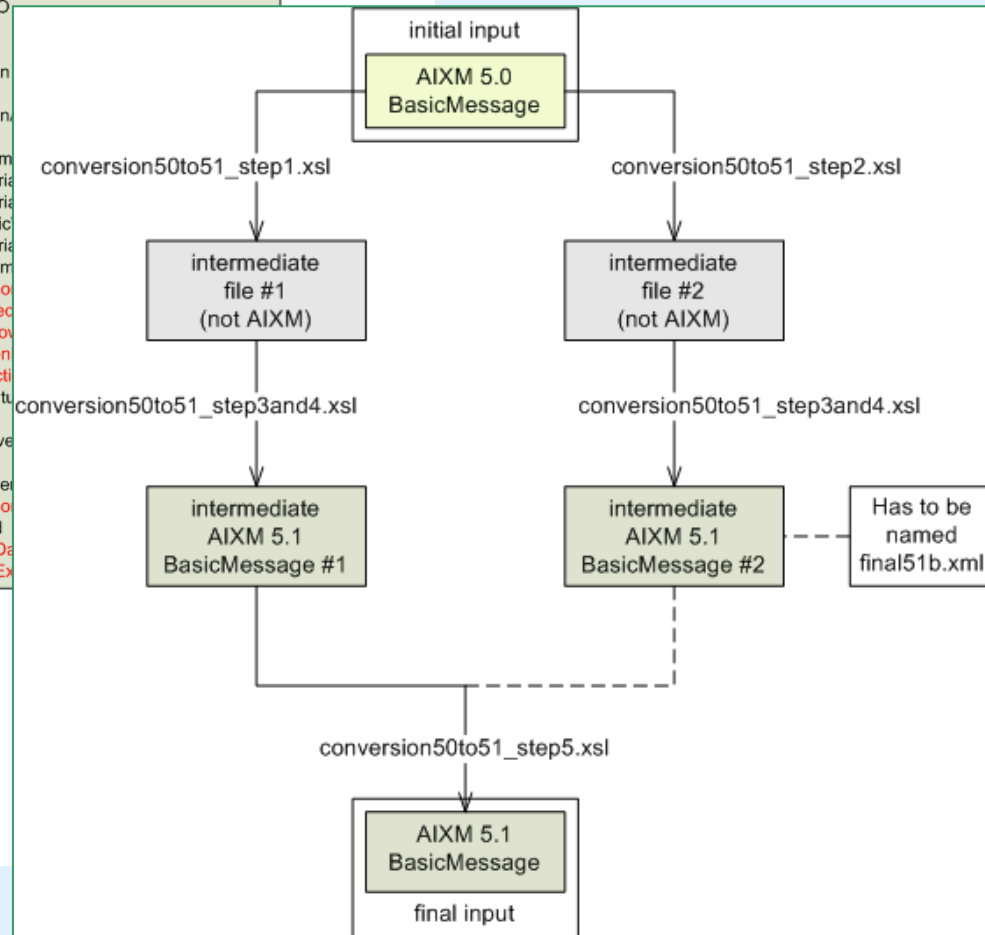
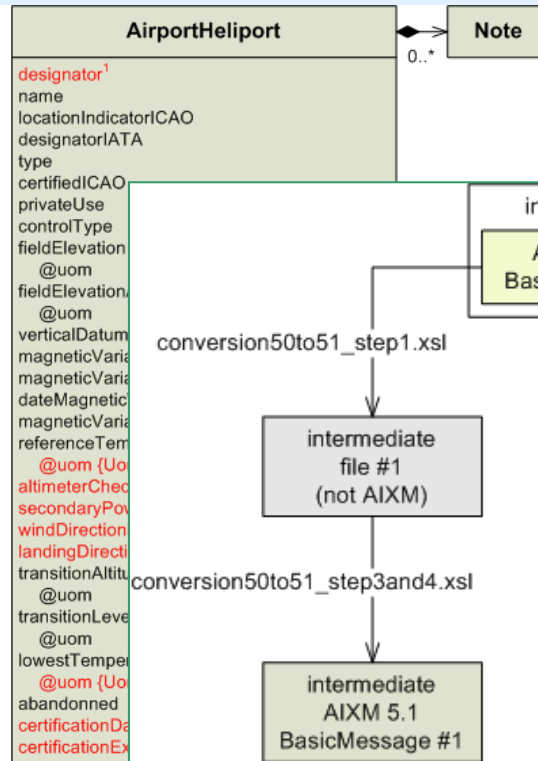
Page	Para	Category	Comment
18	2.2	editorial	txtDescrRefPT is written in italics, meaning, according to the convention that it is mapped according to the special rules provided in the annex. Although this is an elegant and optimised (reduces duplications) solution, it makes the document less readable, because you do not see immediately in which Annex to look.
24	2.5	comment	The mapping does not seem correct because it looks as the mapping also creates a NavaidEquipment of type VOR.
26	2.6	comment	This mapping is incomplete, because it does not indicate what type of ObstacleArea is needed.
27	2.7	question	Questions related to the 5.1 geometry: 1. why only GM_Ring? where is the LinearRing represented? 2. from the ElevatedCurve, why only ArcByCenterPoint and Geodesic? where are the rest of supported curves (e.g. LineStringSegment, Circle, etc.)
27	2.7	comment	ElevatedPoint indicates gml:pos is derived from "[geoLat geoLong]". This might be interpreted as the prescribed order (lat then long value) which is not true. The order of the coordinates in the gml:pos tuples is dependent on the srsName resource.
245	A1.1	comment	From our experience on further analysing the srsName values, we came up to the following conclusion: codeDatum cannot be mapped over geodetic datum URNs simply because they don't

Note
partyName [name of the attribute] use <sup>1</sup>
1..*
LinguisticNote
[content of the attribute] lang <sup>3</sup> cs:nii <sup>2</sup> nilReason <sup>2</sup>
warning <<codelist>> WIP PARKED_ACFT FAILAID

SPOWER OTHER	OTHER	SECONDARY_POWER
-----------------	-------	-----------------

- Draft Version "0.8" posted for review on the AIXM forum on Feb 24<sup>th</sup>, 2010 - **Your feedback is welcome.**

# AIXM Mappings 5.0 <-> 5.1



# Business Rules

- Constraints on the business extracted from official documents
  - consistency rules, recommended practices, coding rules, etc.
- AIXM 4.5 examples
  - *"All geographical coordinates should be expressed in the WGS 84 system"*
  - *"The geographical distance between the position of the DME and the position of the related VOR must be less than 30 metres if the VOR is located at an aerodrome/heliport"*
  - Etc.
- Apply SBVR
  - "Semantics of Business Vocabulary and Business Rules v1.0" published by OMG in January 2008
- Schematron encoding
  - Proof-of-concept – "AIXM Rule Checker" tool - ARC

# Business Rules

A	B	C	D	E	F	G	H	I
	Source	§	Rule textual description	Comments	XSD Rule	AIXM Class	AIXM Attribute	AIXM Association
60	AIXM 4.5 Bus	ILS_GP	Each Glidepath.slope must be between 1deg and 5deg	The value of the VAL_SLOPE has to lie between 1 and 5 degrees [ Data plausibility rule - Source: AIXM ]		GlidePath	slope	
61	AIXM 4.5 Bus	ILS_LLZ	Each Localizer.frequency must be between 108Mhz and 111,975Mhz	The value of the VAL_FREQ has to lie between 108 MHz and 111.975 MHz [ Standard - Source: ICAO Annex 10, Vol. 1, section 3.1.3.2 ]		Localizer	frequency	
62	AIXM 4.5 Bus	ILS_LLZ	Each Localizer.frequency should have a uom equal to 'MHz'	As a plausibility rule, the value of the UOM_FREQ should be 'MHz' [ Standard - Source: ICAO Annex 10, Vol. 1, section 3.1.3.2 ]		Localizer	frequency	
63	AIXM 4.5 Bus	MKR	Each MarkerBeacon.frequency must be equal to 75Mhz	The value of the VAL_FREQ must be 75 (MHz) [ Standard - Source: ICAO ]		MarkerBeacon	frequency	
64	AIXM 4.5 Bus	MKR	Each MarkerBeacon.frequency must have a uom equal to 'Mhz'	"The value of the UOM_FREQ must be MHz if VAL_FREQ is specified. [ Standard - Source: ICAO ]"		MarkerBeacon		
65	AIXM 4.5 Bus	MLS_AZIMUTH	Each Azimuth.angleCoverLeft must be greater than Azimuth.angleProportionalLeft	VAL_ANGLE_COVER_LEFT must be greater than VAL_ANGLE_PROP_LEFT [ Consistency rule - Source: AIXM ]		Azimuth	angleProportionalLeft	
66	AIXM 4.5 Bus	MLS_AZIMUTH	Each Azimuth.angleCoverRight must be greater than Azimuth.angleProportionalRight	VAL_ANGLE_COVER_RIGHT must be greater than VAL_ANGLE_PROP_RIGHT [ Consistency rule - Source: AIXM ]		Azimuth	angleProportionalRight	
67	AIXM 4.5 Bus	MLS_ELEVATION	Each Elevation.angleNominal must be greater than Elevation.angleMinimum	VAL_ANGLE_NML must be greater than VAL_ANGLE_MNM [ Consistency rule - Source: AIXM ]		Elevation	angleNominal, angleMinimum	
68	AIXM 4.5 Bus	MSA	Each SafeAltitudeAreaSector that has exactly one SafeAltitudeArea.type equal to 'MSA' must have exactly one CircleSector.lowerLimit that is at least 300 M.	The value of VAL_DIST_VER cannot be less than 300 metres		SafeAltitudeAreaSector		
69	AIXM 4.5 Bus	NAVAID_LIMITATION	Each RadioFrequencyArea that has a type equal to 'COV' must have at least one CircleSector.outerDistance	If CODE_TYPE='CVR' ('coverage'), then VAL_DIST_OUTER is mandatory		RadioFrequencyArea		
70	AIXM 4.5 Bus	NAVAID_LIMITATION	Each RadioFrequencyArea that has a type equal to 'SCL' must have an angleScallop	If CODE_TYPE='SCL' ('scaloping'), then VAL_ANGLE_SCALLOP is mandatory		RadioFrequencyArea		
71	AIXM 4.5 Bus	NAVAID_LIMITATION	Each CircleSector that has an outerDistance and that has an innerDistance must have CircleSector.outerDistance greater than CircleSector.innerDistance	VAL_DIST_OUTER must be greater than VAL_DIST_INNER		CircleSector		
72	AIXM 4.5 Bus	NAVAID_LIMITATION	Each CircleSector that has a lowerLimit and that has an upperLimit must have CircleSector.lowerLimit that is at most CircleSector.upperLimit.	If both VAL_DIST_VER_LOWER and VAL_DIST_VER_UPPER are specified, then the value of the lower limit must be smaller than or equal to the value of the upper limit (when converted to a common unit of measurement and reference system)		CircleSector		
73	AIXM 4.5 Bus	NAVAID_LIMITATION	Each RadioFrequencyAera that has an angleScallop must have a type equal to 'SCL' or 'COV'	VAL_ANGLE_SCALLOP may be specified only if CODE_TYPE is 'SCL' or 'CVR'		RadioFrequencyArea		
74	AIXM 4.5 Bus	NDB	Each NDB.name should have exactly 6 letters	TXT_NAME should, if possible consist of 6 letters [ Standard - Source: ICAO Annex 11, Appendix 2, paragraph 2.1.2 ]		NDB	designator	
75	AIXM 4.5 Bus	NDB	Each NDB.frequency must be between 190kHz and 1750kHz	The value of the VAL_FREQ must be in the interval 190 to 1750 kHz. [ Standard - Source: ICAO Annex 10, Vol. 1, section 3.4.4.1 ]		NDB	frequency	
76	AIXM 4.5 Bus	NDB	Each NDB.frequency must have a uom equal to to 'kHz'	The value of the UOM_FREQ must be kHz.[ Standard - Source: ICAO Annex 10, Vol. 1, section 3.4.4.1 ]		NDB	frequency	
77	AIXM 4.5 Bus	ORG_AUTH	Each OrganisationAuthority that has a type equal to 'ORG', 'INTL_ORG', 'ACFT_ORP'	"For every organisation/authority having CODE_TYPE = 'O', 'IO', 'AOA', 'HA', 'A' or 'ATS' there must be at least one postal address and one		OrganisationAuthority		



# Business Rules

## “Rule Manager”

AIXM BUSINESS Rules Manager 0.2 (ACCEPT)

Search

ID	Name	SBVR Text
852	NOTE_ENGLISH	Each Note should have at least one note in English
845	VOR_DECL_1DEG	Each VOR declination should be between 1 and 179 degrees
834	VOR_UOM_Mhz	Each VOR that has a frequency must have a unit of measure of MHz
833	VOR_FREQ_50KHZ	Each VOR frequency must be between 50000 and 119750 MHz
832	VOR_freq_between_108_and_117_975Mhz	Each VOR frequency must be between 108.000 and 117.975 MHz
831	VOR_name_must_be_6_char	Each VOR name should have a length of 6 characters
829	UnitDependency_Distance	Each UnitDependency that has a distance must have a unit of measure of meters
827	Unit_AirportHeight_Distance	Each Unit.ElevatedPoint must have a distance
826	UNIT_NOF_ADDRESS_AFTN	Each Unit that has a type of address must have an address
821	Unit_Address_Telephone	Each Unit must have at least one telephone number
786	Rule 786	Each TouchDownLiftOff.ElevatedPoint must have a distance
779	Timesheet_dayTil_same_category_as_day	Each Timesheet that has a day must have a timesheet of the same category as the day
778	Timesheet_UTCW_startEndDate_No SDLST_or_EDLST	Each Timesheet that has a start date must have a timesheet of the same category as the start date
777	Timesheet_endRelativeEvent_req_endEvent	Each Timesheet that has an end event must have a timesheet of the same category as the end event
776	Timesheet_endTime_endEvent_req_endEventInterpretation	Each Timesheet that has an end time must have a timesheet of the same category as the end time
775	Timesheet_endTime_or_endEvent	Each Timesheet must have an end time or end event
774	Timesheet_startRelativeEvent_req_startEvent	Each Timesheet that has a start event must have a timesheet of the same category as the start event
773	Timesheet_startTime_startEvent_req_startEventInterpretation	Each Timesheet that has a start time must have a timesheet of the same category as the start time
772	Timesheet_startTime_or_startEvent	Each Timesheet must have a start time or start event
769	FRL_UPPER_LEVEL_GT_LOWER_LOWER	Each FlightRestrictionLevel that has a level must have a level greater than the lower level
763	FRE_SPEED_REQ_SPEED_REF_AND_CRITERIA	Each FlightRoutingElement that has a speed must have a speed reference and criteria
762	TFC_FLOW_REST_MANDATORY_TYPE_REQ_FRR	Each FlightRestriction that has a type must have a flight restriction

Page 1 of 6

Properties

Name:	VOR_freq_between_108_and_117_975Mhz
Checking Level:	Error
Category:	Data consistency rule
Status:	Schematron proposed
Description:	The value of the VAL_FREQ must be in the interval 108.000 to 117.975 MHz
Created:	on Wednesday 2010-03-24 15:06 by INITIALLOAD (4 weeks ago)
Last Modified:	on Thursday 2010-04-08 10:19 by TDO (2 weeks ago)

Rule Editor

Name: VOR\_freq\_between\_108\_and\_117\_975Mhz

Description: The value of the VAL\_FREQ must be in the interval 108.000 to 117.975 MHz

Status: Schematron proposed | Checking level: Error | Category: Data consistency rule

Source: AIXM 4.5 Business Rules | Reference: VOR

SBVR Text: Each VOR frequency must be between 108,000MHz and 117,975MHz.

AIXM Class: VOR | AIXM Attribute: | AIXM Association: |

Schematron context: //aixm:VORTimeSlice

Schematron text: not(/aixm:frequency) or (/aixm:frequency[@xsi:nil='true']) or ((./aixm:frequency &gt;= 108) and (./aixm:frequency &lt;= 117.975)) and (./aixm:frequency[@uom='MHZ'])

CreatedBy: Initiaload | CreatedOn: 2010-03-24 15:06 | LastModifiedBy: tdo | LastModifiedOn: 2010-04-08 10:19

Save Cancel



# Digital NOTAM – Concept finalization

# Benefits

http://xnotam-trial.pulsar.be - Edit Airspace Permanent Change - Mozilla Firefox

## Edit Airspace Permanent Change

Effective Time Instant

Start date and time: 2008/02/07 13:10

Airspace Geometry Class Layers Notes

Shape:

Type: Surface

Latitude	Longitude
512252N	0043328E
511835N	0043325E
510251N	0045955E
510057N	0051655E
505731N	0052359E
505342N	0050316E
505830N	0043650E

Clear See on map Edit point

Event Description

505830N 0043650E-  
511032N 0042037E-  
512049N 0042812E-  
BACK TO FIRST POINT.  
F) FL195 G)JUL

http://xnotam-trial.pulsar.be/xnotam-trial-accept/features/airspa

### Roadmap for the Transition from AIS to AIM

First Edition - 2009

International Civil Aviation Organization

PRE-FLIGHT INFORMATION BULLETIN

FROM: Tue Jun 10 22:34:00 CEST 2003 TO: Thu Dec 04 22:34:00 CET 2003

FLIGHT RULES: **VFR IFR**

PURPOSE: ALL

SELECTED FEATURES: AERODROME/HELIPORT APRON DME PARKING AREA ILS MARKER  
NDB RUNWAY TAXIWAY VOR

A2866/05

EDDF: RWY 07L/25R closed for starting and landing . Open for taxiing.

### PRE-FLIGHT INFORMATION BULLETIN

FROM: Tue Jun 10 22:34:00 CEST 2003 TO: Thu Dec 04 22:34:00 CET 2003

FLIGHT RULES: **VFR IFR**

PURPOSE: ALL

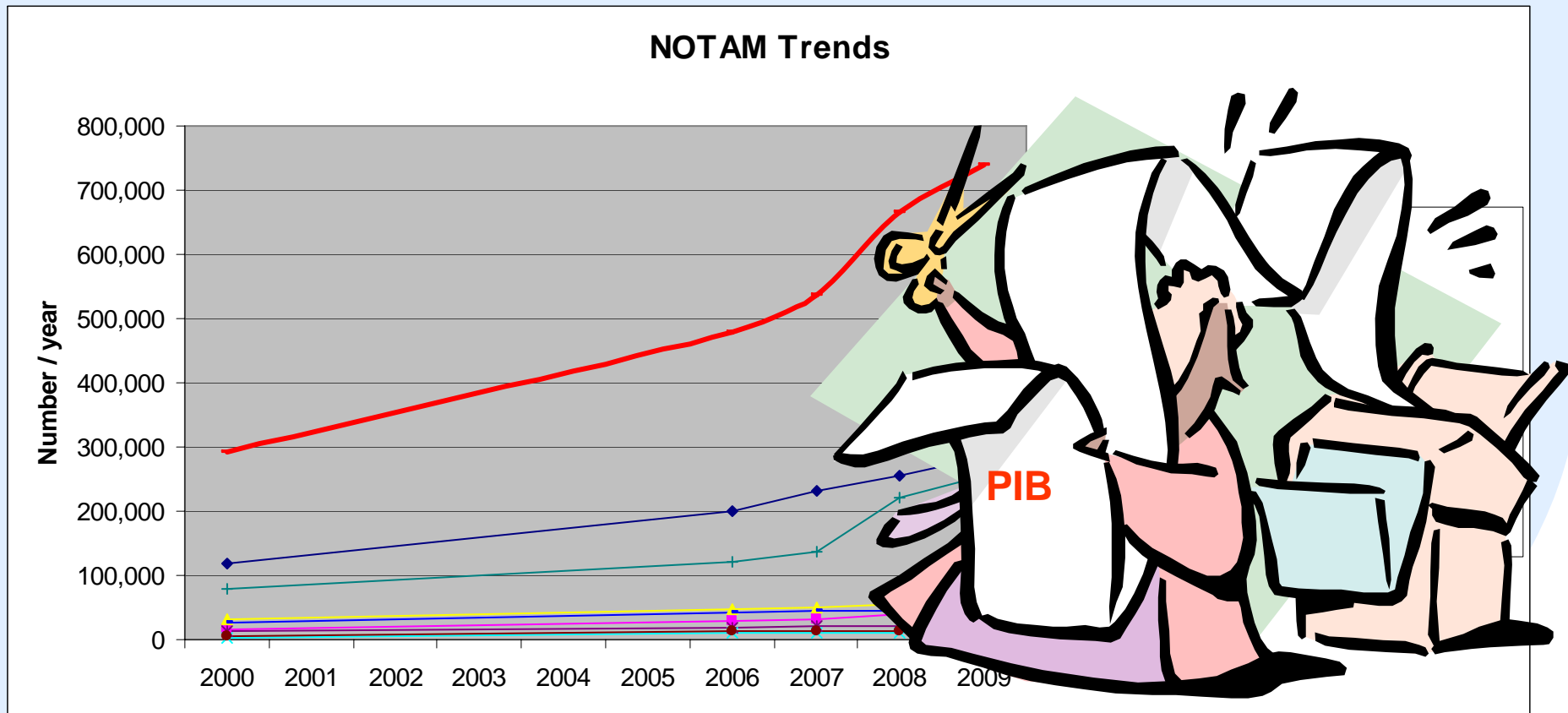
SELECTED FEATURES: AERODROME/HELIPORT APRON DME PARKING AREA ILS MARKER  
NDB RUNWAY TAXIWAY VOR

- AERODROME EHAM  
FROM 2003-07-02T13:00:00 TO 2003-10-02T13:00:00  
BIRD CONCENTRATION
  - RUNWAY 01L/19R
  - RUNWAY 01R/19L
- TAXIWAY W7  
FROM 2003-06-15T00:00:00 TO 2003-06-17T03:00:00  
TWY OUT OF SERVICE FOR WEIGHT HEAVIER THAN 19000 KGS
- NDB CH 521314.22N 0043327.36E

Manual workload

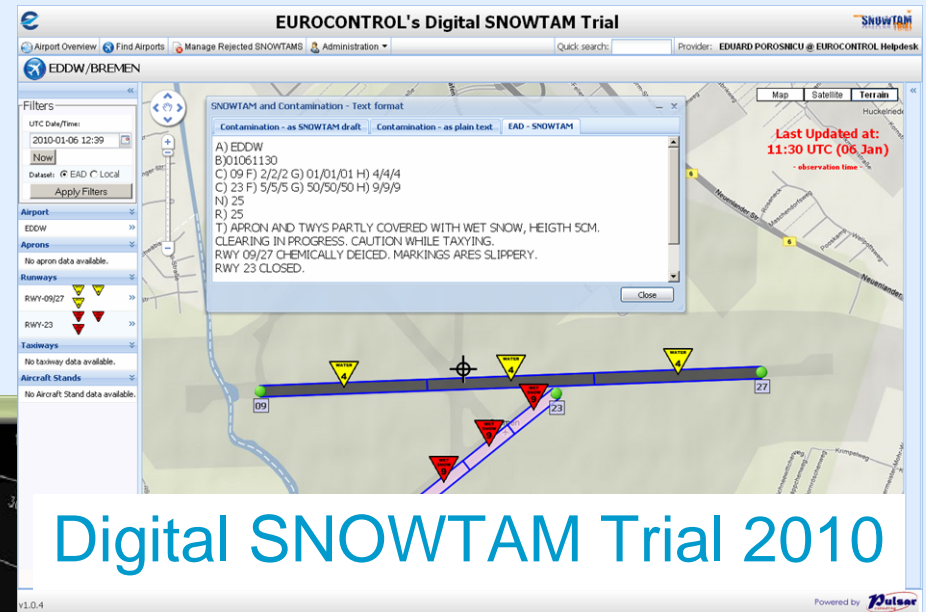
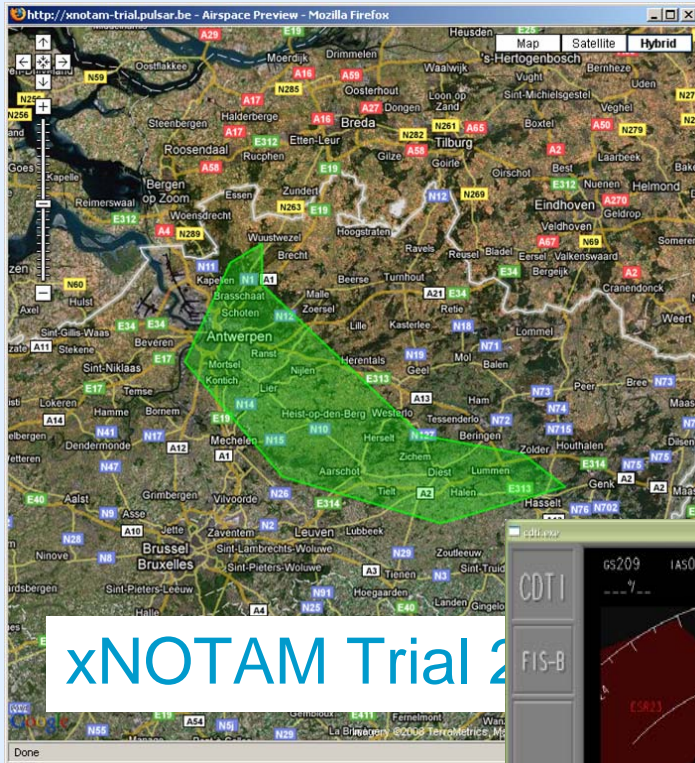
Data quality

# Do nothing – not an option



Source: European AIS Database (EAD)

# Concept validation



# Realistic short term benefits

- Graphical SNOWTAM – very positive comments from airlines

The image displays two overlapping screenshots of the EUROCONTROL's Digital SNOWTAM Trial interface. The top screenshot shows a map of Europe with various airports marked. The bottom screenshot provides a detailed view of EDDW/BREMEN, including a list of filters and a pop-up window for SNOWTAM and Contamination data.

**EUROCONTROL's Digital SNOWTAM Trial**

Provider: EDUARD POROSNICU @ EUROCONTROL Helpdesk

**Filters**

UTC Date/Time: 2010-01-06 12:39

Dataset: EAD C Local

Apply Filters

**Filters**

- Airport: EDDW
- Aprons: No apron data available.
- Runways: RWY-09/27, RWY-23
- Taxiways: No taxiway data available.
- Aircraft Stands: No Aircraft Stand data available.

**SNOWTAM and Contamination - Text format**

Contamination - as SNOWTAM draft | Contamination - as plain text | EAD - SNOWTAM

A) EDDW  
B) 01061130  
C) 09 F) 2/2/2 G) 01/01/01 H) 4/4/4  
C) 23 F) 5/5/5 G) 50/50/50 H) 9/9/9  
N) 25  
R) 25  
T) APRON AND TWYS PARTLY COVERED WITH WET SNOW, HEIGHT 5CM.  
CLEARING IN PROGRESS. CAUTION WHILE TAXIING.  
RWY 09/27 CHEMICALLY DEICED. MARKINGS ARE SLIPPERY.  
RWY 23 CLOSED.

Last Updated at: 11:30 UTC (06 Jan) - observation time

Powered by Google

1000 ft / 200 m

Powered by Pulsar

EUROCONTROL

# Realistic short term benefits

- Airspace reservation for VFR community
  - Eliminate the need for difficult & imprecise text-to-graphics translations

Flight Planning Map - Mozilla Firefox

http://shgc.org.uk/php/notams.php

Map Satellite Hybrid Terrain

NOTAM details

- Show airspace restrictions
- Show navigation warnings
- Only show today's NOTAMs
- Show NOTAMs outside daylight hours (Sunrise is 5:43, sunset 17:49 today)

Airspace Details

- Show Default airspace
- Show class A airspace
- Show class D airspace
- Show class E airspace
- Show class G airspace
- Show prohibited airspace
- Show restricted airspace
- Show MATZs
- Show danger areas
- Show offshore/NOTAMed danger areas
- Show gliding sites
- Show wave windows

Flying Sites

- Show hill sites
- Show winching sites
- Show aerotow sites
- Hide HG-only sites
- Hide PG-only sites
- Hide members-only sites

Details from surface to: FL55/5500ALT

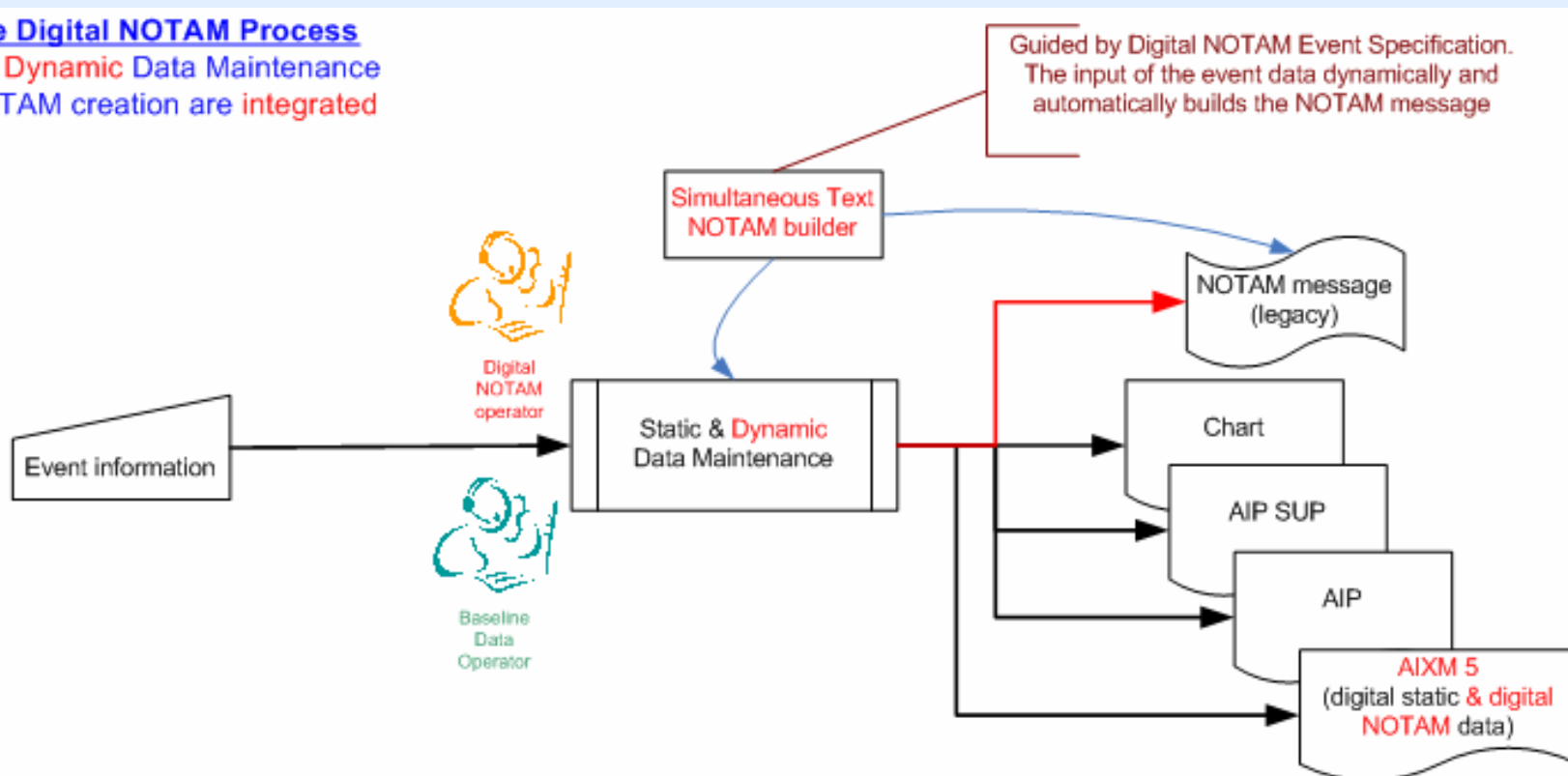
Get help with the map [here](#)

NOTAMs extracted from NATS web site, briefing ID 0911230700, at 07:00  
You are visitor number 808

http://shgc.org.uk/php/notams.php

# Digital NOTAM provision

**Future Digital NOTAM Process**  
Static & Dynamic Data Maintenance  
and NOTAM creation are integrated





# Event specification

- Identify categories of events
  - temporary obstacle at the airport
  - ad-hoc restricted area
  - etc.
- For each type of event, specify:
  - the data usually provided
  - the data encoding rules
    - including AIXM grouping and data validation rules
  - the conversion rules into text NOTAM (ICAO format)
  - Examples
- Digital NOTAM Focus Group
  - Scope of Increment 1
  - Event Scenarios

**Equivalent to FAA "NOTAM Scenarios" work**

# Scope of Increment 1

1. **Airspace activation / reservations / warning areas / CTR (that are not H24);**
  - Justification: up-to-date “airspace activity” charts for VFR community, graphical enhancements to PIB, visualisation for ATC/APP, information provided to the pilot by ATC on request;
2. **Route closures (CDR1, CDR 2, other routes);**
  - Justification: up-to-date airspace/route availability data for flight planning applications;
3. **Navaid events (all, including ILS);**
  - Justification: critical data for Airline Operational Centres;
4. **Airport/Runway closures;**
  - Justification: critical data for Airline Operational Centres, graphical enhancements to PIB;

# Scope of Increment 1

5. **Taxiway closures / work areas;**
  - Justification: graphical enhancements to PIB (identified difficulty – requires static data for Taxiway elements geometry);
6. **Obstacles;**
  - Justification: critical data for Airline Operational Centres, graphical enhancements to PIB;
7. **SNOWTAM;**
  - Justification: critical data for Airline Operational Centres, graphical enhancements to PIB;
8. **All other NOTAM as Text NOTAM associated with the feature;**
  - Justification: completeness of the solution, to avoid digital data users having to also consult text NOTAM from another source.

# Event Specification

- Goal: world-wide applicability
  - Compatible with ICAO SARPS & Guidelines for NOTAM
  - Reuse a maximum from the FAA "scenarios"
- First priority until end of May 2010
  - Increment 1
  - FG Meeting on 16-17 June

WorkArea Wiki > xNOTAM workspace > Event Specification > Event scenarios > Segregated Area activation

## Segregated Area activation

Last modified by superadmin on 2010/03/25 12:29 Comments (0) | Attachments (2) | History | Information

### Definition

The activation of an existing (predefined) segregated, reserved, restricted or similar airspace.

### Event data

The template shown below highlights the information that is usually provided by a data originator for this kind of event. Elements in "lower case" indicate variables that, in a real message, are replaced with actual data.

**Template**

```

type → APEA → designator → name → activation status
FROM → start activation → TILL → end activation → AS FOLLOWS → schedule →
activity type → TAKING PLACE
BETWEEN → lowermost level → AND → uppermost level
note
    
```

Example:

```

TRA EAR23 DONLON EAST ACTIVE
FROM 10 JUL 2010 07:00 TILL 10 JUL 16:00.
MILITARY EXERCISE TAKING PLACE.
For further information please contact DONLON ACC on phone (12) 123 45 67.
    
```

The table below provides more details about each variable contained by the template and also the mapping with the AIM 5.1 structure. The name of the variable (first column) is recommended for use as label of the data field in human-machine interfaces (HMI).

Data item	value	AIMX mapping
<b>type</b>	The type of airspace concerned according to the <a href="#">CodeAirspaceType</a>	<a href="#">Airspace.type</a>
<b>designator</b>	The published designator of the airspace concerned	<a href="#">Airspace.designator</a>
<b>name</b>	The published name of the area	<a href="#">Airspace.name</a>
<b>activation status</b>	The activation status according to the <a href="#">CodeStatusAirspaceType</a>	<a href="#">Airspace/AirspaceActivation.status</a>
<b>start activation</b>	The effective date & time when the airspace becomes active	<a href="#">Airspace/AirspaceTimeSlice/TimePeriod.beginPosition</a>
<b>end activation</b>	The end date & time when the airspace activity ends and the area is released for civil use	<a href="#">Airspace/AirspaceTimeSlice/TimePeriod.endPosition</a>
<b>schedule</b>	A schedule might be provided, in case the area is effectively only active according to a regular timetable, within the overall activity period	<a href="#">Airspace/AirspaceActivation/Timesheet/...</a>
<b>activity type</b>	The kind of activity that takes place in the airspace, mapped to the AIMX <a href="#">CodeAirspaceActivityType</a> list of values	<a href="#">Airspace/AirspaceActivation.activity</a>
<b>lowermost level</b>	If the activation only starts from a certain level, above the floor of the Airspace itself	<a href="#">Airspace/AirspaceActivation/AirspaceLayer.lowerLimit</a> and <a href="#">lowerLimitReference</a>
<b>uppermost level</b>	If the activation ends at a certain level, below the ceiling of the Airspace itself	<a href="#">Airspace/AirspaceActivation/AirspaceLayer.upperLimit</a> and <a href="#">upperLimitReference</a>
<b>note</b>	A free text note that provides further instructions concerning the area activation	<a href="#">Airspace.annotation</a>

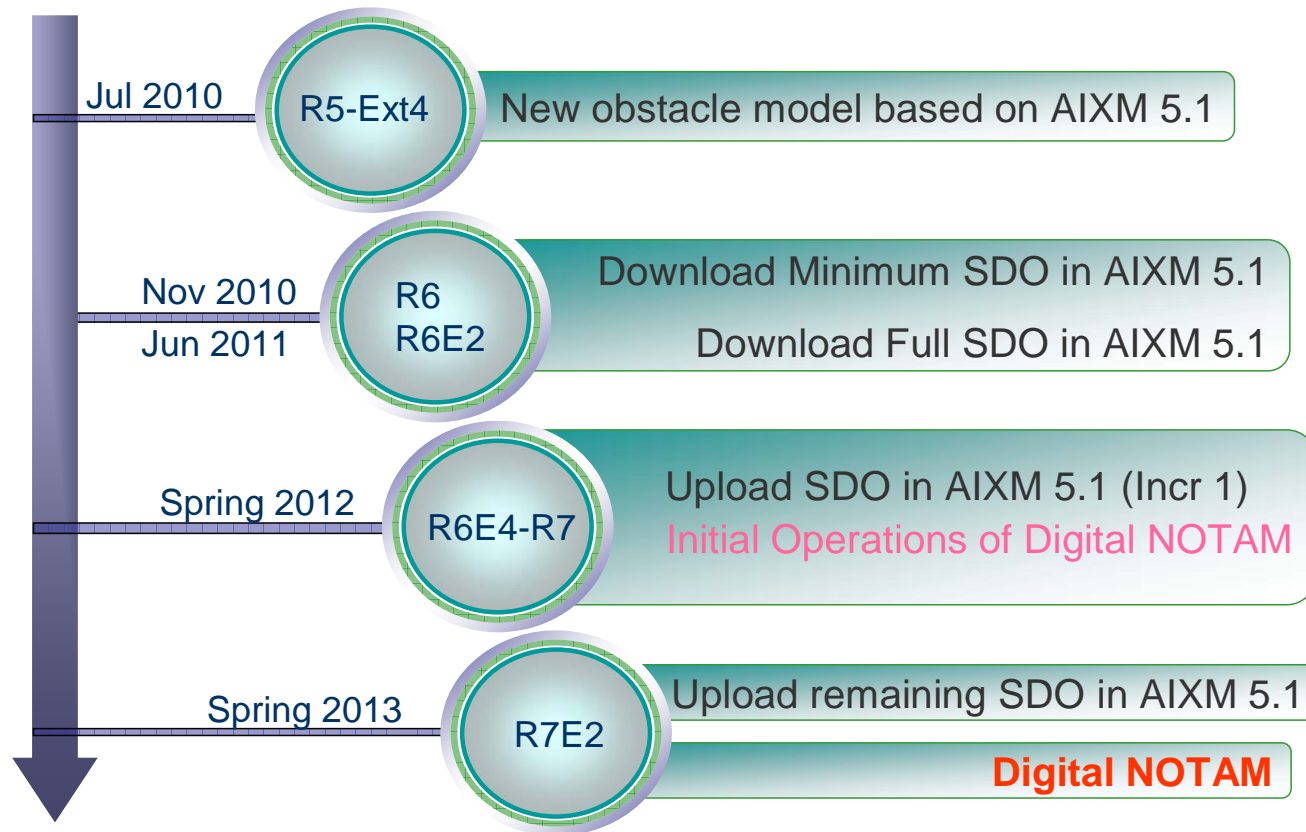
Notes:

- NIL

# Start of implementation

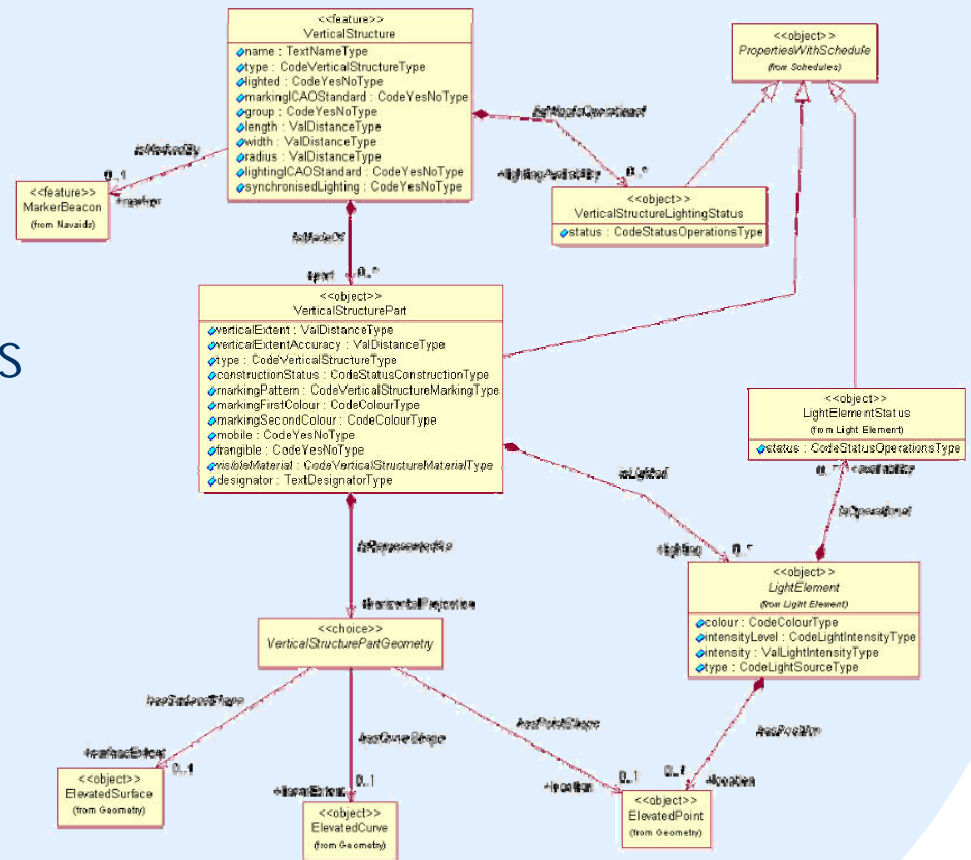
# European AIS Database (EAD)

## AIXM 5.1 Implementation – Timetable



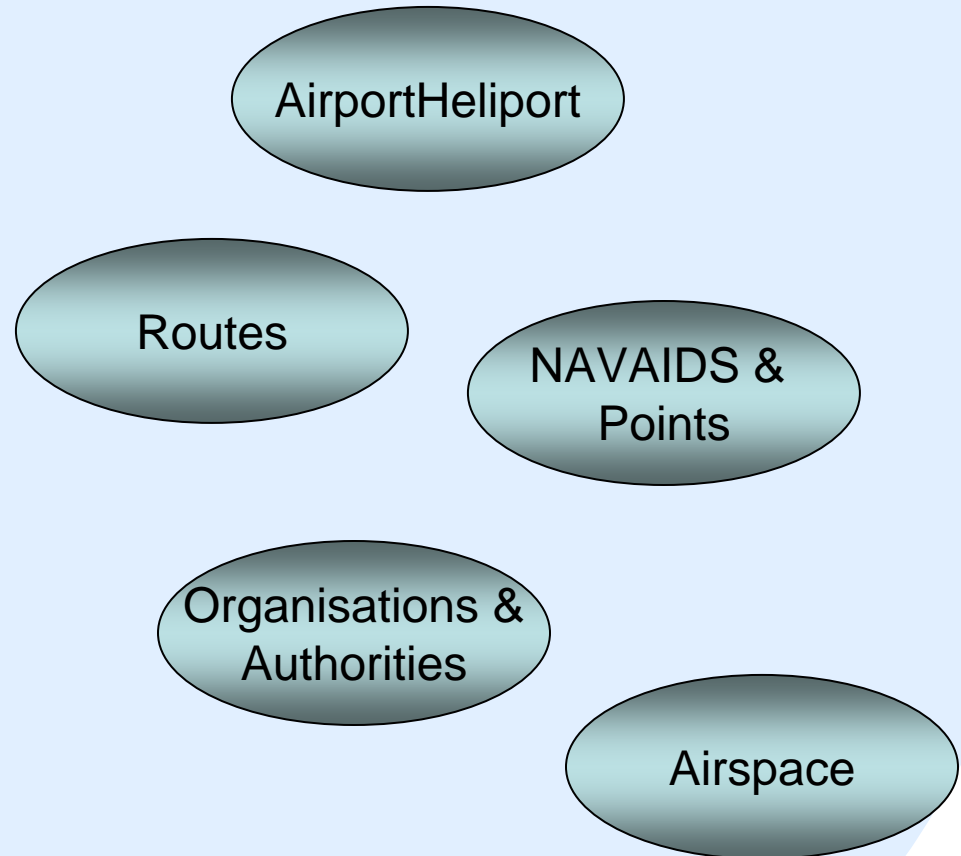
# Obstacle Implementation

- First step of AIXM 5.1 implementation
  - VerticalStructure
  - ObstacleArea
- Upload/Download of obstacles in AIXM 5.1
- Business & Mapping Rules



# AIXM 5.1 Minimum Static Data Download

- Release 6 (NOV 2010)
  - Minimum SDO data download in AIXM 5.1
    - Stakeholder support for development and implementation of AIXM 5.1
    - Operational support for ATM / ATFCM / FPL...





# EAD – Digital NOTAM Prototyping

**NOTAM and Proposals List**

NOTAM and Proposals selected by parameter set:  Quick Filter

L	T	Identifier	R/C Id	Site	Item	Cond	Start Date	End Date	Status	Status Date	User	Unit
E	N	A0287/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0356/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0665/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0479/10		LOWVV	AERODROME	HOURS OF OPS/SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0313/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0202/10		CYFB	FROBAY VOR/DME YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0496/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit
E	N	A0596/10		CYFB	FROBAY VOR YFB FREQ 117.4 MHZ	OUT OF SERVICE	05/05/09 10:30	06/05/09 12:00	Pending	06/05/09 12:00	User1	Ottawa Airport Authorit

**NOTAM Proposal**

**Data**

- Air-/Heliport(s)
  - CYAC
  - CYYE
    - Address(es)
    - Runway(s)
      - RWY-03/21
      - RWY-08/26
        - Centre Line Position(s)
          - 585009.6N; 1223438.9W
          - 585018N; 1223554.9W
          - 585008.00N; 1223436.01W
          - 585012.65N; 1223522.66W
        - Direction(s)
          - 26
          - 08
    - Taxiway(s)
- Air-/Heliport Usage(s)
  - FATO(s)
  - TLOF(s)
  - Ground Service(s)
  - Fuel
  - Oil
  - Passenger Facilities
  - Apron(s)
  - Timetable
- CYYG
- CYYI

Condition

**Condition Definition**

Choose One

Choose One

10

**Q-Line**

Q-FIR

Lower:  Upper:

Start Time:    Immediately

End Time:    Estimated

**Group text:**

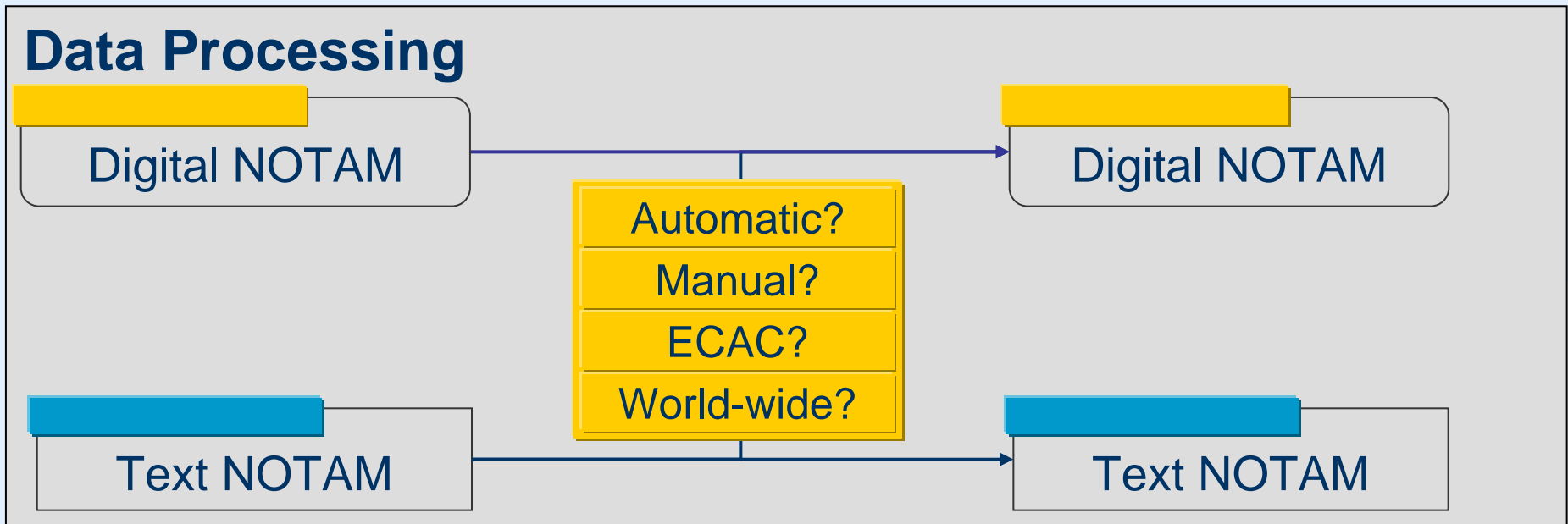
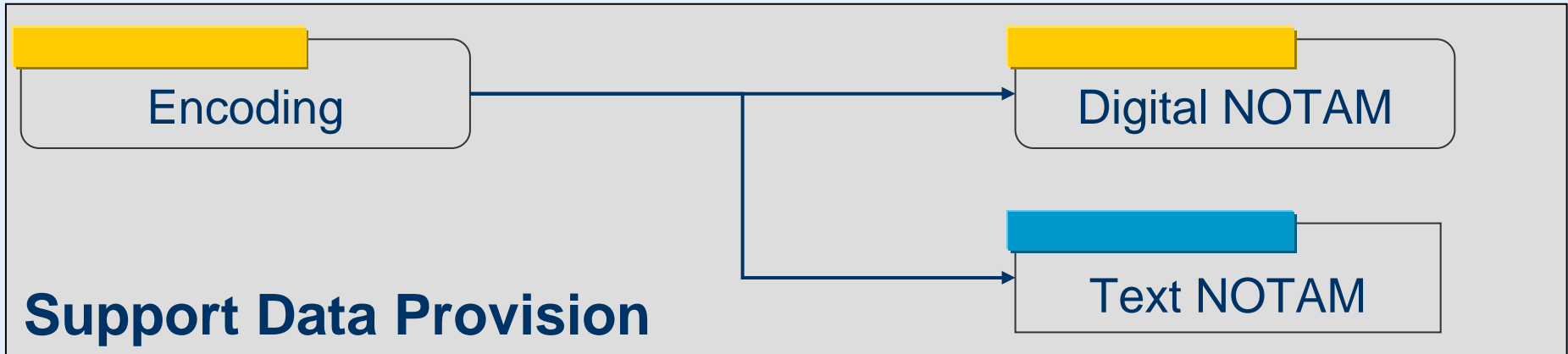
ICAO ENGLISH:  
(A0356/10 NOTAMN  
Q) CZUL/QNVAS/IV/BO/AE/0/999/6345N06833W5  
A) CYFB  
B) 1003261049 C) 1003271049  
E) FROBAY VOR YFB FREQ 117,4 MHZ OUT OF SERVICE  
)

ICAO FRENCH:  
(F0158/10 NOTAMN  
Q) CZUL/QNVAS/IV/BO/AE/0/999/6345N06833W5  
A) CYFB  
B) 1003261049 C) 1003271049  
E) (F) FROBAY VOR YFB FREQ 117,4 MHZ (F) OUT OF SERVICE  
)

DOM ENGLISH:  
100024 NOTAMN CYFB IQALUIT  
YFB- FROBAY VOR YFB FREQ 117,4 MHZ OUT OF SERVICE 1003260000 TIL 1003270000

DOM FRENCH:  
100024 NOTAMN CYFB IQALUIT  
YFB- (F) FROBAY VOR YFB FREQ 117,4 MHZ (F) OUT OF SERVICE 1003260000 TIL 1003270000

# EAD functions



# AIXM 5.1 – implementation by industry

- Proof of progress
  - AIXM Seminars
  - ATC Amsterdam - exhibition
  - Press releases
  - Exhibition here
  - OWS-7

# CFMU – Airspace / route closure

The screenshot shows the Altova XMLSpy interface with the following XML structure:

```
<?xml version='1.0' encoding='UTF-8'>
  <xmlns:xlink="http://www.w3.org/1999/xlink" />
  <xmlns:gml="http://www.opengis.net/gml/3.2" />
  <requestId>B2B_CUR:15</requestId>
  <requestReceptionTime />
  <sendTime />
  <status>OK</status>
  <data>
    <cdrOpeningsClosures>
      <ns2:id>ID_2240</ns2:id>
      <ns9:hasMember (75)>
        <ns4:RouteSegment />
        <ns4:RouteSegment />
      </ns9:hasMember>
    </cdrOpeningsClosures>
  </data>
</?xml>
```

- Since April 2010 – eAMI messages in AIXM 5.1
  - Web service on EUROCONTROL NOP Portal
  - Conditional routes – activation / closure
  - TRA/TSA (reserved airspace) activation
  - Immediate use for graphical visualisation possible

The screenshot continues with the following XML structure:

```
<ns4:availability />
  <ns4:RouteSegment ns2:id=ID_2259 />
  <ns4:RouteSegment ns2:id=ID_2277 />
</?xml>
```

# Summary

- AIXM 5.1 documentation enhancements
  - Wiki
  - AIXM Mappings
  - AIXM Business rules
- Digital NOTAM Concept finalization
  - Digital/graphical SNOWTAM Trial
  - Digital NOTAM Event Specification
- Start of implementation
  - European AIS Database (EAD)
  - Industry
  - CFMU eAMI Messages

