

NOTAM Roadmap

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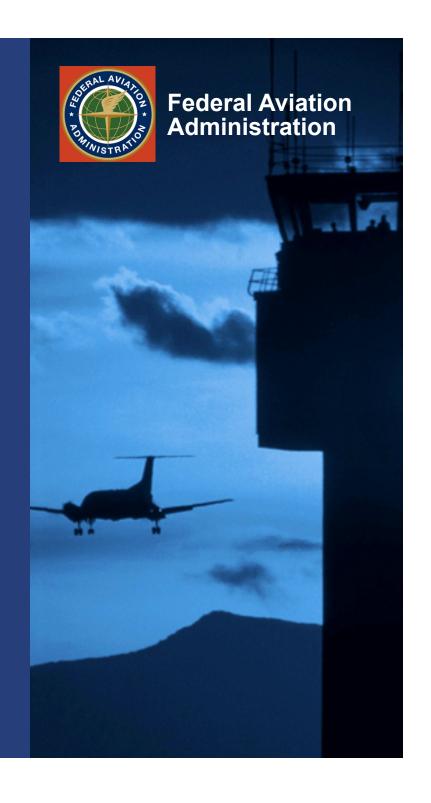
Aeronautical Information Management

System Operations

Air Traffic Organization

Federal Aviation Administration

September 2009



Discussion

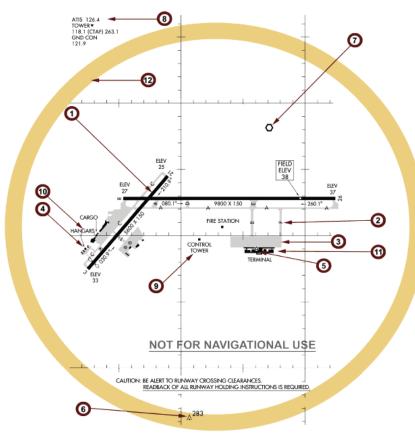
- Concept of Operations
- High Level Roadmap
- FAA Order Timeline
 - International Crossover NOTAMs
- Adoption of ICAO Series
- Digital NOTAMs
 - Capture
 - Automation
 - Distribution

Revised High-level Roadmap

Activity	Date	W.	Desired Result	
Industry Day	May '07	V	Commitment by U.S. Government to modify NOTAM system	
Initial Policy Change	Jan '08		NOTICE: Align D NOTAM criteria with ICAO NOTAM criteria (reclassify civil L NOTAMs)	
Initial USNS Stabilization	June '08	V	Replace USNS hardware	
Federal NOTAM System Version 1 (FNS1)	Spring '10		AIM Modernization Program – Initial operating capabilities. Achieve full ICAO compliance in <u>automation</u>	
ICAO NOTAM Phase 1	August '10		Complete ICAO compliant Q-line for <u>international</u> NOTAMs Align non-Airport international NOTAMs to K series	
ICAO NOTAM Phase 2	August '11 Feb '12		Align NOTAMs to expanded series codes ICAO-compliant domestic NOTAMs??	
Federal NOTAM System Version 2 (FNS2) (Full capability)	2011+		AIM Modernization Program – Full capability Federal NOTAM System (Digital Entry, Digital Distribution, Multiple Sites, Full briefing capabilities, CARF redesign)	

Monday – 28 January 2008 0500 UTC

The "D" NOTAM

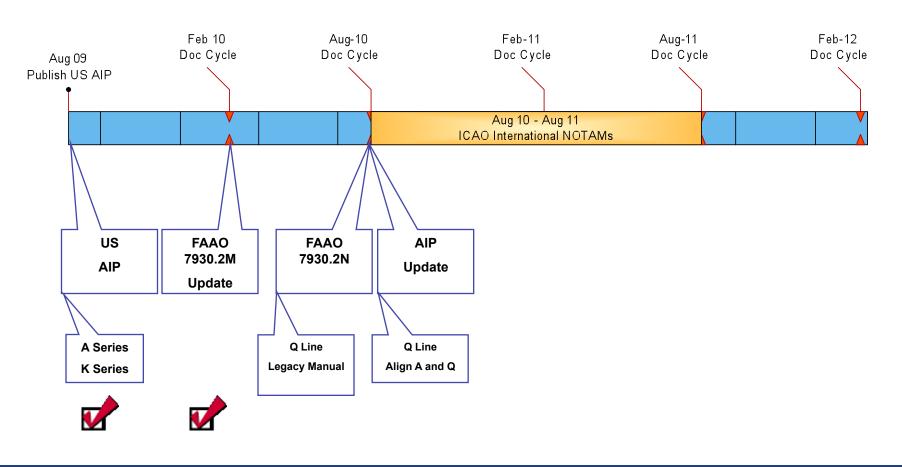


Ceywords	ò	NOTAM Examples		
RWY	1	RWY 3/21 CLSD Runways 3 and 21 are closed to aircraft.		
TWY	2	TWY F LGTS OTS Taxiway F lights are out of service.		
RAMP	3	RAMP TERMINAL EAST SIDE CONSTRUCTION The ramp in front of the east side of the terminal has ongoing construction.		
APRON	4	APRON SW TWY C NEAR HANGARS CLSD The apron near the southwest taxiway C in front of the hangars is closed.		
AD	⑤	AD ABN OTS Aerodrome's airport beacon is out of service		
овѕт	6	OBST TOWER 283 (246 AGL) 2.2 S LGTS OTS (ASR 1065881) TIL 0707272300 Obstruction. The lights are out of service on a tower that is 283 feet above mean sea level (MSL) or 246 feet above ground level (AGL) 2.2 statute miles south of the field. The FCC antenna structure registration (ASR) number is 1065881. The lights will be returned to service 2300 UTC (Coordinated Universal Time) on July 27, 2007.		
NAV	7	NAV VOR OTS Navigation. The VOR located on this airport is out of service.		
сом	8	COM ATIS OTS Communications. The Automatic Terminal Information Service (ATIS) is out of service.		
	9	SVC TWR 1215-0330 MON-FRI/1430-2300 SAT/1600-0100 SUN TIL 0707300100 Service. The control tower has new operating hours, 1215-0330 UTC Monday Thru Friday, 1430-2300 UTC on Saturday, and 1600-0100 UTC on Sunday until 0100 UTC on July 30, 2007.		
svc (1)	100	SVC FUEL UNAVBL TIL 0707291600 Service. All fuel for this airport is unavailable until July 29, 2007 at 1800 UTC.		
	11)	SVC CUSTOMS UNAVBL TIL 0708150800 Service. United States Customs service for this airport will not be available until August 15, 2007 at 0800 UTC.		
AIRSPACE	12	AIRSPACE AIRSHOW ACFT 5000/BLW 5 NMR AIRPORT AVOIDANCE ADZD WEF 0707152000-0707152200 <u>Airspace</u> . There is an airshow being held at this airport with aircraft flying 5000 feet and below within a 5 nautical mile radius. Avoidance is advised from 2000 UTC on July 15, 2007 until 2200 UTC on July 15, 2007.		
NOTE: All "D" NOTAM: Hective: JAN 2006 thru AU		keyword at the beginning of the text of each NOTAM FAAATO AJRAIM #		

FAA Order Timeline

PROPOSED

For Discussion Only



International Crossover Example

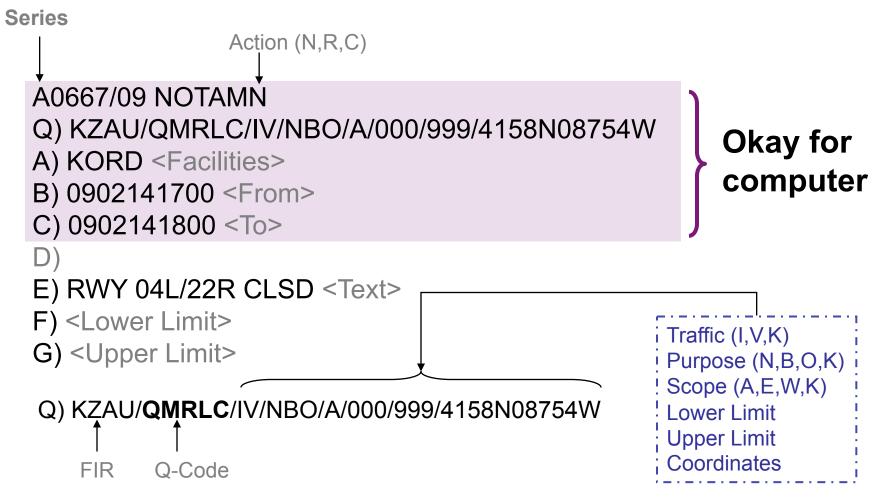
!ORD 02/328 ORD RWY 04L/22R CLSD

A0667/09 NOTAMN

- A) KORD <Facilities>
- B) 0902141700 <From>
- C) 0902141800 <To>
- E) QMRLC RWY 04L/22R CLSD



ICAO NOTAM Example



Legacy Text: KORD RWY 04L/22R CLSD



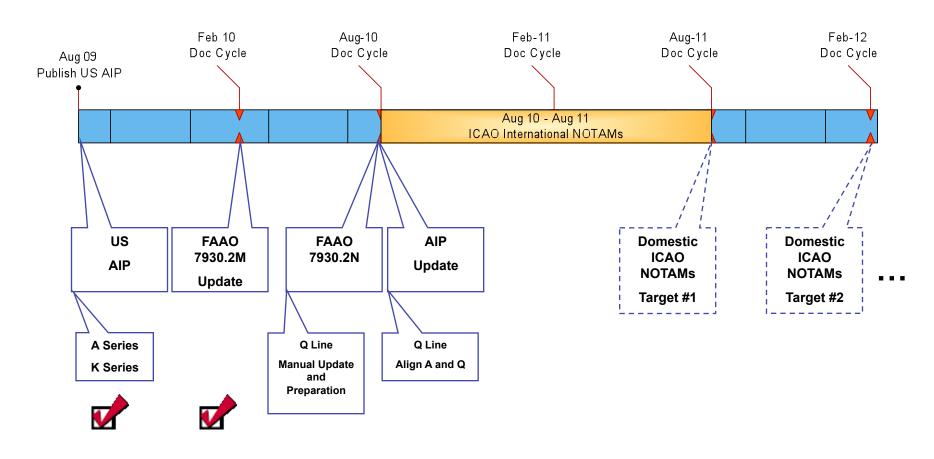
Adoption of ICAO Series

- Review of Timeline
- Series Transition
- ICAO Series DRAFT

FAA Order Timeline

PROPOSED

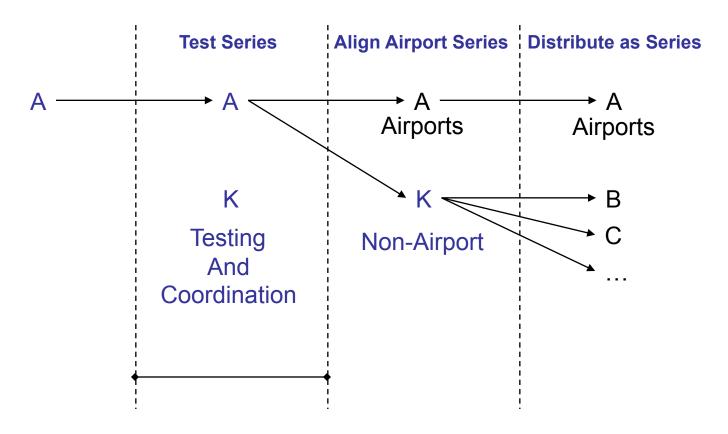
For Discussion Only



Series Transition

PROPOSED

For Discussion Only



K is a transition container

ICAO NOTAM Series/1

- Series A Aerodrome, Movement Area, and Associated Lighting
 - Aerodrome services (Customs, ARFF, RVR)
 - Obstructions within 5 SM of Aerodrome
 - Movement Area; Movement Area Lighting
 - Bird Hazards
- Series C Communication and Surveillance
 - Air to Ground Frequency
 - RADAR Services and Systems
- Series D Airspace Reservations
 - Special Use Airspace
 - MOA
 - TFR

ICAO NOTAM Series/1 Examples

A1070/09 NOTAMN

- Q) KZDC/QMRLC/IV/NBO/A 000/999/3856N772760W
- A) KIAD B) 0910081630 C) 1010082000
- E) RWY 1C/19C CLSD

C1077/09 NOTAMN

- Q) KZDC/QCAAS/IV/NBO/A 000/999/3856N772760W
- A) KIAD B) 0910081800 C) 0911132000
- E) COM ATIS 132.65 OTS

ICAO NOTAM Series/2

PROPOSED

For Discussion Only

- Series E Navigation Warnings
 - Parachute Jumping
 - Laser Light Activity
 - Air Shows
 - Unmanned Aircraft Systems
- Series G GNSS NOTAMs (GPS, WAAS, LAAS)
 - GPS
 - GPS Receiver Autonomous Integrity Monitoring (RAIM)
 - WAAS
 - LAAS

PROPOSED

ICAO NOTAM Series/3

For Discussion Only

- Series H Chart, Publication, and Database Advisories
 - Checklist NOTAM
 - Chart Changes
- Series K Obstruction & Other Aeronautical Advisories
 - Obstructions 5 SM or more from Aerodrome
 - National emergency or security actions
- Series L Domestic Distribution NOTAMs (Reserved)
- Series M Department of Defense
- Series N NAVAID and Landing Systems
 - ILS, MLS, and components

ICAO NOTAM Series/4

PROPOSED

For Discussion Only

- Series P Procedures
 - Flow Control, ADIZ Procedures
 - IAPs, Holding Altitudes
 - STARs, SIDs, DP, Missed Approach Procedures
- Series R Field Conditions (Reserved)
- **Series Y Air Traffic Management Services**
 - ATC Facilities
 - Tower Evacuation, Change in Operating Hours
 - ATC Services
 - ATIS
 - VOI MFT and Wx Service
 - Aeronautical Information
 - NOTAM System

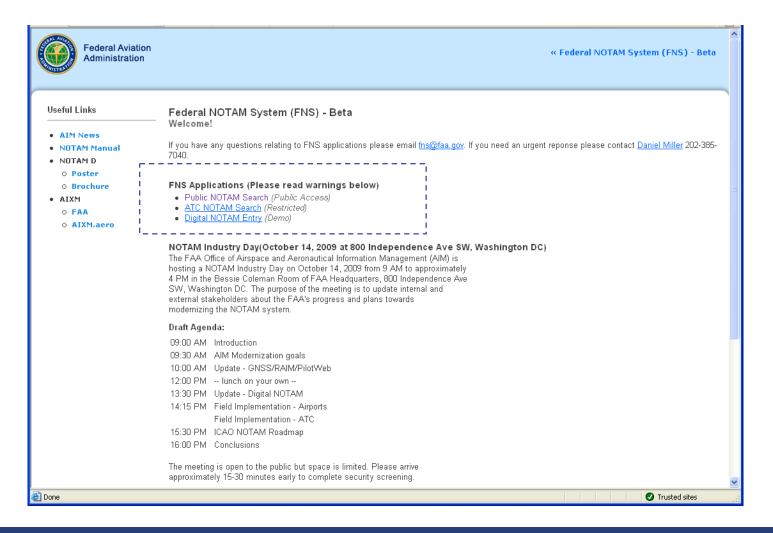
ICAO NOTAM Series/5

PROPOSED

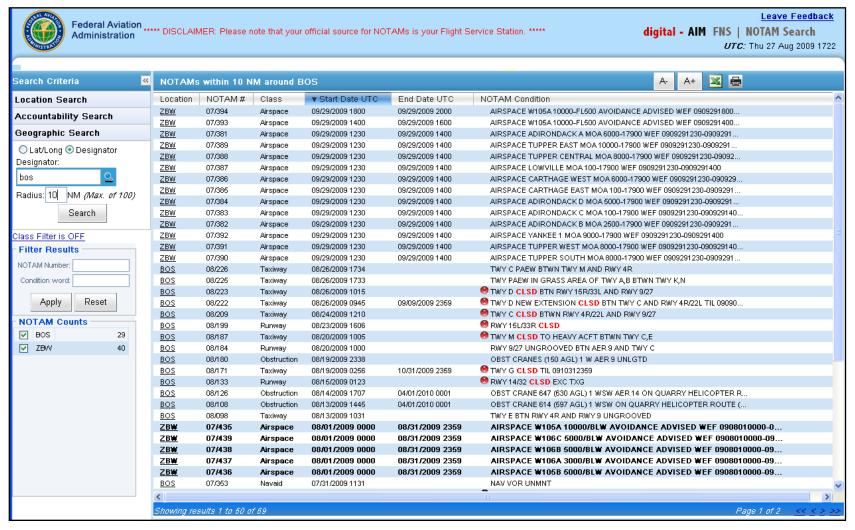
For Discussion Only

- **Series Z Controlled Airspace and ATS Routes**
 - ADIZ Boundaries
 - Oceanic Control Area, Control Zone, Class B, C, D Airspace
 - Published ATS Routes, MEA, MIA, Minimum Crossing Altitudes, **Intersections**

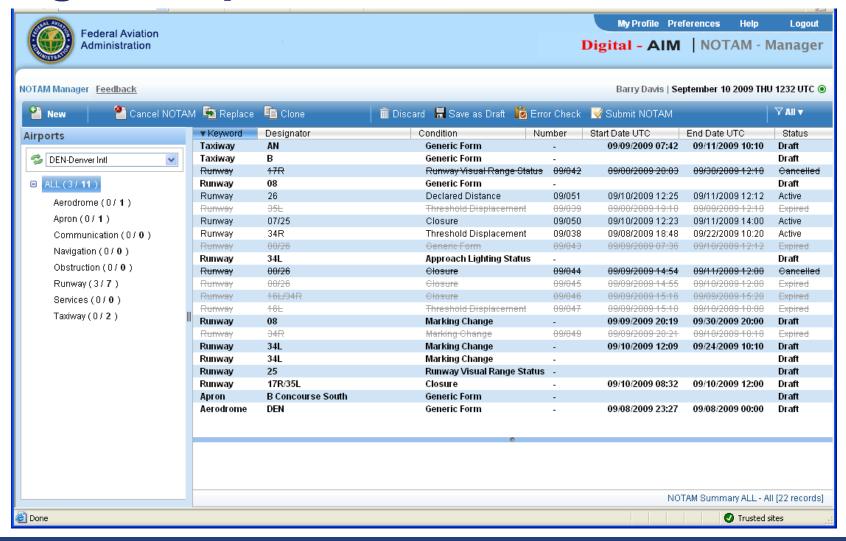
NOTAMS.AIM.FAA.GOV



Public NOTAM Search (External Page)



Digital Capture



Digital Capture Scenarios

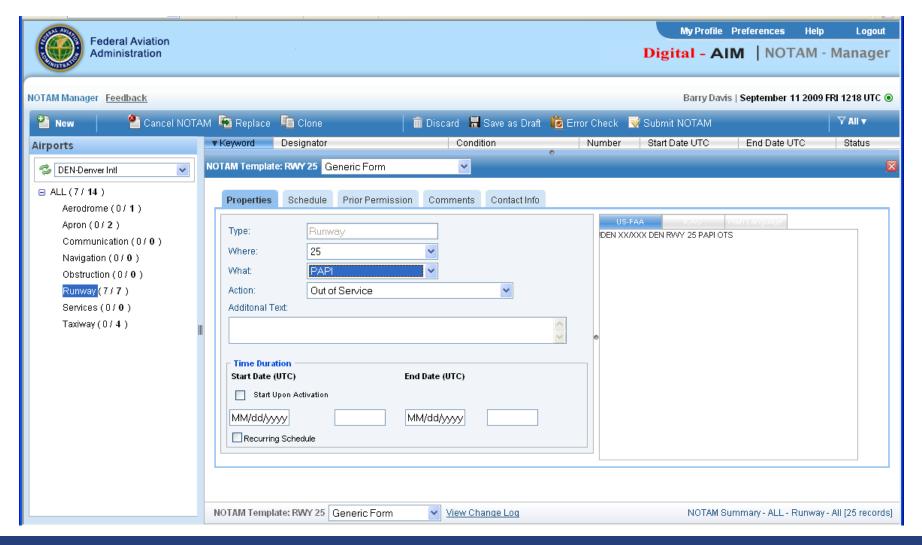
Generic Scenario (Simple)

- AD/RWY/APRON Closure
- Service OTS
- Personnel and Equipment Working (PAEW)
- Birds in the area

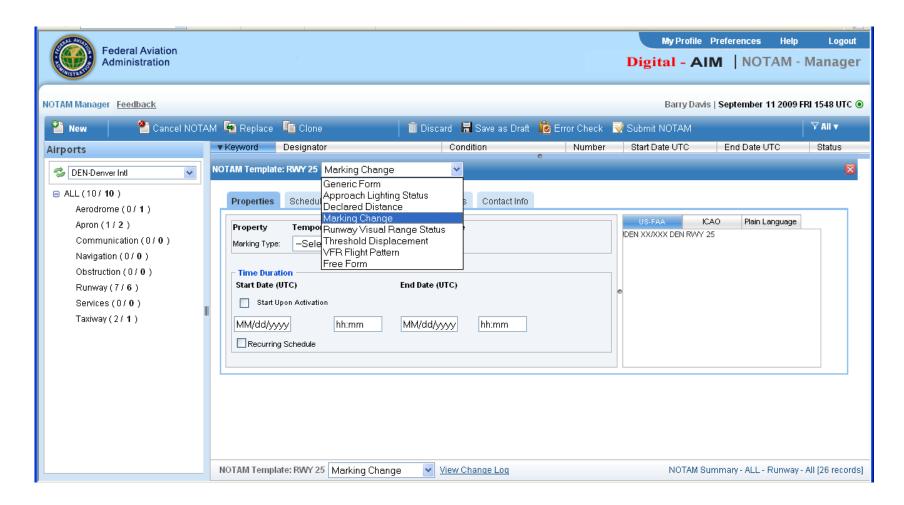
Use Case Scenarios (More Complex)

- Purpose is to capture the complex information digitally
 - PAPI Out of Service (Simple)
 - Field Condition (Very Complex)
- Free Text (Mostly Textual)

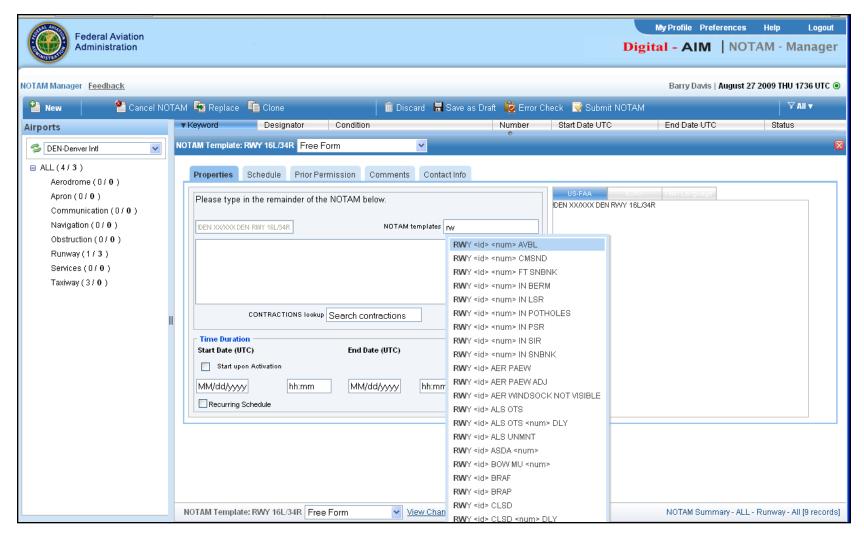
Generic Scenario

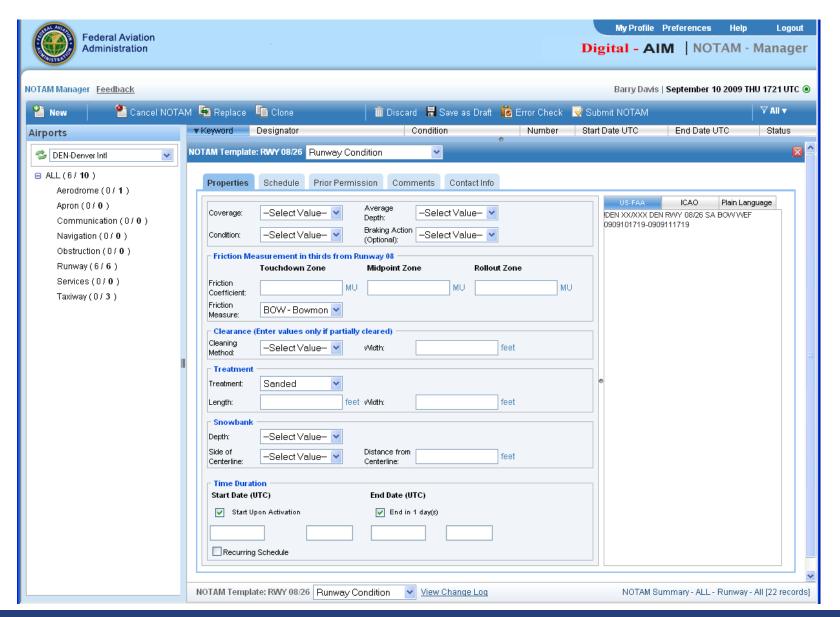


Use Case Scenario



Free-text Scenario





NOTAM Sentence

Or, What are we trying to capture?

- <Class/Type> <element><feature/service> <action/message/change> <reference><exceptions><contact info><start time><end time>
- **Example**
- <Class/Type>
 - D NOTAMs calculated via Keyword
- <element>
 - This is the **where** in the message
 - Runway, Taxiway, Apron,
 - We can derive the where from the selected object
 - <feature/service> (Optional)
 - · Describe what part or service of the element
- <action/message/change>
 - <reference> (Optional, the why)
 - <exceptions> (Optional)
 - <contact info> (Optional)
 - <start time> when
 - <end time>

Distribution

Distribution to ATC Facilities

- As a Data Service
- As a Web Page with System Tray



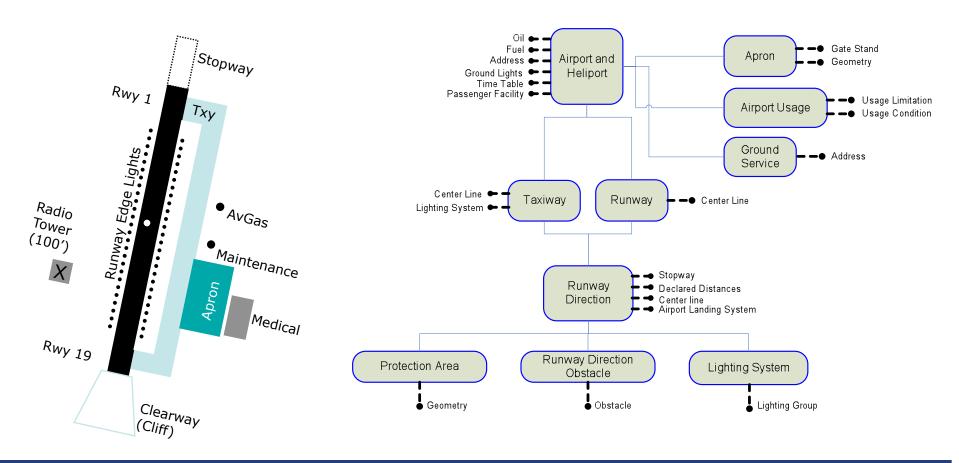
External Distribution

With and without a password



XML Digital Portal

What does Digital mean? Airports and Runways Example



What does Digital look like?

```
<Rwy>
   <RwyUid>
    <AhpUid><codeId>IR15</codeId></AhpUid>
     <txtDesig>Runway</txtDesig></RwyUid>
   <valLen>7000</valLen>
   <valWid>500</valWid>
   <uomDimRwy>FT</uomDimRwy>
   <codeComposition>ASPH</codeComposition>
   <codeCondSfc>GOOD</codeCondSfc>
  </Rwy>
  <Rcp>
   <RcpUid>
    <RwyUid>
      <AhpUid><codeId>IR15</codeId></AhpUid>
      <txtDesig>Runway</txtDesig></RwyUid>
     <geoLat>15.85N</geoLat>
     <geoLong>59.00E</geoLong>
   </RcpUid>
   <codeDatum>WGE</codeDatum>
  </Rcp>
XML
```

The Digital Goal

- Sort Order the data
- Filter Geographic, temporal, or logical extract
- Transpose Convert data to graphic
- Alert Evaluate the data and take action
- Fuse Ability to <u>merge</u> multiple datasets

Concept of Operations

Distribution to customers

Common Themes

Baseline

Static

Data

Temporary

Update

(NOTAM)

Identification and Operation [What]
Period of Validity [When]
Geometry [Where]

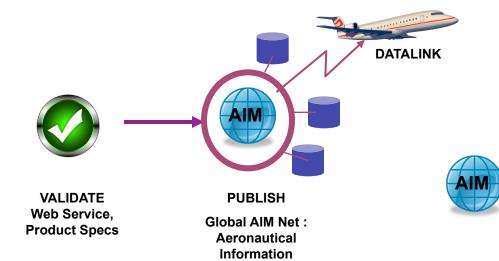
And Metadata

ΑI

Database

Change

Change



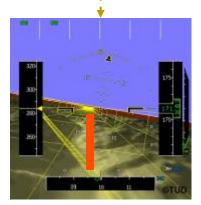
Transactions

Validate and Publish by FAA

Integrated permanent and temporary information
Computer readable
Electronic distribution to customers



- Filter, Query and Sort
- Map and Display



Thank You for your support!



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