

# Aeronautical Information Management NOTAM Industry Day

## Modernization Strategy

By: Aeronautical Information Management  
System Operations

Date: November 2008

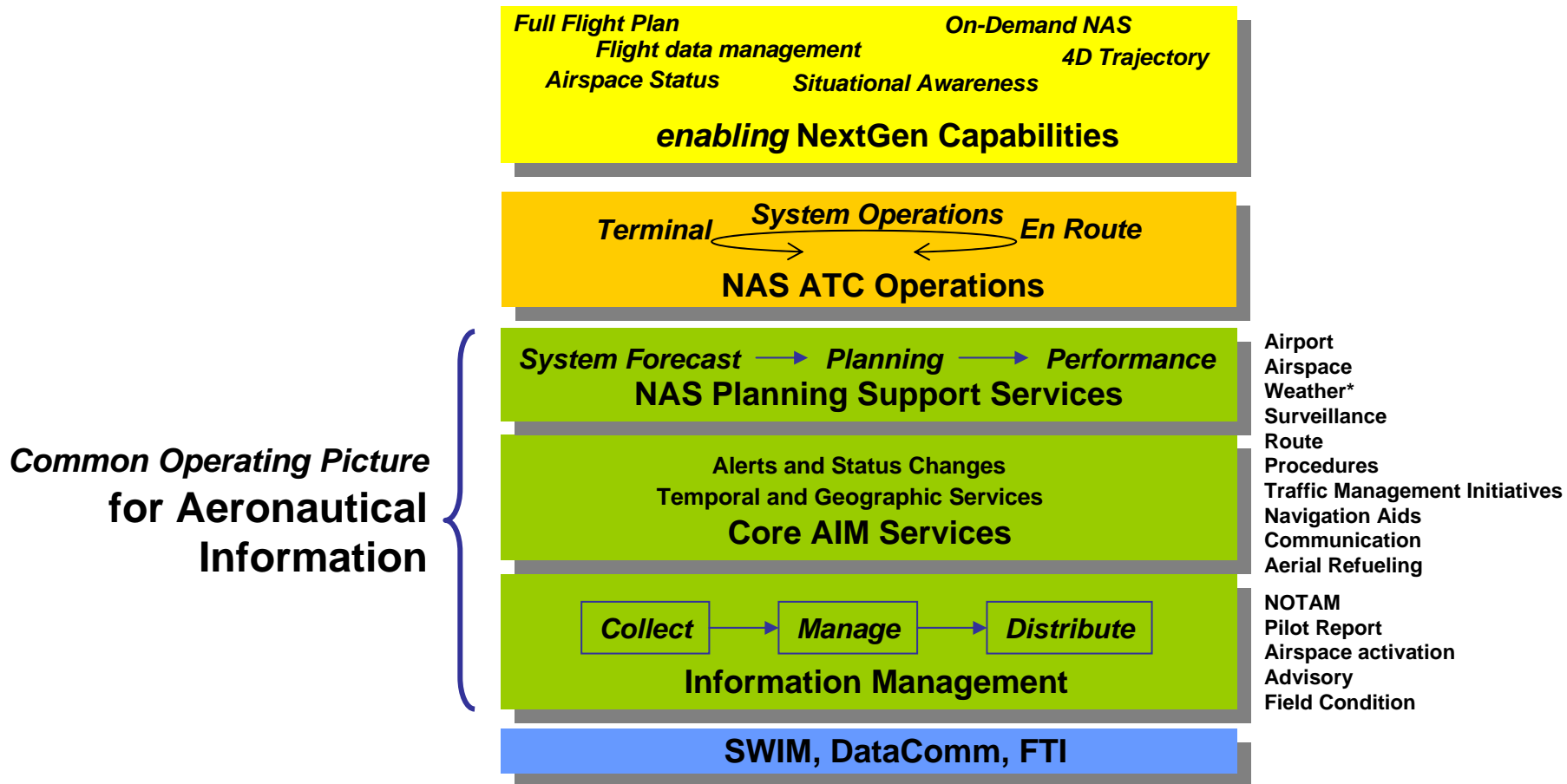


Federal Aviation  
Administration



# The AIM Modernization Concept

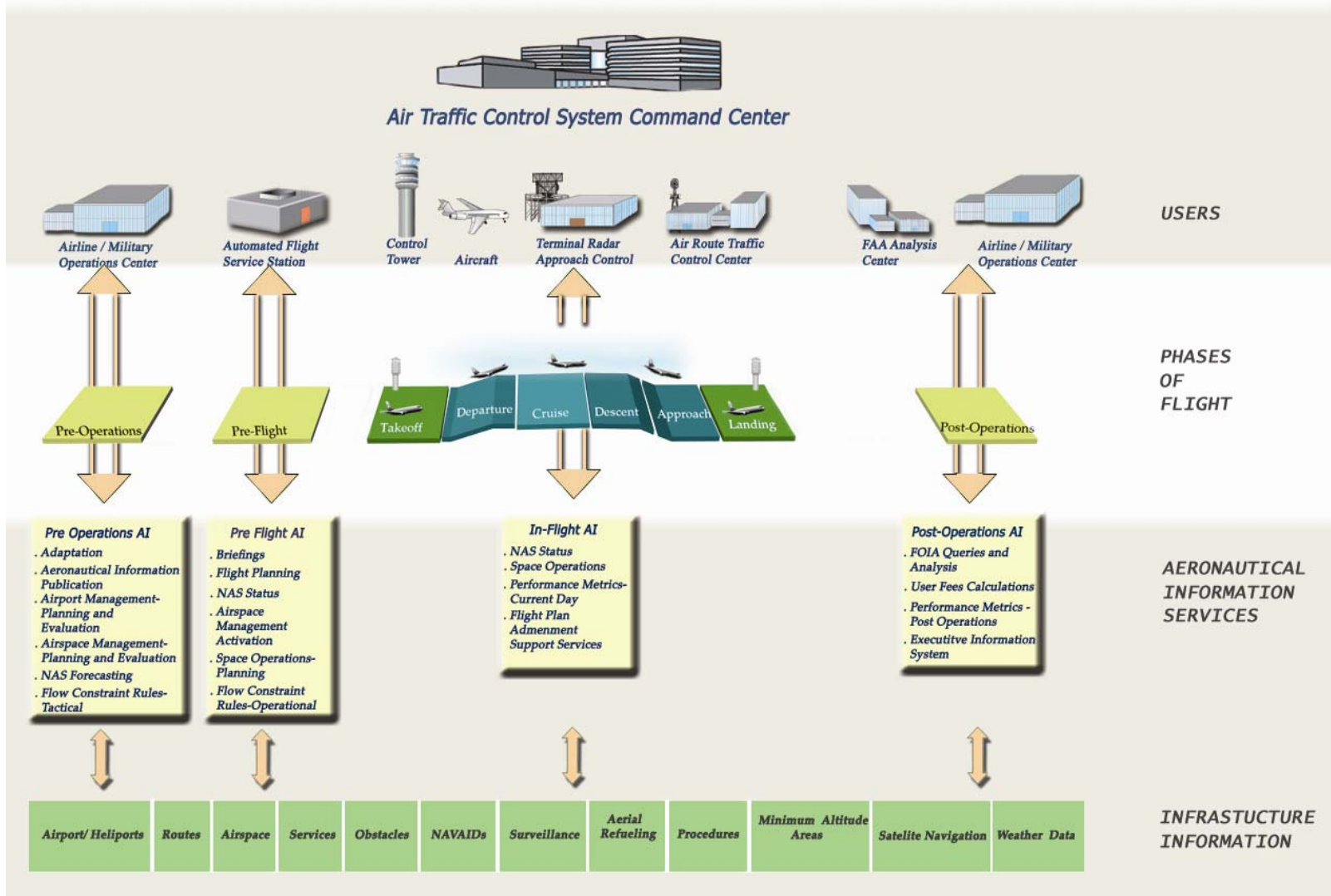
Provide a 'one stop shop' for the aeronautical information services necessary for flight operations



\* Requirement to be validated and/or reallocated



# Supporting all phases of flight



# Shortfalls addressed

- **Low reliability for a mission-essential system**
  - Documented system failures
  - Security vulnerabilities like no executable disaster plans
- **High operating costs**
  - Convoluted and stove-piped system architecture – “Accidental Architecture”
    - Many point-to-point system interfaces
  - Hardware and software at or beyond End of Service Life (EOSL)
- **Services do not meet customer needs**
  - Demand for digital information (Digital, Graphical NOTAM)
  - Plain language
  - Improve quality of service
  - Ensure service delivery to customers
  - Foundation for advanced flight planning and trajectory analysis



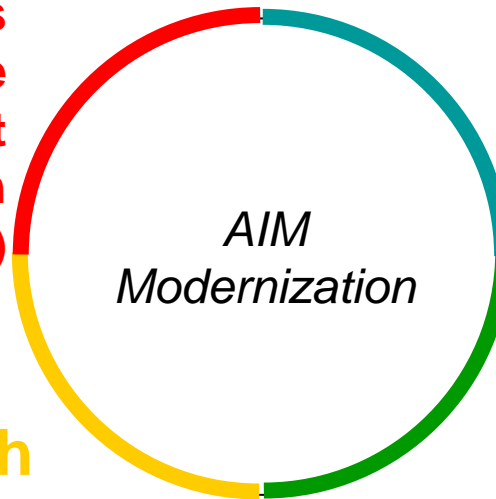
# Strategic Plan

## Technical

- Future Systems
- SWIM compliance
- Legacy support
- Aeronautical Information Exchange Model (AIXM)

## Outreach

- Education
- Human factors analysis
- Stakeholder working groups



## Policy

- ICAO compliance
- Coordination with Canada
- Digital capture and delivery

## Safety

- Minimize stakeholder impacts
- Streamline system transitions

# Program strategic deliverables

*Provide a 'one stop shop' for the aeronautical information services necessary for flight operations*

- **Improve Safety**
  - Timely and accurate distribution of aeronautical information
  - Capturing and distributing digital aeronautical information
- **Improve efficiency**
  - Digital capture and delivery
  - Streamlined information management
- **International Leadership**
  - “Digital NOTAM”
  - ICAO compliant NOTAMs
- **Supporting NextGen**
  - Single Authoritative Source
  - Infrastructure for 4D flight planning, shared situational awareness, ...



*NOTAM  
Advisories  
Special Use Airspace  
Airport Field Conditions  
SNOWTAMS  
Flow Constraints*

# AIM Modernization Solution

## Digital capture and delivery

**Runway**

Runway:

Runway Operation Status:

Marking:

Modify Runway Length

Description	
NOTAM Number	10/005
Issue Date	19 Nov 2008
Airport	COS (KCOS)
Effective Times	
Beginning	20 Nov 2008
Ending	20 Nov 2008
Affected Area(s)	
Runway	17R/35L
Operation Status	Closed
Issuing Authority	City of Colorado Springs Muni

Entry

AIXM XML

Plain Language

Charts



# Capability roadmap

2008 2010 2012 2014+

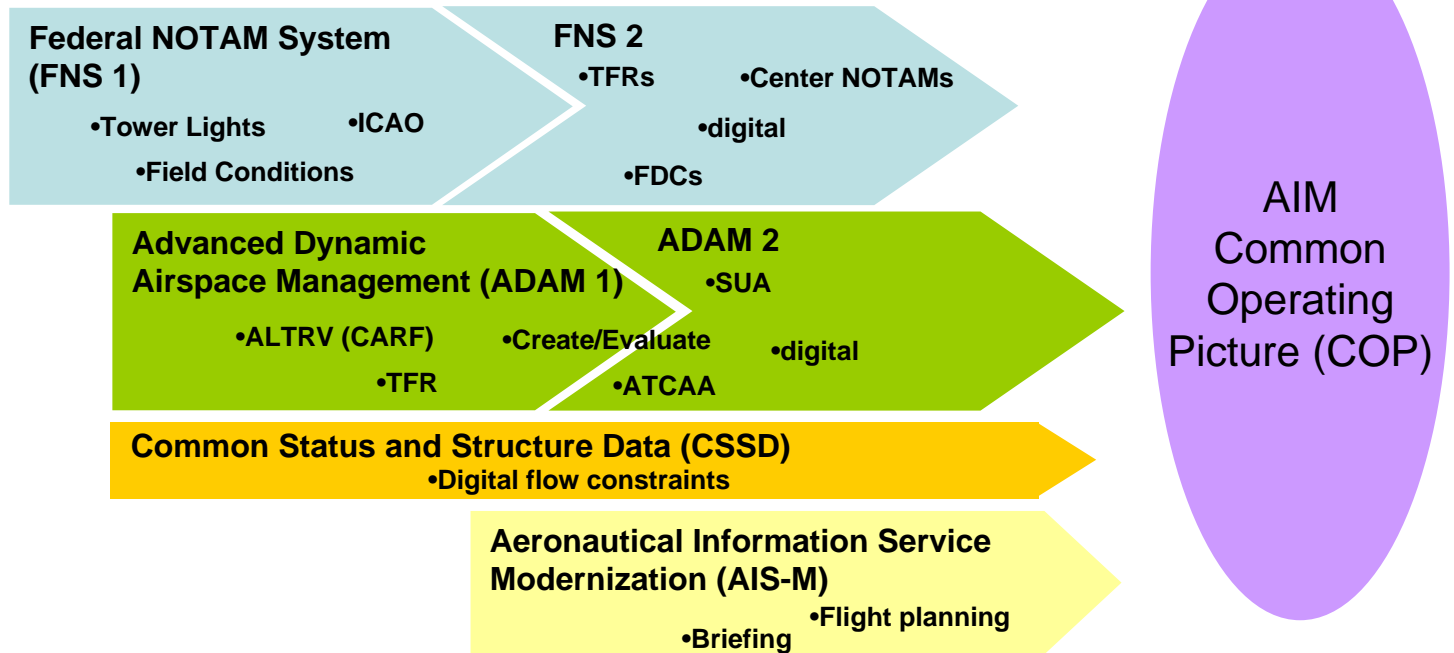
## AIM Modernization "Capital Investment Program"



◆ Initial ◆ Segment 1 Final ◆ Segment 2 Final

— Digital NOTAM Concept Development

— EUROCONTROL xNOTAM trials





# Federal NOTAM System (Version 1)

2008

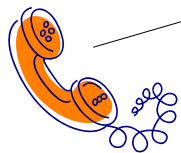
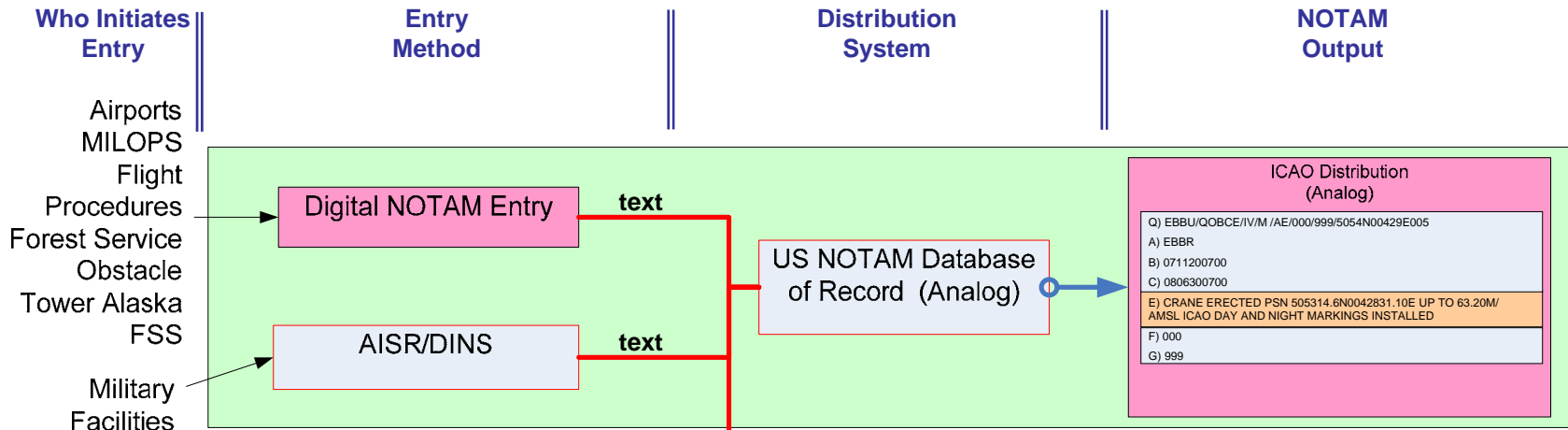
2010

2012

2014+

Federal NOTAM System  
(FNS 1)

FNS 2



USNS = United States NOTAM System  
DINS = Defense Internet NOTAM Service  
AISR = Aeronautical Information Service Replacement

- Joint military and civilian system
- ICAO-compliant NOTAM distribution
- Consolidated NOTAM entry
- Consolidated NOTAM distribution



# Federal NOTAM System

## 2008/2009 demonstration

2008

2010

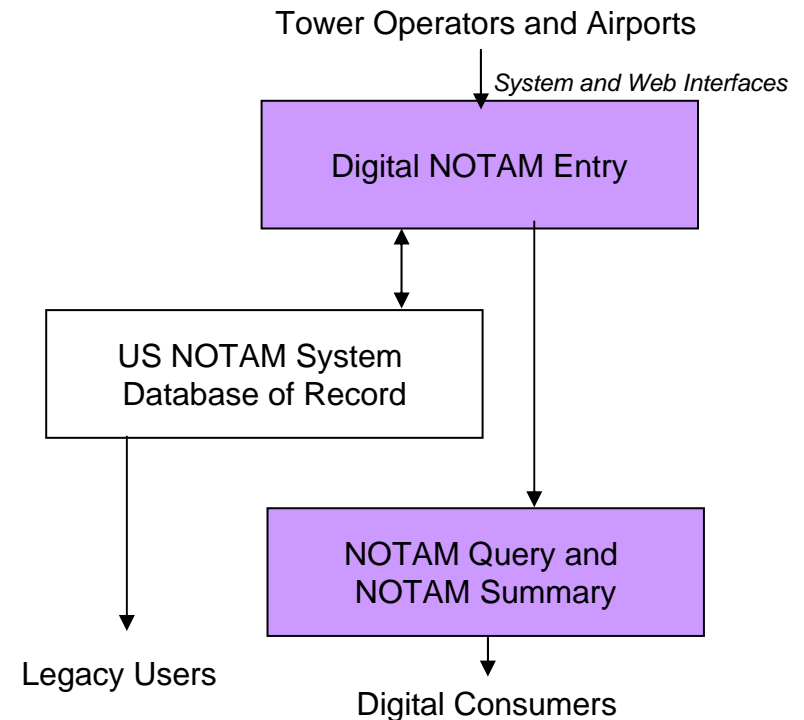
2012

2014+

Federal NOTAM System  
(FNS 1)

FNS 2

- **Digital Entry**
  - Runway closures and snow conditions
  - Tower lights out
- **Web site concepts**
  - Airport NOTAM summary
  - NOTAM queries
- **Concept validation**
  - Technology, Policy, Safety and Outreach
    - Field studies
    - Limited deployment demonstrations

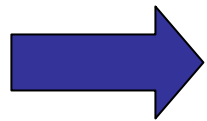


# Summary

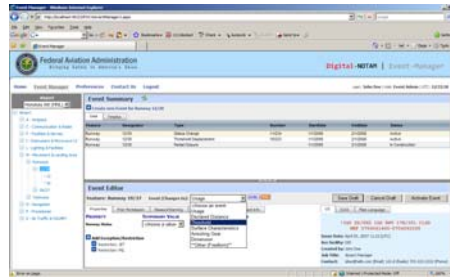
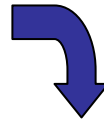
- **Insight into the FAA's investment program for Aeronautical Information Management modernization**
  - One stop shop for aeronautical information
  - Digital capture and digital delivery
- **First steps**
  - FNS Demonstration in 2008/2009
  - FNS version 1 – Consolidated and ICAO-compliant in 2010



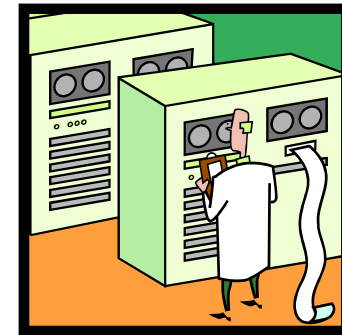
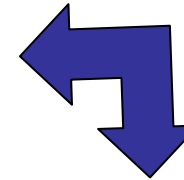
# Demonstrations



**Airport NOTAM  
Display**



**NOTAM Web Entry**



**System to System**

# Digital NOTAM Capture Demo

The screenshot displays the US Digital NOTAM System web interface. The browser address bar shows the URL: `http://10.112.161.130:8080/dnotam/EventManager.html`. The page header includes the Federal Aviation Administration logo and the text "Digital - AIM | NOTAM - Manager". The user is identified as "Demo User" with the role of "Originator" and the date/time is "September 22 2008 MON 18:16 UTC".

The interface is divided into several sections:

- NOTAM Explorer:** A tree view on the left showing a hierarchy of airports and NOTAM categories. The selected airport is "ORD-Chicago O'Hare Intl". Under "Runway (0/0)", the category "14L (0/0)" is selected.
- NOTAM Summary - 14L/32R - 14L - All [0 records]:** A table with columns: Feature, Designator, Scenario, Number, Start Date, End Date, and Status. It currently shows "No Records".
- NOTAM Editor 14L:** A form for editing a NOTAM. The "NOTAM Template" is set to "Threshold Displacement". The form has tabs for "Properties", "Schedule", "Prior Permission", "Reason/Warning", "Notes", and "Contact Info". The "Properties" tab is active, showing:
 

Property	Temporary Value	Permanent Value
Threshold Displacement:	2500	feet 1998 feet
Landing Distance Available (LDA):	8500	feet 8007 feet
Marking:	NON-STANDARD	
- Preview:** A text box on the right showing the generated NOTAM text: "ORD XX/XXX ORD RWY 14L THR DSPLCD 2500 LDA 8500 NONSTANDARD MARKING".

At the bottom of the browser window, a status bar indicates: "Loading 'http://10.112.161.130:8080/dnotam/EventManager.html', completed 30 of 31 items."



# System to System NOTAM Entry

“Lights Out” Entry

Sample TOWER Lights OUT NOTAM Submission using web service

Webservice URL:

Obstacle: Runway Closure

Tower ASN/ASR:  Status:

Start Date:  Start Time:

End Date:  End Time:

*All Date and Time Fields should be in UTC*

calling webservice...  
ErrorCode = 0  
NOTAMID = TEST\_0070/08

TranslationUS  
IORD TEST\_0070/08 ORD OBST TOWER 892 (192AGL) 6.47 NE LGTS OTS WEF 0809222100 - 0809281400

TranslationCAC  
TEST\_0070/08 NOTAM - cdt: b: D; b: KDD; b: I; b: J; b: M; b: C; b: I; b: 000; b: 999; b: 253; b: 08002; b: 005; b: d: 1; b: A; b: nosp; b: /; b: I; b: ORD; b: c: 1; b: B; b: nosp; b: /; b: 0809222100; b: c: 1; b: D; b: nosp; b: /; b: 0809281400; b: c: 1; b: E; b: nosp; b: /; b: T; b: W; b: F; b: P; b: S; b: N; b: 4158; b: 0375; b: W; b: C; b: S; b: T; b: A; b: C; b: L; b: E; b: L; b: G; b: T; b: O; b: N; b: T; b: O; b: W; b: E; b: R; b: U; b: S; b: b: T; b: O; b: W; b: E; b: R; b: 1; b: 9; b: 2; b: A; b: G; b: L; b: 6; b: 4; b: 7; b: N; b: E; b: L; b: G; b: T; b: S; b: W; b: E; b: F; b: 0; b: 8; b: 0; b: 9; b: 2; b: 2; b: 1; b: 0; b: 0; b: -; b: 0; b: 8; b: 0; b: 9; b: 2; b: 8; b: 1; b: 4; b: 0; b: 0

TranslationModern

Sample Airport Entry

Sample TOWER Lights OUT NOTAM Submission using web service

Webservice URL:

Obstacle: Runway Closure

Airport ID:  Status:

Runway Desig:

Start Date:  Start Time:

End Date:  End Time:

*All Date and Time Fields should be in UTC*

calling webservice...  
ErrorCode = 0  
NOTAMID = TEST\_0098/08

TranslationUS  
IChS TEST\_0098/08 CHS RWY 15/33 CLSD WEF 0809221200 - 0809021400

TranslationCAC  
TEST\_0098/08 NOTAM - b: d: 1; b: D; b: nosp; b: /; b: K; b: CHS; b: Q; b: M; b: R; b: L; b: C; b: A; b: V; b: N; b: B; b: D; b: A; b: /; b: 000; b: 999; b: 253; b: 08002; b: 005; b: d: 1; b: A; b: nosp; b: /; b: K; b: CHS; b: c: 1; b: B; b: nosp; b: /; b: 0809221200; b: c: 1; b: C; b: nosp; b: /; b: 0809021400; b: c: 1; b: E; b: nosp; b: /; b: R; b: W; b: Y; b: 1; b: 5; b: 3; b: 3; b: C; b: L; b: S; b: D; b: W; b: E; b: F; b: 0; b: 8; b: 0; b: 9; b: 2; b: 2; b: 1; b: 2; b: 0; b: 0; b: -; b: 0; b: 8; b: 0; b: 9; b: 0; b: 2; b: 1; b: 4; b: 0; b: 0

TranslationModern

- “Lights out” NOTAM Capture (42% of all NOTAMs, 75% of D NOTAMs)
- NavAid Capture
- Procedures Capture
- Airports Capture
  - Electronic System Interface Capture for large airports (SWIM compliant web services)
  - Web Capture as backup and other airports

# Field Summary Demo

## notamdemo.aim.faa.gov/ficon

Federal Aviation Administration  
Bringing Safety to America's Skies

digital - AIM | FICON

Facilities: (separated by commas)  Search

UTC: WED September 24 2008 20:37

Facility Name missing

13L	08/084 JFK RWY 13L VASI OTS EXC FOUR BOX LEFT SIDE	08/08/2008 18:44
	09/082 JFK RWY 13L ALSF2 CMSND	09/09/2008 22:25
13L/31R	09/031 JFK RWY 13L/31R HOLD BAR MARKINGS OBS AT TWY E	09/03/2008 21:22
	09/215 JFK RWY 13L/31R CLSD WEF 0809250300-0809251100	09/25/2008 03:00 - 09/25/2008 11:00
13R	09/174 JFK RWY 13R VASI OTS	09/19/2008 12:56
22R	09/066 JFK RWY 22R LEAD OFF LGT AT TWY K AND TWY KB OTS	09/09/2008 15:53
4L	08/278 JFK RWY 4L LEAD OFF LGTS AT TWY FB OTS	08/30/2008 06:28
4L/22R	09/065 JFK RWY 4L/22R RCLL OTS	09/09/2008 15:34
	09/218 JFK RWY 4L/22R CLSD WEF 0809250200-0809251100	09/25/2008 02:00 - 09/25/2008 11:00

Done Internet 100%

# Summary of Demonstration

- **NOTAM Entry**
  - Web page and system interface
  - Airport operators – Runway NOTAMS and SNOW NOTAMS
  - Tower operators – Tower lights out NOTAMS
  - 2008/2009 demonstration
- **NOTAM Query and Summary pages**
  - Web pages for distribution
  - Demonstrations available today at <http://notams.aim.faa.gov>
  - Production in 2009
    - After completion of site set up and security