



D-NOTAM project

May, 21st 2014

Michal Pufr

AIS Specialist



Michal Pufř

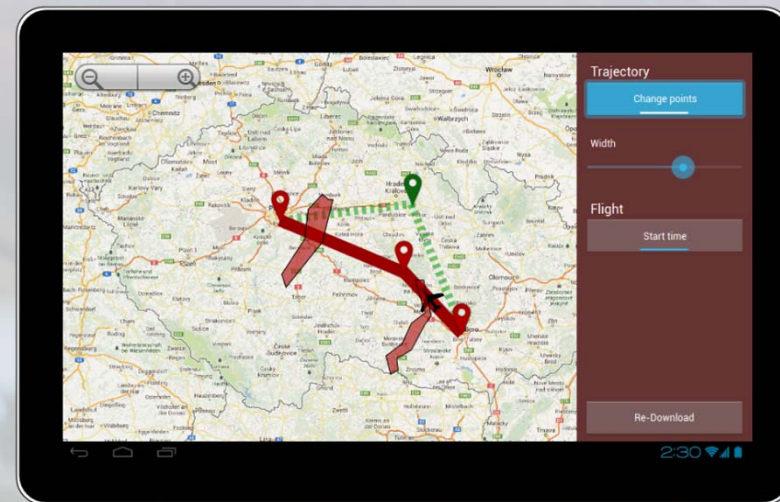
- ANS CR, since 2002
- AIS specialist
- Member of the Digital NOTAM FG
- Member of National Digital NOTAM project team
- Email: pufř@ans.cz

DLH1MF
169 #22
KOLAD DE8C
#220 h223 i173 #11 1013



AIM of the project

To design solutions and the development of prototypes that will work together with the new concept of data services, NOTAM, based on AIXM 5.1 data model





List of participants

- HONEYWELL
- ARTISYS
- VUT
- ANSP of the Czech Republic

- Partially funded by



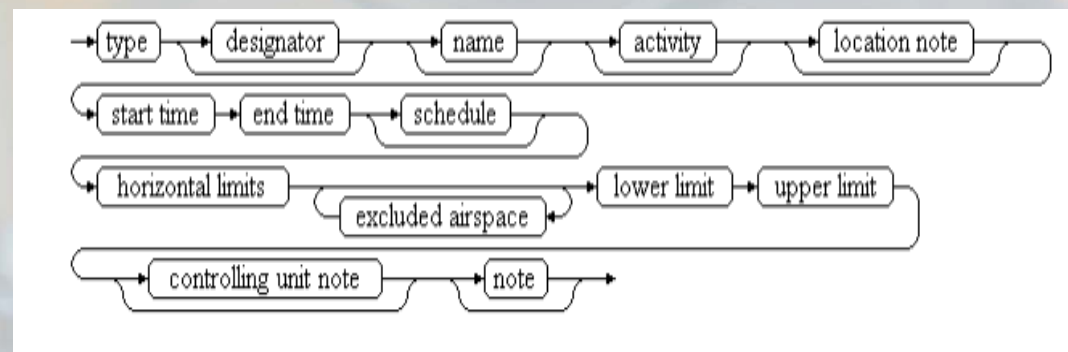
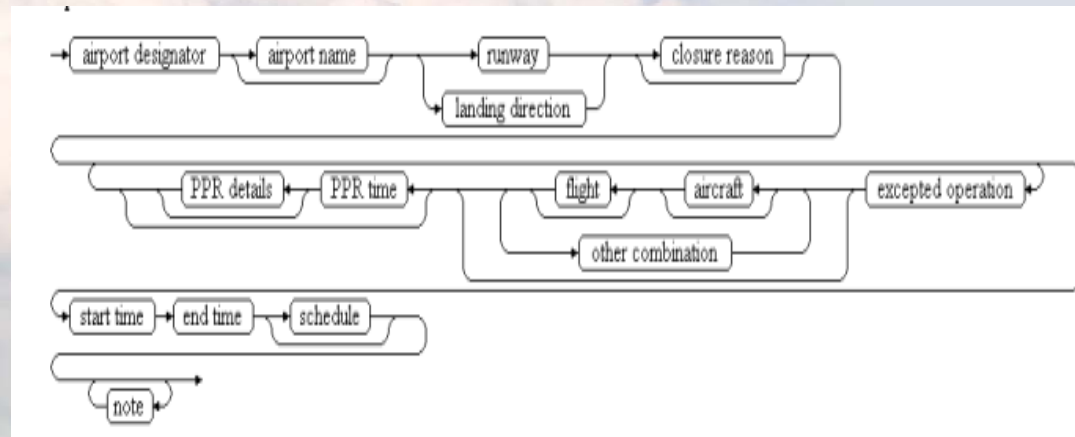
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of the Czech Republic



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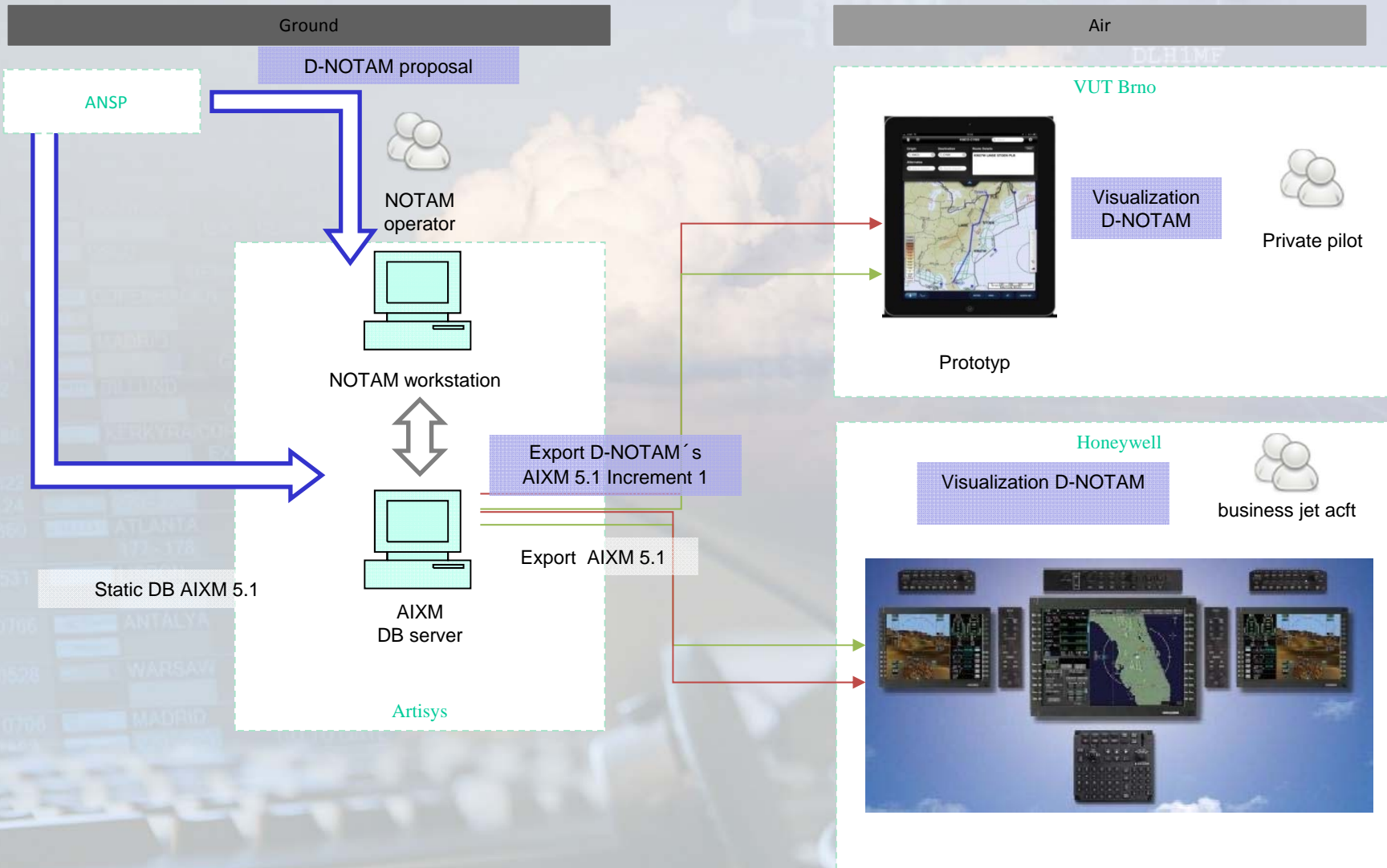
Chosen events of Increment 1:

- SAA.ACT
- ATSA.ACT
- ATSA.NEW
- SAA.NEW
- RTE.CLS
- AD.CLS
- RWY.CLS
- NAV.UNS
- OBS.NEW
- OTHER



D-NOTAM project

How it works





FirMapper

File Edit View Object Map Help

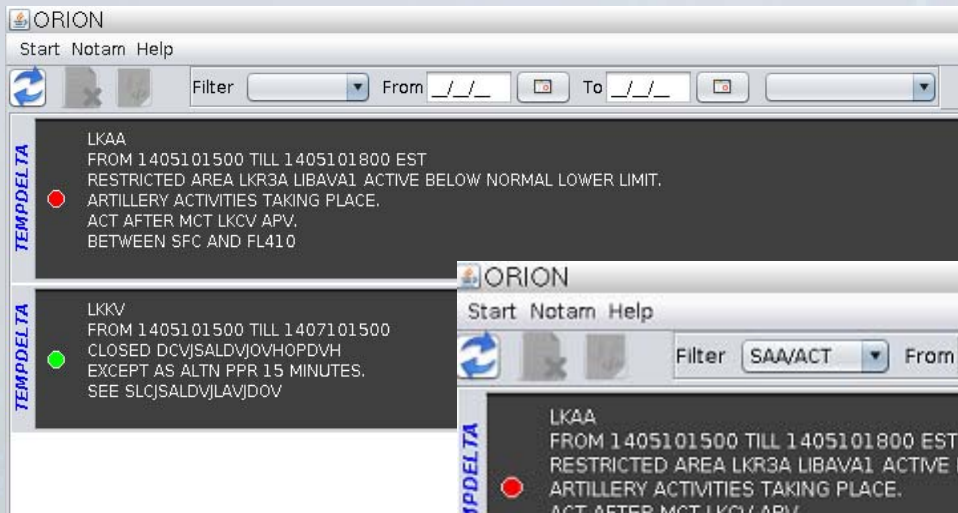
1: RLP
2: MICHAL

FIR Video data

Point	FIR	Video data
▲ ABRAX/REP	494151N	0155341E
▲ ABUDO/REP	485047N	0141424E
▲ ADADO/REP	501234N	0174452E
▲ ADISU/REP	485606N	0163255E
▲ ADLET/REP	483403N	0141757E
▲ AGNAV/REP	493404N	0123652E
▲ AKEVA/REP	495717N	0140237E
▲ ANTEK/REP	500012N	0175725E
▲ ANEXO/REP	495145N	0150359E
▲ ARNUM/REP	501234N	0170635E
▲ ARTUP/REP	504106N	0145418E
▲ ARVEG/REP	495956N	0144102E
▲ ASTEL/REP	505152N	0145137E
▲ BABUS/REP	485849N	0171804E
▲ BAGRU/REP	502554N	0142013E
▲ BALTU/REP	500522N	0131935E
▲ BAROX/REP	495654N	0134315E
▲ BAVIN/REP	495642N	0144341E
▲ BAVOK/REP	500010N	0181143E
▲ BEDLO/REP	501109N	0151857E
▲ BEKT0/REP	495756N	0124243E
▲ BEKVI/REP	500424N	0144320E
▲ BELUX/REP	492239N	0161057E
▲ BEPAS/REP	485354N	0133034E
▲ BILNA/REP	492336N	0182650E
▲ BISGI/REP	501620N	0123937E



ORION — application for the generation of D-NOTAM

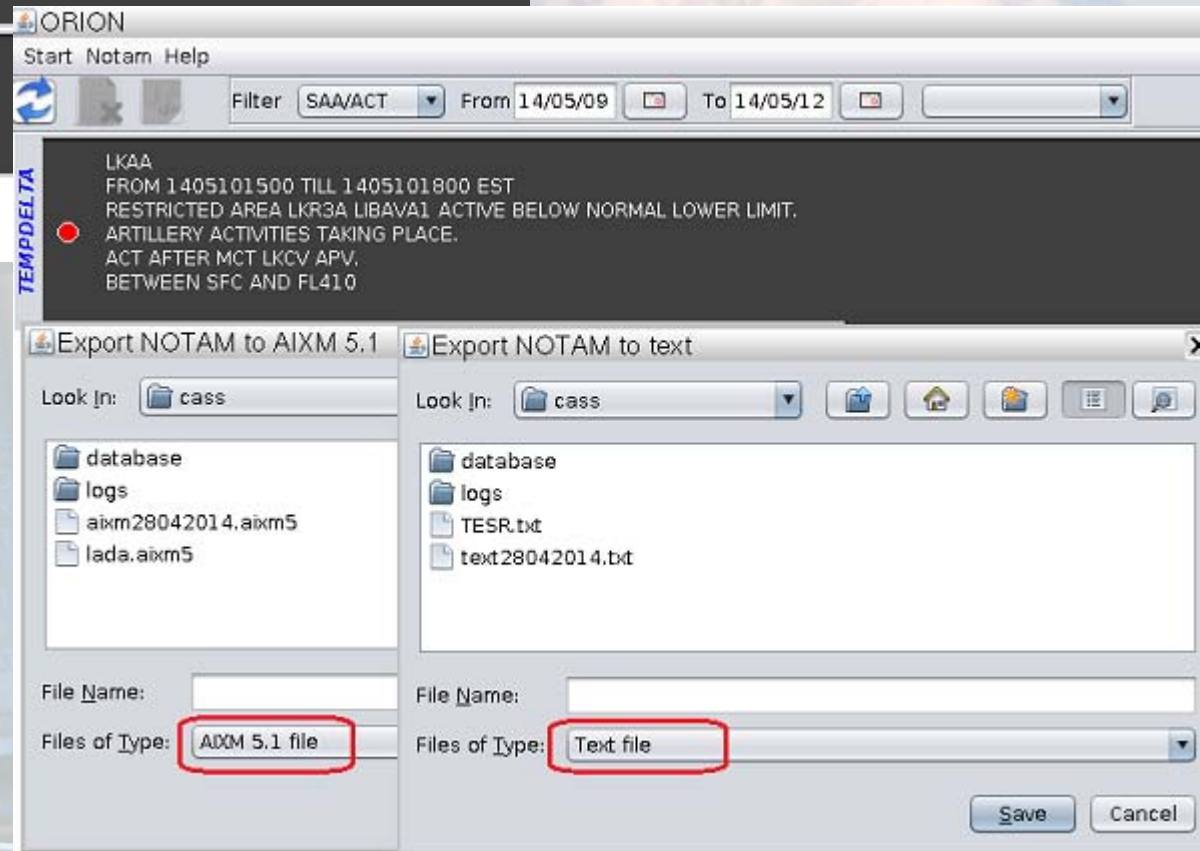


ORION
Start Notam Help

Filter [] From [] To []

TEMPDELTA
LKAA
FROM 1405101500 TILL 1405101800 EST
RESTRICTED AREA LKR3A LIBAVA1 ACTIVE BELOW NORMAL LOWER LIMIT.
ARTILLERY ACTIVITIES TAKING PLACE.
ACT AFTER MCT LKCV APV.
BETWEEN SFC AND FL410

TEMPDELTA
LKKV
FROM 1405101500 TILL 1407101500
CLOSED DCVJSALDVJQVHOPDVH
EXCEPT AS ALTN PPR 15 MINUTES.
SEE SLCJSALDVJLAVJDOV



ORION
Start Notam Help

Filter SAA/ACT From 14/05/09 To 14/05/12

TEMPDELTA
LKAA
FROM 1405101500 TILL 1405101800 EST
RESTRICTED AREA LKR3A LIBAVA1 ACTIVE BELOW NORMAL LOWER LIMIT.
ARTILLERY ACTIVITIES TAKING PLACE.
ACT AFTER MCT LKCV APV.
BETWEEN SFC AND FL410

Export NOTAM to AIXM 5.1

Look In: cass

- database
- logs
- aixm28042014.aixm5
- lada.aixm5

File Name: []

Files of Type: **AIXM 5.1 file**

Export NOTAM to text

Look In: cass

- database
- logs
- TESR.txt
- text28042014.txt

File Name: []

Files of Type: **Text file**

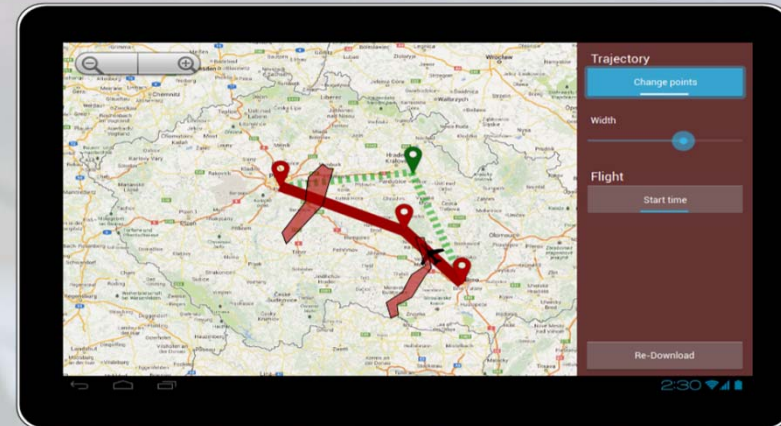
Save Cancel



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VUT

- Visualization of D-NOTAM for mobile devices
- Real cockpit view combined with map source



D-NOTAM project SAA.ACT



Published special activity area activation - [SAA/ACT]

Scenario XML Text

Type R P Designator LKR3B Name LIBAVA2 Activation status ACTIVE Activity type ARTILLERY

Start time 1405131000 End time 1405131700

Lower limit GND

View

2014/06/13

Note

PHONE +42060357822

```

<?xml version="1.0" encoding="null"?>
<message:AIXMBasicMessagegml:id="ID1413350503198"xmlns:aixm="http://www.aixm.aero/schema/5.1"xmlns:event="http://www.aixm.aero/schema/5.1">
  <message:hasMember>
    <aixm:Event>Published special activity area activation - [ SAA/ACT ]
      <gml:ident>abb7ac48-0000-4000-8000-000000000000</gml:ident>
      <gml:ident>LKAA</gml:ident>
      <aixm:intent>FROM 1405131000 TILL 1405131700
        RESTRICTED AREA LKR3B LIBAVA2 ACTIVE ABOVE NORMAL UPPER LIMIT.
        TEMPDELTA ARTILLERY ACTIVITIES TAKING PLACE.
        PHONE +420603578223.
      </aixm:intent>
      <aixm:validity>BETWEEN 0FT AGL AND FL450
      </aixm:validity>
      <gml:TimePeriod>
        <gml:beginTime>2014-05-14T13:10:00Z</gml:beginTime>
        <gml:endTime>2014-05-14T13:05:00Z</gml:endTime>
      </gml:TimePeriod>
      </aixm:validity>
      <aixm:sequenceNumber>1
      </aixm:sequenceNumber>
      <aixm:securityClassification>0
      </aixm:securityClassification>
      <aixm:communicationMedium>DIGITAL
      </aixm:communicationMedium>
      <aixm:scenario>SAA.ACT.1.
      </aixm:scenario>
    </message:hasMember>
  </message:AIXMBasicMessage>
  
```

Finish



D-NOTAM project SAA.NEW



Ad-hoc special activity area creation - [SAA/NEW]

Scenario XML Text

Type W Designator Ad-hoc special activity area creation - [SAA/NEW] Name Actmtv GLIDING

Location Note Scenario XML Text

```
<?xml version="1.0" encoding="null"?>
<message:AIXMBasicMessage xmlns:aixm="http://www.aixm.aero/schema/5.1" xmlns:event="http://www.aixm.aero/schema/5.1/event" xmlns:
<message:Ad-hoc special activity area creation - [ SAA/NEW ]
  <aixm:
    <gml:
      <gml:
        <gml:
          <gml:
            LKAA
            1c24
            FROM 1405160800 TILL 1405161800 EST
          </gml:
            TEMPORARY WARNING AREA
          <ai
            ESTABLISHED FOR GLIDING ACTIVITIES AS FOLLOWS: CIRCLE OF 5NM CENTRED ON 505541N 0142207E
          </ai
            LDG/TKOF OF NON-PARTICIPATING ACFT MAY BE REFUSED.
          </ai
            FROM TO FL95
          </ai
            <gml:
              <gml:
                <gml:
                  <gml:
                    20
                    </gml:
                  </gml:
                </gml:
              </gml:
            </ai
          </ai
            1
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            0
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          <ai
            DIGI
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          <ai
            SAA.I
          </ai
          <ai
            ...
  </message:Ad-hoc special activity area creation - [ SAA/NEW ]
</message:AIXMBasicMessage>
```

Start time 1405160800
CIRCLE OF 5NM CENTRED ON 505541N 0142207E
Excluded airspace
Lower limit GND
Controlling Unit
Note
LDG/TKOF OF NON-PARTICIPATING ACFT MAY BE REFUSED.

Finish

D-NOTAM project OBS.NEW



New obstacle - [OBS/NEW]

Scenario XML Text

Group YES Mobile YES Type CRANE

Description New obstacle - [OBS/NEW]

Scenario XML Text

```
<?xml version="1.0" encoding="null"?>
<mess:
<ai:
  <g:
    6a
  </g:
  <a:
    BA
  </a:
  <a:
    1
  </a:
  <a:
    0
  </a:
  DI
  </DI:
  OB:
  </OB:
  <a:
    0
  </a:
  </ai:
</mess:
</?xml>
```

Airport LKMT

Start time 140

CIRCLE OF 2NM (

Relative Po

Note
DELAY AND L

LKAA
FROM 1405181800 TILL 1407181800 EST
TEMPORARY GROUP OF MOBILE CRANE WARNING: LKMT.
CIRCLE OF 2NM CENTRED ON 494150N 0180632E ELEVATION 350M (HEIGHT 120 M).
LIGHTED. DAY AND NIGHT ICAO MARKING. DELAY AND LOCAL FLYING ACT MAY BE EXPECTED.

Finish

D-NOTAM project NAV.UNS



Navaid unserviceable - [NAV/UNS]

Scenario Navaid unserviceable - [NAV/UNS]

Airport

- LKKB
- LKKU
- LKKV
- LKMT
- LKPD
- LKPR
- LKTB
- LKVO

Operation

Reason

MAINT

Note

DO NO

```
<?xml version="1.0" encoding="null"?>
<message:TYWRasirHessanaml id="701413352613875" xmlns:aixm="http://www.aixm.org/schema/5.1" xmlns:event="http://www.aixm.org/schema/5.1/event">
  <aixm:01
    <gml:id="LKAA"
      7edf09 FROM 1405131436 TILL PERM
    </gml:id>
    VOR/DME VOZ 116.300 MHZ 110X U/S.
    DUE TO MAINT.
    DO NOT USE. FALSE INDICATION POSSIBLE..
  </aixm:01>
  BEGIN
  <aixm:02
    PERM
  </aixm:02>
  <aixm:03
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  </aixm:100>
  </message:TYWRasirHessanaml>
</>
```

11 1013

Finish



Summary

- Digital NOTAM concept is feasible, ... **BUT**
- Simple distribution/selection D-NOTAM
- Standards need to be developed
- Numbering or Qline was not included in our solution, this needs to be solved
- NOTAMR/NOTAMC was not implemented
- Proper and precise DB is essential
- Different management of NOTAM processing from current systems
- Only web service, AFTN is not usable

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Questions

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?



Air Navigation Services
of the Czech Republic



MSC4954
284 -48

DLH1MF
169 422
KOLAD/DH3C
f220 h223 i173 i11 1013

Thank you for your attention

FLIGHT	STATUS	TEMPERATURE
DEPARTED 13:40		
126 COPENHAGEN	LAST CALL	
51 MADRID	GATE OLD	
704		
562 BILLUND	GATE CLOS	
6486 KERKYRA/CORFU	EXPECTED 16:20	
0622 AMSTERDAM	BOARDING	29 °C
3124		
9860 ATLANTA	LAST CALL	28 °C
177 - 178		
0531 LISBON	BOARDING	29 °C
5 0766 ANTALYA	GO TO GATE	41 °C
0 0528 WARSAW	GO TO GATE	30 °C
K 0706 MADRID	GO TO GATE	26 °C
1985		

