



**Department of
Defense**



**Federal Aviation
Administration**

NOTAM Briefing Overview

By: Gary Bobik

Date: May 2008

Overall Goals

- **Improve the quality of NOTAMs**
 - Provide meaningful information
 - Enhance NOTAM interpretation
 - Graphical depiction necessary
 - Improve reliability and accessibility
 - Digital data exchange will enhance filtering and sorting
- **Provide a single source for all NOTAMs**
 - One collection and distribution point for all information
 - Consolidate inefficient legacy systems for improved customer service
- **Conform to ICAO standards**
- **Balance diverse customer needs**
 - Airlines, ATC, General Aviation, International, Military
- **Complete Digital Capture and Delivery**
 - Enable automated fusion of published and dynamic (NOTAM) data



Modernization Roadmap

Activity	Date		Outcome
Industry Day	May '07		Commitment by U.S. Government to Modify NOTAM System
User Outreach	Sept '07 ...		User Testing and Customer Outreach
Initial Policy Change	Jan '08		NOTICE: Align D NOTAM criteria with ICAO NOTAM criteria (reclassify civil L NOTAMs)
Additional Cleanup Digital NOTAMs	2008		Cleanup Policy and Handbooks Digital Capture
Federal NOTAM System	2009		One Federal NOTAM System (FNS) with Full ICAO Implementation 
System Enhancements	2010+		Full Digital NOTAM using International standards



Initial Policy Change

- **Expand definition of a Distant (D) NOTAM**
 - Adopt ICAO definition for aerodrome movement area
 - Includes taxiways, ramps, aprons, lighting
 - All D NOTAMs will be prefaced with a keyword
 - Label unverified reports of hazards
 - Information that meets NOTAM criteria but is unverified will be tagged with (U) and disseminated as D NOTAM
 - Applicable only where letters of agreement exist
 - Label other information that doesn't meet ICAO criteria
 - Other information that may impact aircraft operations will be tagged with (O) and disseminated as D NOTAM



Effects of policy change

- **Reclassify civil Local NOTAMs**
 - All current local civil NOTAMs become D NOTAMs
- **Create keywords for all D NOTAMs for improved sorting and parsing**
 - AD AIRSPACE APRON COM
 - NAV OBST (O) RAMP
 - RWY SVC TWY (U)
- **Enables central distribution for all NOTAMs**
- **Standardize NOTAM policy and QA**



Examples

The "D" NOTAM

Keywords	NOTAM Examples
RWY	① RWY 30L CLSD ② Runway 3 and 21 are closed to aircraft.
TWY	③ TWY F LIGHTS OTS ④ Taxiway F lights are out of service.
RAMP	⑤ RAMP TERMINAL EAST SIDE CONSTRUCTION ⑥ The ramp in front of the east side of the terminal has ongoing construction.
APRON	⑦ APRON SW TWY C NEAR HANGARS CLSD ⑧ The apron near the southwest hangar C in front of the hangars is closed.
AD	⑨ AD AIRN OTS ⑩ Airservices airport beacon is out of service.
OBST	⑪ OBST TOWER 203 (246 AGL) 2.2 S LIGHTS (ASR 1000881) TL UNSTRTNG ⑫ The lights are out of service on a tower that is 203 feet above mean sea level (MSL) or 346 feet above ground level (AGL) 2.2 statute miles east of the field. The FCC antenna structure registration (ASR) number is 1000881. The lights will be returned to service 2200 UTC (Coordinated Universal Time) on July 27, 2007.
NAV	⑬ NAV VOR OTS ⑭ Navigation: The VOR located on this airport is out of service.
COM	⑮ COM ATIS OTS ⑯ Communications: The Automatic Terminal Information Service (ATIS) is out of service.
SVC	⑰ SVC TWR 1215-0330 MON-FRI 1400-2300 SAT/SUN 0600-0900 TIL 07/20/07 ⑱ Special: The control tower has new operating hours. It is operating Monday through Friday, 1400-2300 UTC on Saturdays, and 0600-0900 UTC on Sunday until 0100 UTC on July 30, 2007. ⑲ SVC FUEL UNAVBL TIL 07/29/07 ⑳ Special: Fuel for this airport is unavailable until July 29, 2007 at 1600 UTC. ㉑ SVC CUSTOMER UNAVBL TIL 07/16/07 ㉒ Special: United States Customs service for this airport will not be available until August 15, 2007 at 0800 UTC. ㉓ AIRSPACE AIRBORNE ACFT SEVERE IN WIND AIRPORT AVOIDANCE ACFT WEP 07152000-07152008 ㉔ Obstacle: There is an airborne being held at the airport with altitude 5000 feet and below within a 5 nautical mile radius. Avoidance is required from 2000 UTC on July 15, 2007 until 2200 UTC on July 15, 2007.
AIRSPACE	⑲ AIRSPACE AIRBORNE ACFT SEVERE IN WIND AIRPORT AVOIDANCE ACFT WEP 07152000-07152008 ㉔ Obstacle: There is an airborne being held at the airport with altitude 5000 feet and below within a 5 nautical mile radius. Avoidance is required from 2000 UTC on July 15, 2007 until 2200 UTC on July 15, 2007.

NOTE: All "D" NOTAMs will have a keyword at the beginning of the text of each NOTAM.
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- **Runway condition**
 - !MIV 05/123 MIV RWY 10/28 CLSD 0709021200-0709021600
- **Taxiway status**
 - !RDU 05/123 RDU TWY A CLSD BTWN A1, A2 TIL 0709011600
- **Ramp status**
 - !MEM 05/123 MEM RAMP PAEW FEDEX CARGO EAST
- **Other status information**
 - !LOU 05/123 LOZ (O) CONTROLLED BURN 6.5SM NORTH TIL 0708302200

↑
First word in the text area



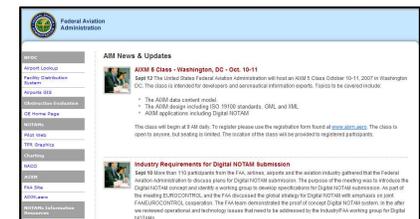
Implementation Activities

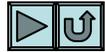
- **NOTAM Realignment Working Group (NRWG)**
 - Stakeholder representatives from AIM, DoD, Flight Service, and USNOF
 - Reviewing/modifying NOTAM Handbook
 - Creating NOTICE for coordination and dissemination
- **Safety Risk Management Panel**
 - Includes members from AFS, AOPA, ARP, ATA, AVN, Continental Airlines, DoD, En Route Service Unit, NBAA, Northwest Airlines, Sys Ops Service Unit, Tech Ops Service Unit, Terminal Service Unit, US Airways
 - Aeronautical Information and Flight Service Station staff
 - Reviewing proposed changes to policy proposed by NRWG
 - Identifying hazards and potential mitigations
- **Town Hall Meetings**
- **User Outreach!!!!**
 - Domestic (including Dispatchers)
 - Military
 - International (IATA, Canada)
- **Help from our Partners**



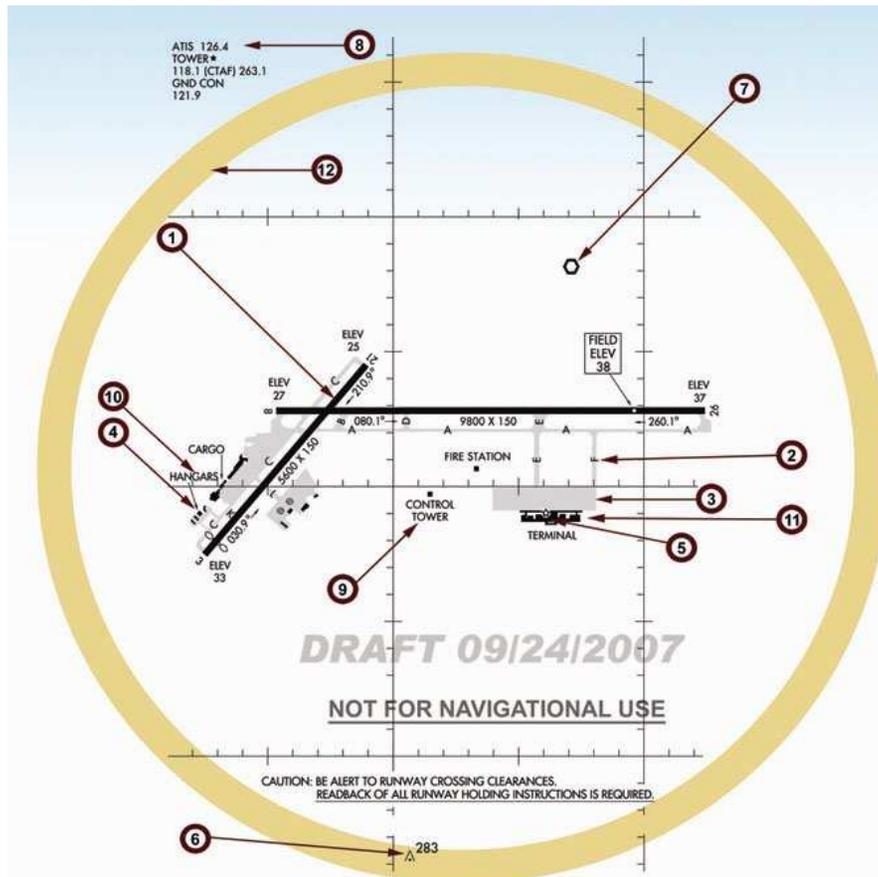
Stakeholder Comments

- Users like the outreach...They want more.
- They are happy we are talking to the dispatcher community.
- They are happy there is an external test planned.
 - Internal systems already tested
- Today NOTAMs create more questions than answers
- Users believe in the concept of Digital NOTAMs
- Dispatchers would like us to address airport (surface) conditions
- Users would like a FAQ put on our site
 - In process





Monday – 28 January 2008 0500 UTC



The "D" NOTAM

Keywords	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.
OBST	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.
COM	8 COM ATIS OTS Communications. The Automatic Terminal Information Service (ATIS) is out of service.
SVC	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. 10 SVC FUEL UNAVBL TIL 0707291600 Service. All fuel for this airport is unavailable until July 29, 2007 at 1600 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 Airspace. 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" NOTAMs will have a keyword at the beginning of the text of each NOTAM.
Effective: DEC 07 thru AUG 09
FAA NOTAM ABN 071207



Modernization Roadmap

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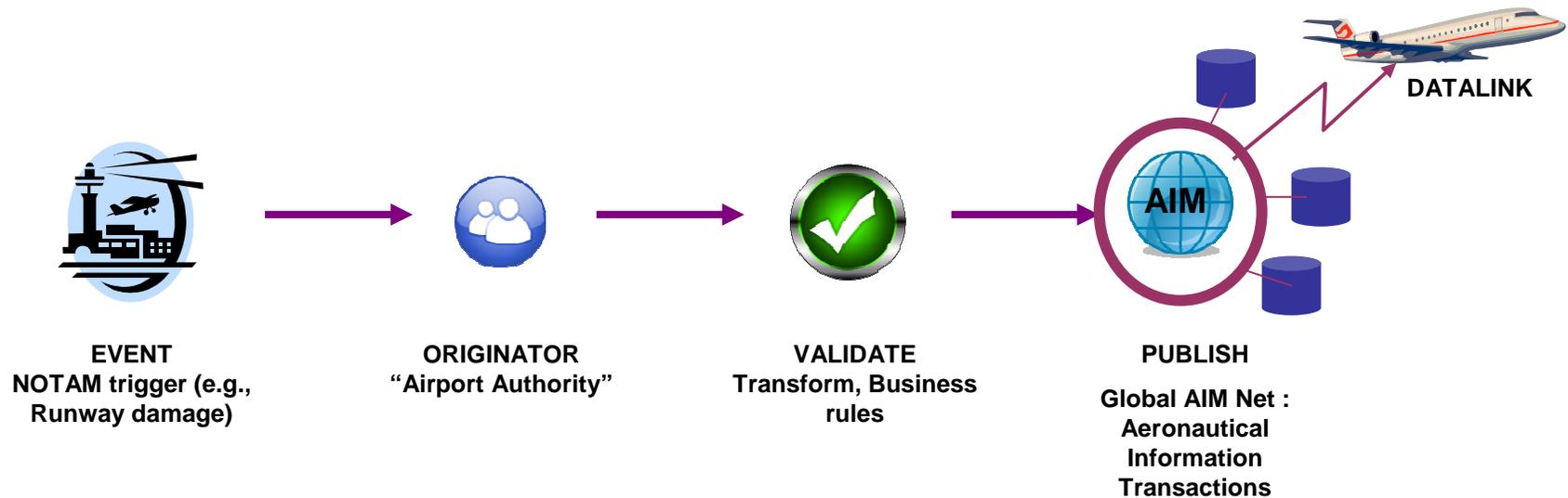


Digital NOTAMs

- **Digital Capture**
 - NOTAMs Today
 - Digital NOTAMs Concept of Operations
 - NOTAM Origination
 - NOTAM Delivery to Customers
- **Convert Messages to Digital Packets**
 - A Common Aeronautical Model



Digital NOTAM: Concept of Operations



Originate NOTAMs at the Source

Data integrity
Traceability
Encode digitally

Validate and Publish by FAA

Integrated permanent and temporary information
Computer readable
Electronic distribution to customers

Event Manager - Windows Internet Explorer
 http://localhost:49323/POC4/eventManager2.aspx

Federal Aviation Administration
 Bringing Safety to America's Skies

Digital-NOTAM | Event-Manager

Home Event Manager Preferences Contact Us Logout user: John Doe | role: Event Admin | UTC: 12:33:30

Airport
 Honolulu Intl (HNL)

Event Summary
 + Create new Event for Runway 12/30

Feature	Designator	Type	Number	StartDate	EndDate	Status
Runway	12/30	Status Change	11/234	1/1/2008	2/1/2008	Active
Runway	12/30	Threshold Displacement	10/223	1/1/2008	2/1/2008	Active
Runway	12/30	Partial Closure		1/1/2008	2/1/2008	In Construction

Event Editor
 Feature: Runway 19/27 Event (Changes to): Usage [AIXM 5 XML]

Save Draft Cancel Draft Activate Event

Properties Prior Permission Reason/Warning

PROPERTY Runway Status TEMPORARY VALUE -choose a value-

+ Add Exception/Restriction
 - Restriction: JET
 - Restriction: MIL

Usage
 -choose an event-
 Usage
 Declared Distance
 Threshold
 Surface Characteristics
 Arresting Gear
 Dimension
 Other (Freeform)

US ICAO Plain Language

! IAD XX/XXX IAD Rwy 17R/35L CLSD
 WEF 0704061400-0704062200

Issue Date: April 05, 2007 11:23 (UTC)
 Acc facility: IAD
 Created by: John Doe
 Job Title: Airport Manager
 Contact: jdoe@hello.com (Email) 122.8 (Radio) 703-222-2222 (Phone)

Error on page. Internet | Protected Mode: Off 100%

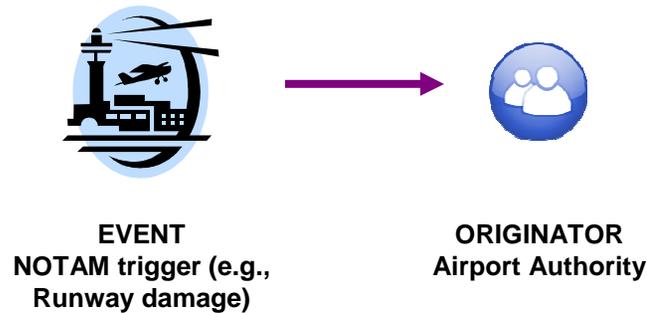
Aeronautical Information Management

NOTAM Briefing



Concept of Operations

NOTAM Origination



Originate NOTAMs at
the Source

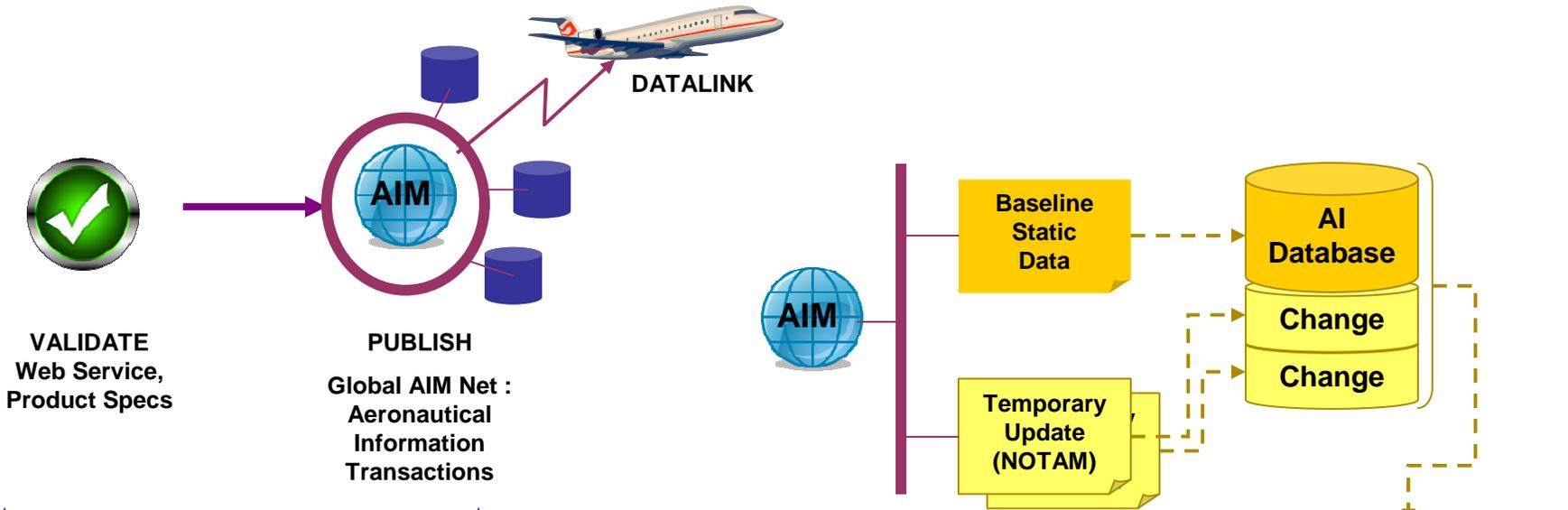
Data integrity
Traceability
Encode digitally

Runway	
Runway:	17R/35L
Runway Operation Status:	Closed
Marking:	
Modify Runway Length:	
	ft from Runway direction

- Eliminate free form text
- Pre-populated data entry screens
- Direct submission to USNS without manual intervention
- Tracking data for NOTAM
 - Creator
 - For more information ...
- Chain of Custody through data chain

Concept of Operations

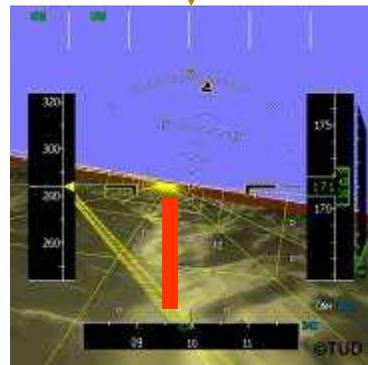
Distribution to customers



Validate and Publish by FAA

Integrated permanent and temporary information
Computer readable
Electronic distribution to customers

- **Consistent static and dynamic data**
- **Filter, Query and Sort**
- **Map and Display**



Modernization Roadmap

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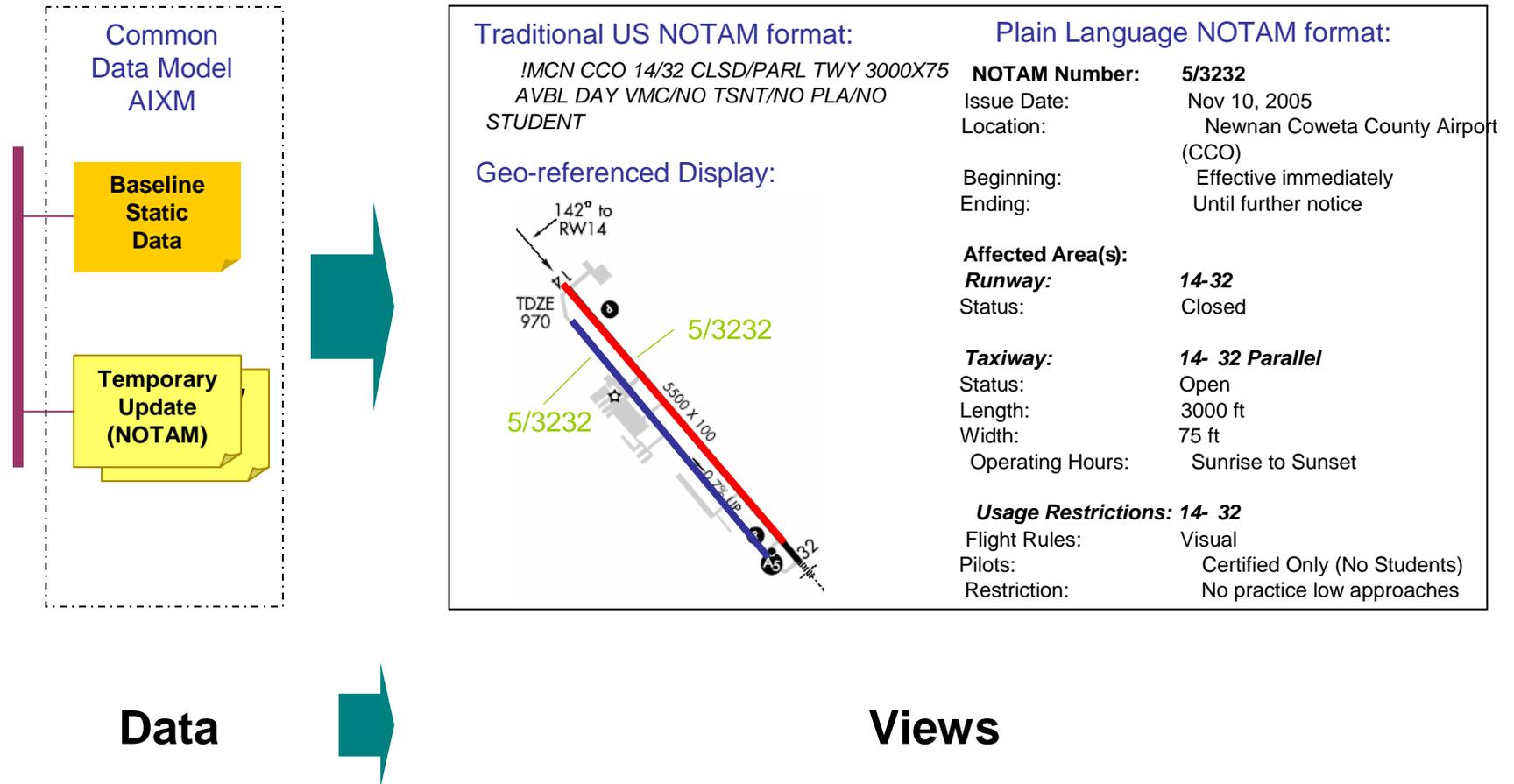
Single Federal System

- **Begin federal system consolidation 2008**
 - Joint development to compress Civil and Military systems and database into a single baseline
 - Extend system capabilities
 - ICAO Standardization
 - Goal: Single Federal system with full ICAO implementation by Late 2009
- **Multiple Views of shared data**
- **Based on a Common International Model**



Legacy verses ICAO

Computer can create any output from data



A common aeronautical data model



AI Common Themes

Identification and Operation [What]

Period of Validity [When]

Geometry [Where]

And Metadata

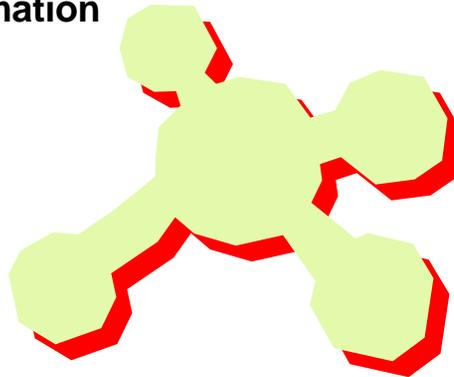
NOTAM

Temporary change to
aeronautical information

SNOWTAM, ASHTAM

Temporary change to airspace
and surface conditions

Military Airspace
Temporary activation of
refueling and military operating
areas



Route Availability / Traffic Restriction

Temporal restriction on traffic flows and
routing

AIM – Aeronautical Information Management

Aeronautical Information Management

NOTAM Briefing



Summary

- **NOTAM Realignment**
 - Policy Change effective January 28, 2008 (Monday)
 - Customer Outreach
- **Overall Goals**
 - Digital Capture
 - Chain of Custody through NOTAM life cycle
 - For more information.....and attachments
- **Automation**
 - Single Federal System in late 2009
 - Digital NOTAMs
 - Tower Lights
 - Nav Outages
 - Direct Airport Authority entry
 - Legacy and ICAO
- **Opportunities**
 - Assured Delivery to Facilities
 - Runway Conditions and Military Airspace Management



Thank You !

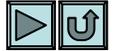
For more information

Gary.bobik@faa.gov

202-493-1407

Nfdc.faa.gov/aimnews





Airfield Conditions Reporting

- **What is the requirement?**
 - Code of Federal Regulations (CFR), Title 14 Aeronautics and Space, Federal Aviation Administration, Department of Transportation
 - 14 CFR Part 139, Section 339, Airport condition reporting
 - This section addresses the collection and dissemination of airport condition reporting to air carriers
 - To comply with this section, the CFR states that the NOTAM system is to be used as appropriate, along with other systems and procedures.
 - Indicates what information or airport conditions are to be reported or affect the safe operations of air carriers.
- **Who is responsible?**
 - The airport operators are responsible for informing all applicable stakeholders
- **What methods are being used to disseminate this information?**
 - United States NOTAM System (USNS)
 - Airport Web pages
 - Auto updates
 - Electronic direct distribution to airport stakeholders



Example of a commercial Airport Operations “dashboard”



REFRESH
PRINT

Airport Status

IAD Airport is Open

Departure allocation program is not in effect Managed By: N/A

Operations Duty Manager: LIERCKE/MADIX/GOSNELL
Phone: 703.572.2730

Runways (Green=Open Red=Closed)

01L	Open		19R	Arr	
01R	Open		19L	Dep	
12	Open		30	Open	

Taxiways / Intersections / Throats

Updated at 01Oct 0942Z
RWY 19L HOLD BLOCK CLSD UFN

TWY J BTWN TXL E & F WINGSPAN
RESTRICTED TO 117' OR LESS UFN

TWY J1 NON-STANDARD PAINT MARKINGS
- UFN

Open-Runway Information

<p>01L</p> <table style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr><td>Avail. Length</td><td>11,500'</td></tr> <tr><td>Surface Cond.</td><td></td></tr> <tr><td colspan="2" style="border-top: 1px solid black;"></td></tr> <tr><td></td><td style="text-align: center;">TD MP RO</td></tr> <tr><td>Latest MU</td><td style="text-align: center;">0 0 0</td></tr> <tr><td>Taken at</td><td></td></tr> </table>	Avail. Length	11,500'	Surface Cond.					TD MP RO	Latest MU	0 0 0	Taken at		<p>19R</p> <table style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr><td>Avail. Length</td><td>11,500'</td></tr> <tr><td>Surface Cond.</td><td></td></tr> <tr><td colspan="2" style="border-top: 1px solid black;"></td></tr> <tr><td></td><td style="text-align: center;">TD MP RO</td></tr> <tr><td>Latest MU</td><td style="text-align: center;">0 0 0</td></tr> <tr><td>Taken at</td><td></td></tr> </table>	Avail. Length	11,500'	Surface Cond.					TD MP RO	Latest MU	0 0 0	Taken at	
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Equipment Status (Irregularities Only)

Updated at 01Oct 0942Z
Baggage Conveyor belts servicing Kiosk 1 is out of service and will continue for approx 30 days. Question/Problems should be directed to Frank Lunking 703-572-1149.

Gates R-3, R-5, R-7, R-9 and R-13 fuel hydrant pumps unavail. Fueling by fuel trucks currently method of fuel uplift.

Snow Removal Strategy

Deicing Operations

NOTAMS

Updated at 01Oct 0942Z
TWY J1 EAST OF TWY J WINGSPAN
RESTRICTED TO GROUP III 117' OR LESS -

Aeronautical Information Management

NOTAM Briefing

23



Messages to Digital Packets

Traditional Text

FDC 0/0000 ZAB NEWMEXICO. . FLIGHT
RESTRICTION ROSWELL, NEWMEXICO.
PURSUANT TO

RESTRICTIONS ARE IN EFFECT DUE TO A
HIGH SPEED

Message

Runway

Runway: 17R/35L

Runway Operation Status: Closed

Marking:

Modify Runway Length:

ft from Runway direction

Digital (AIXM) XML

```

<NotUId>
<txtNameAcctFac>FDC</txtNameAcctFac>
<dateIndexYear />
<noSeqNo />
<dateIssued>1/1/0001</dateIssued>
<txtLocalName>BRETT TEST</txtLocalName>
...
</NotUId>
<codeTimeZone>UTC</codeTimeZone>
<txtDescrPurpose>
HIGH SPEED CHASE
</txtDescrPurpose>
...

```

Digital Packet

Traditional Text

FDC 0/0000 ZAB NEWMEXICO. . FLIGHT
RESTRICTION ROSWELL, NEWMEXICO.
PURSUANT TO

RESTRICTIONS ARE IN EFFECT DUE TO A
HIGH SPEED

Web Text

State New Mexico

Affected Location

Beginning Date

Ending Date

TFR Hours

Affected Operations

Reason for NOTAM

Type

...





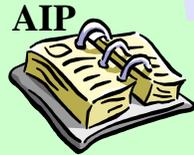
Global change: AIS to AIM

Managing Product

Classical AIS

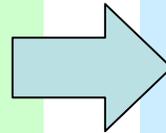
- publish documents

AIP



Document content and format is described by:

- ICAO Annex 15, Appendix 1 – AIP Content
- ICAO Annex 15, Appendix 6 – NOTAM format
- ...



AIM System

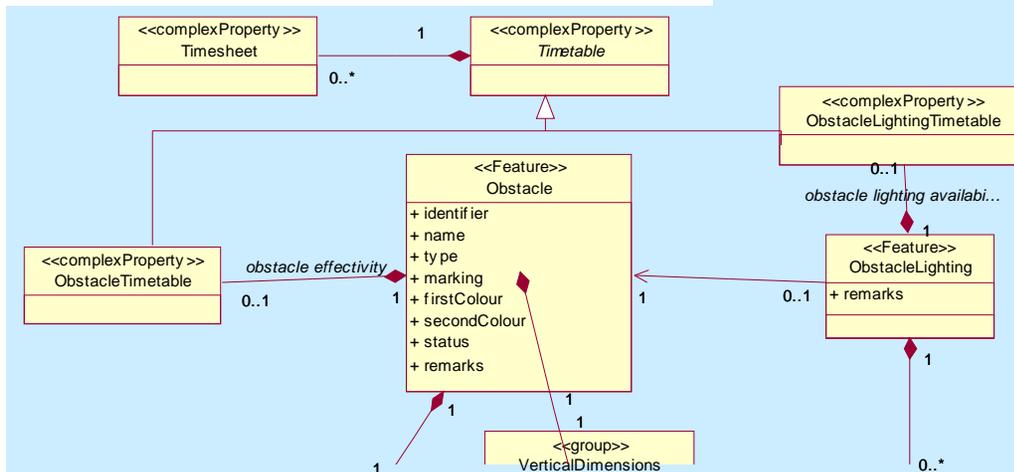
- manage data



Data managed in the system is described by models:

- Aeronautical Information Exchange Model (AIXM)
- AIXM Conceptual Model (AICM)
- Electronic AIP (eAIP) – on-line presentation format

Managing Data



Specifications

- Content
- Quality
- Metadata

EuroControl Slide

Aeronautical Information Management

NOTAM Briefing

