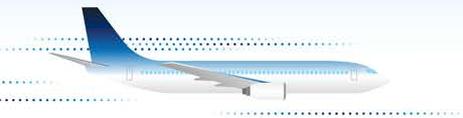


.....: **FAA** :.....
.....
DATA OPTIMIZATION
.....
.....: **SUMMIT** :.....

LIVESTREAM WILL BEGIN SHORTLY



Poll: What City are you From?



FAA DATA OPTIMIZATION SUMMIT



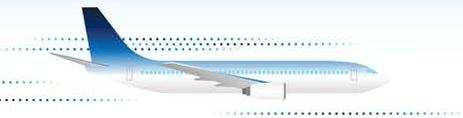
**Federal Aviation
Administration**



Agenda

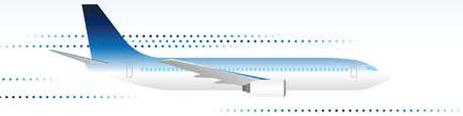
- Opening Remarks
- Census: User Centric Design & Data Packaging
- Users of FAA Data Demonstration Showcase
- FAA Data Demonstration Showcase
- Help Shape the Future: Shared Ideation
- Open Forum
- Where Do We Go From Here?





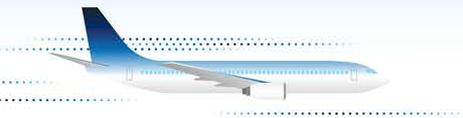
**Poll: in one word, how do
you want to consume
NOTAMs in the future?**





Panel Discussion





Census: User Centric Design and Data Packaging

Drew Zachary

U.S. Census Bureau





HUMAN-CENTERED DESIGN

at the U.S. Census Bureau

Drew Zachary

Co-Director

Census Open Innovation Labs

drew.a.zachary@census.gov



the **U.S. CENSUS BUREAU**

CENSUS OPEN INNOVATION LABS

We source knowledge and solutions through user-centered design and data.



THE OPPORTUNITY PROJECT



CENSUS ACCELERATE



HUMAN-CENTERED DESIGN TRAINING



CIVIC DIGITAL FELLOWSHIP PROGRAM

Developers

About this Section

API Forum

App Gallery

Available APIs

Geography

Guidance for Developers

News

Terms of Service

Updates

< [Back to Data](#)

The Census Bureau has begun rolling out our datasets via APIs. Check out our [Discovery Tool](#). Sign up for our [newsletter](#) to get the latest updates and newest dataset addition. We also invite you to make requests for features / data via our [forum](#).

[Read More](#)



[Developers' Forum](#)

[Join the Mailing List](#)

[JavaScript SDK](#)



Updates

UPDATES | OCTOBER 24, 2019

Quarterly Workforce Indicators Endpoint Restored

The Quarterly Workforce Indicators' endpoints have been restored.

UPDATES | OCTOBER 22, 2019

Quarterly Workforce Indicators Endpoint Restored

EXPERIENCE USING GENSUS DATA

Little (Novice)

Lots (Expert)



Insight: "Green" users may be experts with data/APIs in general, but novices with Census data. If we assume they are experts, we will create an unpleasant/unworkable UX on our developer pages.





**THE OPPORTUNITY
PROJECT **

See the Projects

Browse the tools built through The Opportunity Project to learn more about products created through our sprints by tech companies, universities, and non-profits. You can also adopt these tools in your community, help to expand them, or help to connect them with target end users.

BROWSE BY TOPIC



Fulcrum Community for Addressing and Disaster Preparedness

Spatial Networks' Fulcrum mobile app is a field data collection platform that allows communities to collect crowdsourced data. Spatial Networks used the Census Bureau's National Address Database schema and USDA's NAIP imagery to create a Community account for The Opportunity Project, which provides a field data crowdsourcing platform for government or agency stakeholders with gaps in their address data on the ground.



DATA CURATION HUB

coming soon.

TOP Workforce Sprint Suggested Data Resources

Updated: August 7, 2019

pg 1

DATA & RESOURCES FOR ALL PROBLEM STATEMENTS

Opportunity Zone List and Locations [from US Treasury Department](#) and [from EIG](#)

US Census Bureau Data

APIs & Developer Resources:

POC for Developer Resources: Logan Powell (logan.t.powell@census.gov)

- <https://www.census.gov/developers/>
- <https://uscensusbureau.slack.com>

Social/Economic data

- [Housing Assistance Data](#)
- [Individual Assistance Data](#)
- [CDC Social Vulnerability Index](#)
- Census Bureau TIGER Data: [TIGER/Line Roads](#), [TIGER/Line Address Range-Feature](#)

Demographic data

- [US Census Bureau American Community Survey](#) – population data
 - POCs: Eric Coyle (eric.a.coyle@census.gov), Logan Powell (logan.t.powell@census.gov)

Census Economic Data

POC: Andy Hait (Andrew.W.Hait@census.gov)

- [Business Formation Statistics](#): this data offers a timely and frequent snapshot of early-stage business formation activity. It looks at trends in business applications and formations at the state, regional and national level. [Link to more information](#)
- [County Business Patterns](#): annual data on employer businesses (including number of businesses, employment, and payroll) at the state, county, metro area, and ZIP Code



HUMAN-CENTERED DESIGN TRAINING

THE OPPORTUNITY PROJECT

DEMO DAY
DEMO DAY
DEMO DAY
DEMO DAY
DEMO DAY

2019

Dec 10

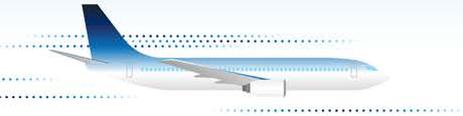
12-5PM EST

U.S. Census Bureau

Suitland, MD

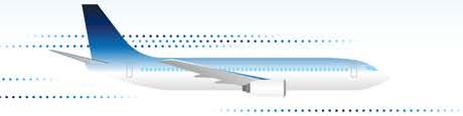
RSVP

topdemoday2019.splashthat.com



Users of FAA Data Demonstration Showcase

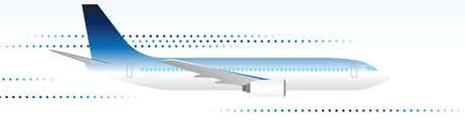




Jim Mills

Chief, DoD NOTAMs





What is the DoD Aeronautical Information Portal (DAIP)

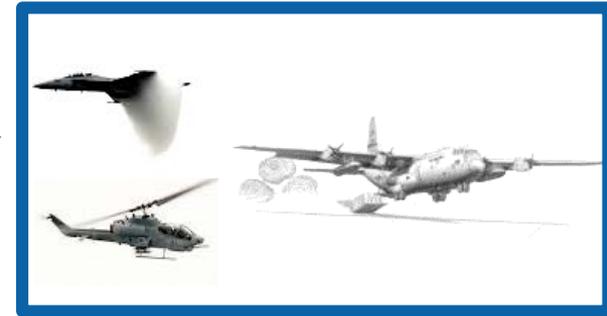
End-to-End Modernization to Create and Distribute NOTAMs & AI



New Tool for Creation & Management



New Connectivity & Exchange Model



Improved Tools for Query & Planning

Partner with:

- FAA on NOTAM origination tool and connectivity
- DOD aviation community and military services on query and distribution
- NGA and FAA on baseline data



Federal Aviation
Administration



NOTAM Query & Distribution

GOALS

- Develop a secure DOD portal for aeronautical information, weather, and flight plans
- Provide improved tools to counter information overload and improve situational awareness
- Automate graphical NOTAM depiction and distribution

ENHANCEMENTS

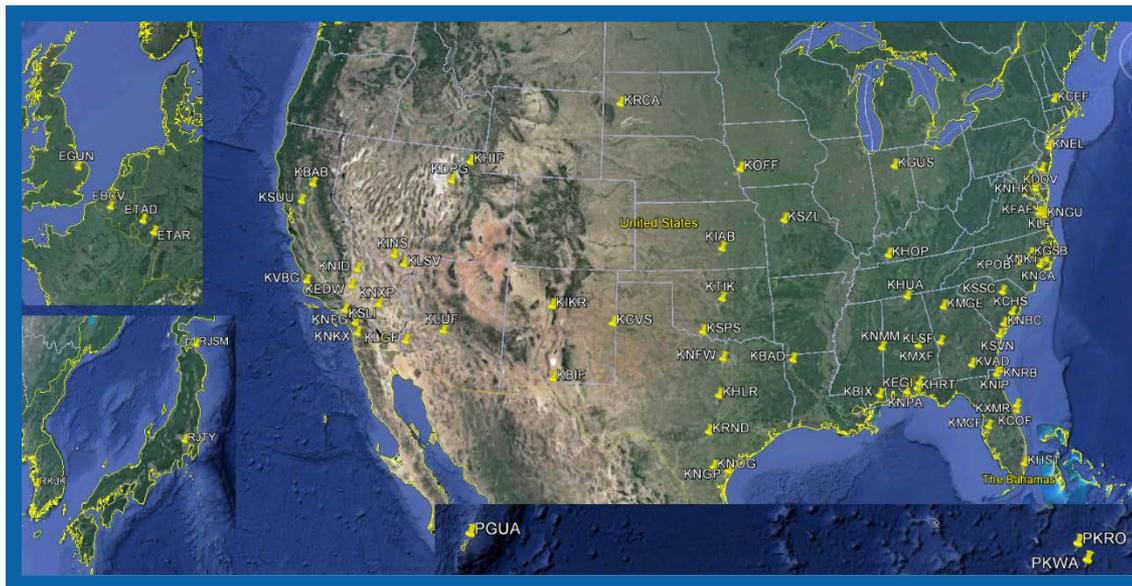
- Smart route of flight query for ICAO & domestic
- Schedule briefing
- Filtering and categorization of NOTAMs
- Overlay digital NOTAM on NGA based airfield diagram
- Web services for data distribution, EFB, and BI
- Hosted on DISA mil-cloud with secondary DR/COOP site





Milestones

FAA
DATA OPTIMIZATION
SUMMIT

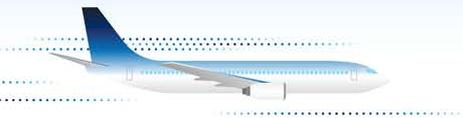


Production: March 16, 2015

100% deployed: <https://www.daip.jcs.mil/daip/mobile/index>



Federal Aviation
Administration



DoD NOTAMs

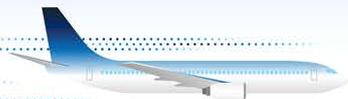
Public Law 112-153 the Pilot's Bill of Rights

- *Provide a filtering mechanism similar to that provided by the Department of Defense Notices to Airmen.*
- TFRs must be included.

What's in DoD NOTAMs

- Route of Flight Query for ICAO & Domestic
- Schedule Briefing
- Prioritization and Filtering of NOTAMs
- Graphical NOTAMs
- Web Services for data distribution, EFB, and BI
- Hosted on DISA Mil-Cloud with secondary DR/COOP site





NOTAM Briefing



Department of Defense
Aeronautical Information System

Home Login Defense News About DAIP Mon Nov 18 22:57:47 2019 UTC

NOTAM Query

- [SEARCH BY LOCATION](#)
- [SEARCH BY ROUTE OF FLIGHT](#)
- [AREA BRIEFING](#)
- [NOTAM ID SEARCH](#)
- [DOD PROCEDURES](#)
- [US ARTCC, TFRs AND SPECIAL NOTICES](#)
- [FIR NOTAMS](#)
- [AFOD EUROPE NOTICES](#)
- [ATTENTION NOTICES](#)
- [FDC NOTICES](#)
- [FDC SPECIAL NOTICES](#)
- [DAFIF/FLIP CHART NOTICES](#)
- [PACIFIC TRACKS](#)
- [NORTH ATLANTIC TRACKS](#)
- [ARTCC TFRs](#)
- [PRESIDENTIAL TFRs](#)

Search NOTAMS by Route of Flight

FLIGHT INFORMATION

Departure *	<input type="text" value="CHS"/>
Destination *	<input type="text" value="DOV"/>
Alternates	<input type="text" value="NHK"/>
Route	<input type="text" value="RIC V157 GARED V229 PANZE"/>

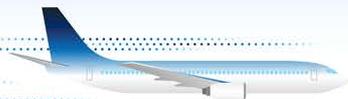
FILTERS

Radius	<input type="text" value="10 Nautical Miles"/>
Runway Length (Feet)	<input type="text"/>
Runway Width (Feet)	<input type="text"/>
Airport Type	<input type="text" value="All"/>

Resources

- Birdtams**
 - [European Birdtams](#)
- Graphical TFRs**
 - [Graphical TFRs](#)
- Tracks**
 - [North Atlantic Track](#)
 - [Pacific Tracks](#)
- DAIP Search Utilities**
 - [Location Lookup](#)
 - [Q-Code Lookup](#)
 - [ICAO Contractions \(7340.2\)](#)
- DAIP Training Aids & Publications**
 - [DAIP Training Document](#)
 - [AFI 11-208\(I\), AR 95-10, OPNAVINST 3721.20](#)





Route of Flight Briefing

DAIP NOTAM Query Results

NOTAMs for flight from KCHS to DOV with alternate KNHK using route RIC V157 GARED V229 PMNZE. Additional Criteria: Radius=10NM, Airport Type=Any

Flight Path

- POD - Point of Departure
 - KCHS CHARLESTON AFB INTL [29]
- POA - Point of Arrival
- ALTN - Alternate Aerodrome(s)
 - KNHK PATUXENT RIVER NAS [20]
- ENROUTE
- TFR
- ARTCC/FIR
- FDC

NOTAM COUNT

Total: 515
Filtered Out: 0

FORMAT

Report Raw

SORT BY

Effective Date

INCLUDE

- Include All
- Filter by Class Reduce
- Flight Data Center
- Laser Show
- Military Operating Area
- Obstruction FIM
- Obstruction Vex & Approach
- Special Notices
- Temporary Flight Restrictions
- Tower and Obstruction Notams

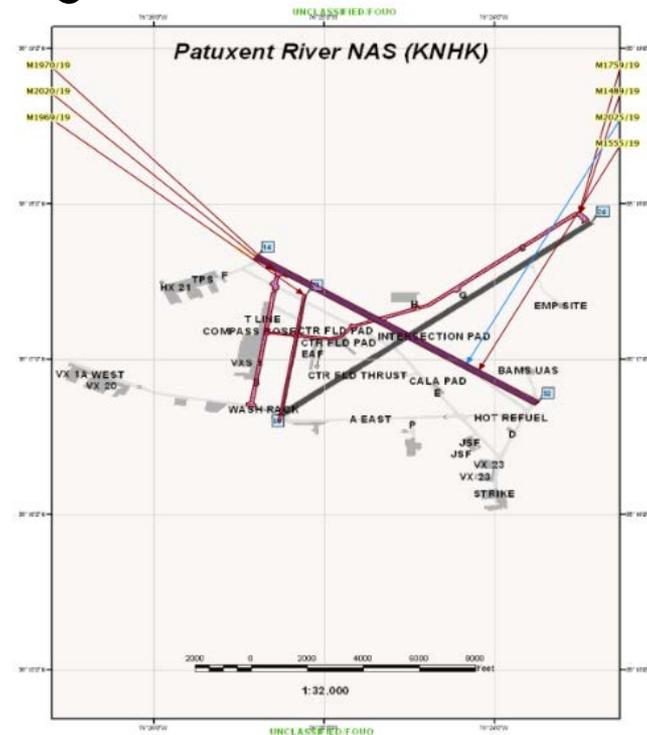
LEGEND

- ✘ Warning
- ⚠ Caution

Uncheck All Check All Expand All Collapse All Save Print

NOTAM Details:

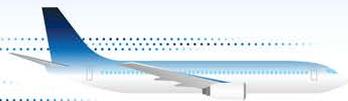
- M201219 M201219 NOTAM
Q) ZDCQFH.LT.V/NBOIA/000999/3817N07624W005
A) KNHK
B) 1911181930
C) 1911190230
E) ADS-33 COURSE IS ACTIVE. RWY 220 CLSD TO FIXED WING AIRCRAFT.
CREATED: 18 NOV 2019 11:34
SOURCE:
- M201519 M201519 NOTAM
Q) ZDCQFH.LT.V/NBOIA/000999/3817N07624W005
A) KNHK
B) 1911181530
C) 1911181800
E) ADS-33 COURSE IS ACTIVE. RWY 220 CLSD TO FIXED WING AIRCRAF T.
CREATED: 18 NOV 2019 11:32
SOURCE:
- M202019 M202019 NOTAM
Q) ZDCQML.CN/VNBOIA/000999/3817N07624W005
A) KNHK
B) 1911181504
C) 201220300
E) TWY B CLSD FROM 14:02 TO ECHO



Prioritization Filtering of NOTAMs

- Important NOTAMs shows up first & Graphical Display of NOTAMs





DoD Graphical NOTAM

Create →

Manage →

Distribute

Defense Internet NOTAM Service
DINS
AIR FORCE • ARMY • NAVY • MARINE CORPS

Create Graphical Airport NOTAM

Draw Methods:

- Polygon
- Circle
- Rectangle

Close Polygon Clear Save & Close Close

NOTAM Information

Accessibility: KADW
NOTAM Identifier: M
AJ ICAO Identifier: KADW
B) (E) Date/Time: 03 Jan 2009: 2000Z(1C)
C) Exp/Date/Time: 01 Jan 2009: 1500Z(1C)
D) Time Schedule:
G) Grade Field: OMS C
F) Lower Limit:
G) Upper Limit:
E) Condition Text: RUNWAY B1 CLOSED

AIRPORT DIAGRAM
Effective 18 DEC 2008 - 15 JAN 2009

Create

Verify Graphical NOTAM
Tue, 9 Jan 2009 14:51:26 (UTC)

Accept Subject Close Found 4 Graphical NOTAM(s)

PREVIOUS AIRPORT DIAGRAM
Effective 7 MAY 2009 - 4 JUN 2009

CURRENT AIRPORT DIAGRAM
Effective 4 JUN 2009 - 2 JUL 2009

Manage

Defense Internet NOTAM Service
DINS
AIR FORCE • ARMY • NAVY • MARINE CORPS

Graphical Airport NOTAM Viewer

2 NOTAM(s)
This page contains only the NOTAMs that contain graphical depiction for the selected ICAO.
Close Window

Found 3 Graphical NOTAM(s)

L1828959
M0248959

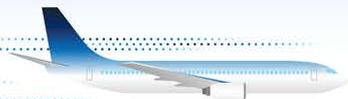
M0248959 - RWYWAY W4 CLOSED: 04 JUN 18:50
2009 UNTIL 15 JUN 12:00 USST. CREATED: 04 JUN
18:52, 2009

AIRPORT DIAGRAM
Effective 16 DEC 2008 - 15 JAN 2009

Distribute



Federal Aviation
Administration



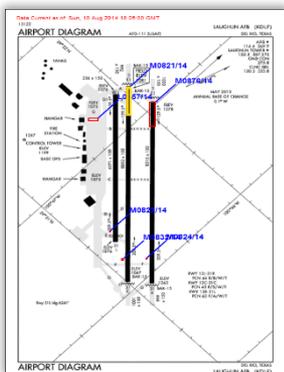
DoD Graphical NOTAM

2009

2012

2014

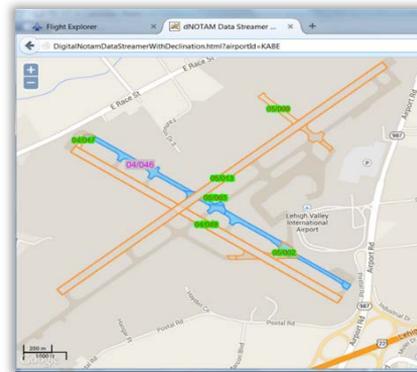
2015



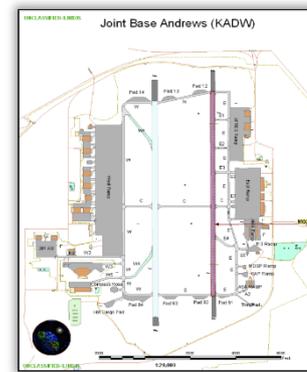
DoD NOTAMs
on AFD



Digital NOTAMs
on AFD

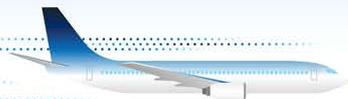


Digital NOTAMs
on Moving Map



Digital NOTAMs
on NGA AFD





2020..

Graphical Airport Notam Viewer

Disclaimer
This page contains only the NOTAMS that contain graphical depiction for the selected ICAO. This diagram shall not be used for navigational purposes.

List of NOTAMS
Found 7 Graphical NOTAM(s)

A195114
A1951/14 NOTAMN
Q) KZDC/QMRLC/IV/NBQ/A/000/999/3911N07640W005
A) KBWI
B) 1408050900
C) PERM
E) RWY 04/22 CLSD EXC TAXI

A195014
A1950/14 NOTAMN
Q) KZDC/QMRLC/IV/BO/A/000/999/3911N07640W005
A) KBWI
B) 1408050900
C) 1412310900
E) TWY E BTN RWY 10/28 AND TWY P CLSD

A175914
A1759/14 NOTAMN
Q) KZDC/QMNLCA/000/999/
A) KBWI
B) 1407091405
C) 1410182200
E) APRON DEICING APRON FOR RWY 15R CLSD

A175814
A1758/14 NOTAMN
Q) KZDC/QMRLC/000/999/
A) KBWI
B) 1407091354
C) 1410182200
E) TWY P BTN TWY H AND APCH END RWY 15R CLSD

A175214

Graphical NOTAM

AIRPORT DIAGRAM
BAITMORE/WASHINGTON INTL THURGOOD MARSHALL (BWI)
AL 804 (FAA) BAITMORE, MARYLAND

11181

324 A

112.1 137.8
BAITMORE TOWER
119.4 237.8
CHICAGO
118.05

RWY 04/22
PCN A43 F/A/W/T
5-100, D 225, 20-500, 20/200-728

RWY 10/28
PCN 110 F/A/W/T
5-100, D 225, 20-500, 20/200-790

RWY 15L/30R
PCN 28 F/A/W/T
5-20, D 60

RWY 15R/35L
PCN 100 F/A/W/T
5-100, D 225, 20-500, 20/200-790

JANUARY 2010
ARRIVAL BASE OF CHANGE
C-OP-W

AB CARGO
GENERAL AVIATION
RAMPING

REV 1758
REV 1759
REV 1951
REV 1950
REV 1752
REV 1265
REV 0201

MID-FIELD CARGO COMPLEX
FIRE STATION

ASDE & Surveillance System in use
Pilot should operate transponders
with Mode C on all legs and turns.

CAUTION: BE ALERT TO RUNWAY CROSSING CLEARANCES.
REARBACK OF ALL RUNWAY HOLDING INSTRUCTIONS IS REQUIRED.

AIRPORT DIAGRAM
BAITMORE/WASHINGTON INTL THURGOOD MARSHALL (BWI)
11181

76°41'W

76°40'W

Close





More NOTAMs

KNOW BEFORE YOU GO - WWW.PILOTSANDWEATHER.COM
11/17/2019 23:19:23 (Z)

ENROUTE WEATHER NOTAM BRIEFING & SEARCH

Aircraft ID	Departure	Destination	Airports	Route Of Flight	Speed	Altitude	Dist	Search	Clear
112134	RIC	LGA	ABE	V187 GARED V229 PANZE V44 CAMRN	340	240		Reset	

REQUEST GENERATED: Sun Nov 17 23:19:27 2019 [YOUR REQUEST TOOK 0.49s]

Aircraft ID	Dept	Dist	Route	Distance	ETE	Action
112134	RIC	LGA	V187 GARED V229 PANZE V44 CAMRN	289.54 nm	0:47:33	FILE SAVE

NOTAMS & WX
Severe WX | TFRs | Weather Charts (demo) | Navigation Info | DOD NOTAMS | Graphical NOTAM | RIC LGA ABE

AIRPORT & FACILITY DIRECTORY (AFD)
RIC - AFD | LGA - AFD

TERMINAL PROCEDURES
RIC - TFP | LGA - TFP

ENROUTE BRIEFING | SIGMET | WX | AIRMET | METAR | UA | TAF | FB | FBR | NOTAM | ALL

NOTAM FILTERS
Displaying 374274 NOTAMS
Checked to Filter:
FDC - General
FDC - Aerob
FDC - All
Center NOTAMS
Tower Light
Tower NOTAMS
Airspace
Military Procedures
Military
Enroute Obstructions
Enroute Services
Enroute Nav aids
Enroute Communications
Enroute Non Critical
Enroute Non Movement Areas
Cross out | Remove
Find & Highlight

NOTAM LIST:

- CRITICAL: P100N Men & Equipment Warning Crane Tower Light
- DEPARTURE - RICHMOND INTL - RIC
- TAXIWAY RIC 110231 RIC TWY N, UT, TWY B BTRN RWY 02/20 AND TWY U CLSD 1911191200-1911191210
- TAXIWAY RIC 091114 RIC TWY MS CLSD AND BARRICADED 190301200-1912317151
- APRON RIC 02/92 RIC APRON NORTH AIR CARRIER RAMP CLSD TO NON SCHED AIR CARRIER ACFT 1903011300-200302300
- TAXIWAY RIC 091105 RIC TWY H CLSD BARRICADED 1809301200-1912012200
- RUNWAY RIC 111026 RIC RWY 08/26 CLSD EKC XING AT TWY'S A, C, E 1811191200-1811191210
- TAXIWAY RIC 110227 RIC TWY M BTRN TWY M4 AND TWY M1 CLSD 1810142006-1911022200
- RUNWAY RIC 101028 RIC RWY 07/26 CLSD EKC TAX BTRN RWY 16/54 AND TWY L 1810142010-1912022200
- APRON RIC 04/05 RIC APRON AIR CARRIER RAMP WIP CONST ADJ GATE AS, AB, ABA, ABC LGTD AND BARRICADED 1804021823-2112312100
- OBSTRUCTIONS RIC 03/073 RIC OBST CRANE (ASN 2019-AEA-41-CE) 37323230772548W (6.8MM WNWY RIC) 504FT (350FT ADJ) FLAGGED AND LGTD TO 190321100-200607250
- OBSTRUCTIONS RIC 10/0132 RIC OBST CRANE (ASN 2018-AEA-10208-CE) 3732340772548W (6.8MM WNWY RIC) 546FT (293FT ADJ) LGTD 1810061600-200311230
- NAVAID RIC 04/297 RIC NAV TACAN OUT OF SERVICE 1904221913-200204170E5T
- Destination - LAQUARIANA - LGA
TAXIWAY ILSA 06108 LGA TWY Z BTRN TWY A AND TWY M CLSD TO ACFT WINGSPAN MORE THAN 135FT 1806110501-200101010E1ST

KNOW BEFORE YOU GO - WWW.PILOTSANDWEATHER.COM
ORD - CHICAGO O'HARE INTL
GRAPHICAL NOTAM

ORD - CHICAGO O'HARE INTL
GRAPHICAL NOTAM

- 11630 ORD 11/430 ORD TWY V7 CLSD 1911141448-1912051100
- 11209 ORD 11/209 ORD TWY E BTRN TWY E1 AND TWY TT CLSD 1911041846-1912041200
- 11210 ORD 11/210 ORD TWY M BTRN TWY D AND RWY 09R/27R CLSD 1911041858-1912201200
- 10086 ORD 10/084 ORD TWY Z BTRN TWY 35 AND TWY J CLSD 1910021856-191281200

NON GRAPHICAL NOTAM

- 10183 ORD 10/183 ORD RWY 04L/22R SAFETY AREA IRREGULAR SFC NW SIDE BTRN TWY D AND TWY M 19101311
- 10712 ORD 10/712 ORD RWY 09R/27L SAFETY AREA IRREGULAR SFC N SIDE BTRN TWY TT AND TWY M 1910210
- 10184 ORD 10/184 ORD RWY 04L/22R SAFETY AREA IRREGULAR SFC SE SIDE BTRN TWY M AND TWY NN 1910183
- 11025 ORD 11/025 ORD RWY 10C/28C CL MARKINGS OBSC 1911010803-191281200
- 11026 ORD 11/026 ORD RWY 09L LEAD OFF LOT US 1911010812-191291200
- 11027 ORD 11/027 ORD RWY 27R LEAD OFF LOT US 1911010812-191291200
- 10085 ORD 10/085 ORD RWY 04L/22R SAFETY AREA IRREGULAR SFC NW END 19101311733-200401200
- 10177 ORD 10/177 ORD RWY 09R/27L CL MARKINGS OBSC 1910311413-1911301200
- 10269 ORD 10/269 ORD RWY 09L/27R CL MARKINGS OBSC 1910081437-1912091200
- 10974 ORD 10/974 ORD RWY 09R/27L SAFETY AREA IRREGULAR SFC N SIDE BTRN TWY TT AND TWY PP 1910147
- 10809 ORD 10/809 ORD TWY 35 BLDG SWN MARKINGS AT RWY 09R APCN SOUTH SIDE NOT STD 1910230733-191
- 11032 ORD 11/032 ORD RWY V IN PAVEMENT RWY GUARD LOT AT APCN END RWY 22L US 1911011016-19120
- 11084 ORD 11/084 ORD TWY K BTRN TWY L AND TWY N WIP STEEL PLATES ADJ WEST SIDE 19110201932-1913
- 11100 ORD 11/100 ORD TWY C EDGE MARKINGS BTRN TWY C2 AND TWY M2 NORTHEAST SIDE REMOVED 1910310
- 11102 ORD 11/102 ORD RWY M SAFETY AREA BTRN RWY 04L/22R AND TWY M2 WEST SIDE IRREGULAR SFC 19102
- 11729 ORD 11/729 ORD TWY L BTRN TWY K3 AND TWY DD WIP IRREGULAR SFC ADJ SOUTH SIDE 1911175141-1
- 10042 ORD 10/042 ORD TWY AA BTRN TWY J AND TWY K MOVEMENT AREA 1910011724-2003151700
- 10043 ORD 10/043 ORD TWY BB BTRN TWY K AND TWY J MOVEMENT AREA 1910011725-2005151700
- 10044 ORD 10/044 ORD TWY U BTRN TWY BB AND TWY Z MOVEMENT AREA 1910011726-2005151700
- 10045 ORD 10/045 ORD TWY Z BTRN TWY J AND TWY K MOVEMENT AREA 1910011726-2005151700

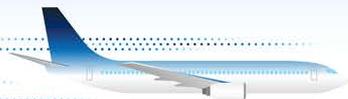
AIRPORT DIAGRAM
Updated Mon Nov 18 00:37:49 2019



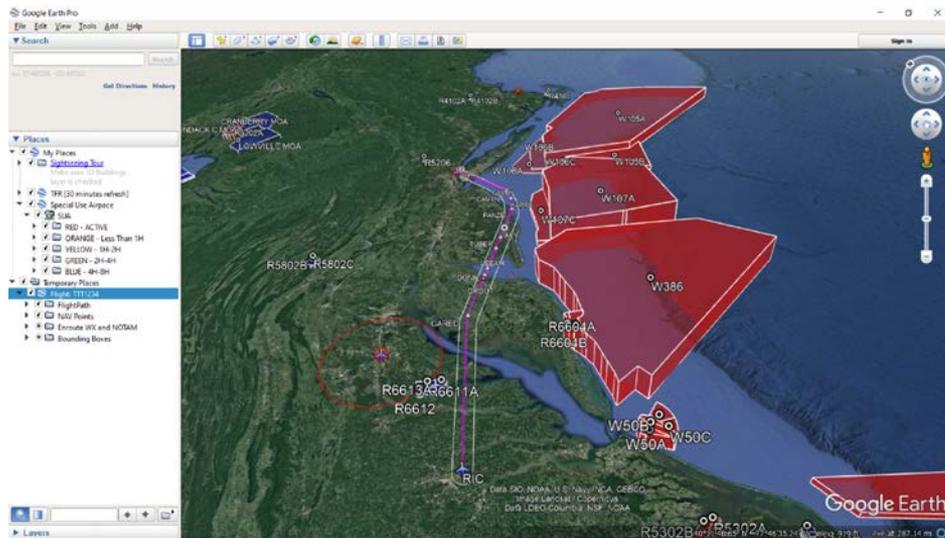
Federal Aviation
Administration

PBOR Briefing

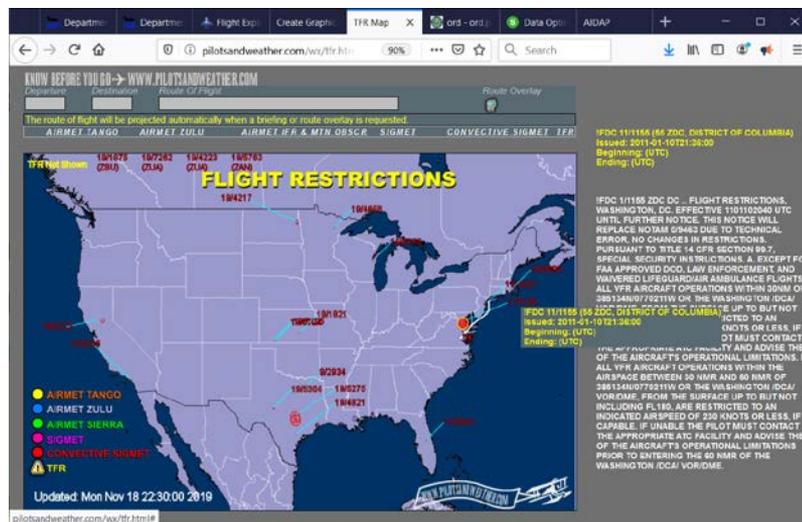
ORD Construction Notices Created On AFD



TFR & SUAs

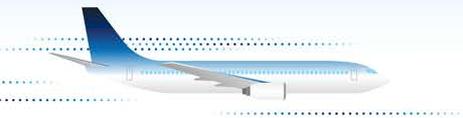


Live TFRs & SUA – NOTAM & Weather
with Route Overlay



2D – TFRs With Route Overlay





CONTACT INFO

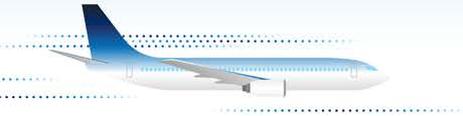
JIM MILLS – DOD NOTAM PROGRAM MANAGER

JAMES.W.MILLS3.CIV@MAIL.MIL

MINH DAO – AI SPECIALIST

MINH.DAO@ATISPACE.COM





Joseph Daniele

Leidos, Pilot Portal





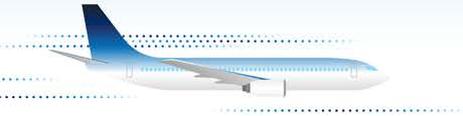
Pilot Portal Demonstration

FAA
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- NOTAMs are available using several platforms:
 - FltScape: Flight Service Station Specialists (FS21 System)
 - NOTAM Search: Pilots (Laptop/Desktop)
 - Mobile Web: (Pilots) iPhone/iPad
 - Web Services: 3rd party vendors (Vendor Platform)
 - Interactive Map for TFRs (All Platforms)
- NOTAMs included in pilot weather briefings or available for individual airports
- Standard, Outlook, Abbreviated, Scheduled, Email
- Filtering capabilities, e.g., altitude, type, products

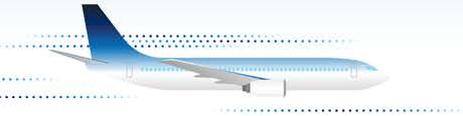


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Administration



PILOT PORTAL DEMO





Ryan McBride

Lead Product Designer ForeFlight





ForeFlight

A Boeing Company



Visualization of NOTAMs in ForeFlight

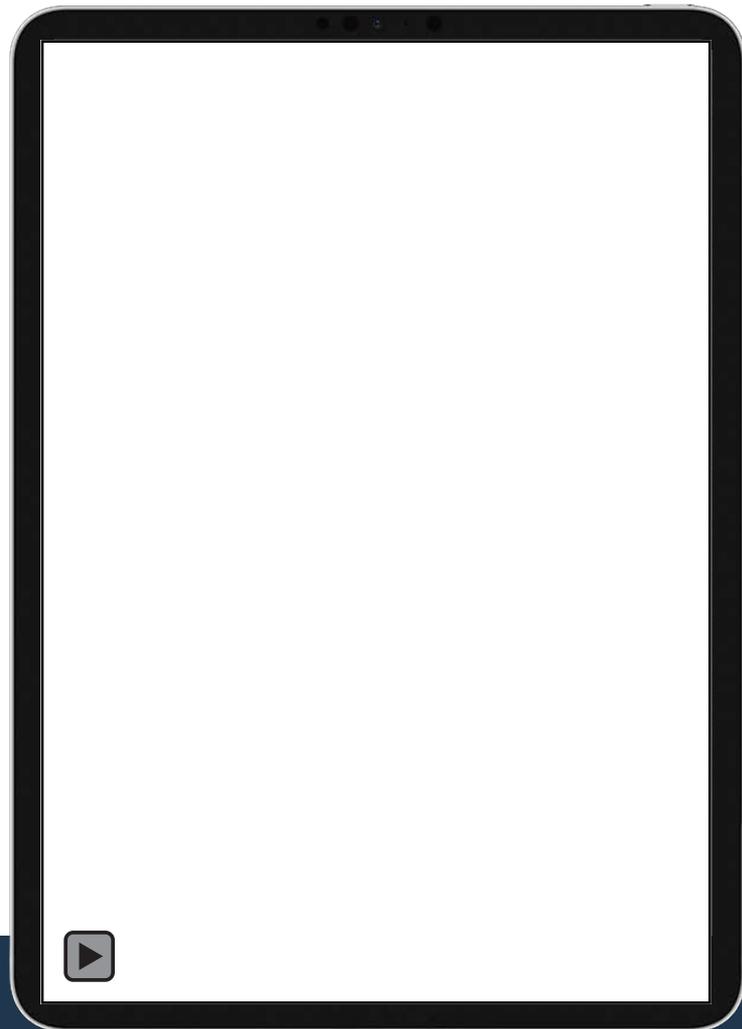
Ryan McBride

LEAD PRODUCT DESIGNER, FOREFLIGHT

TEXTUAL VISUALIZATION

NOTAM List

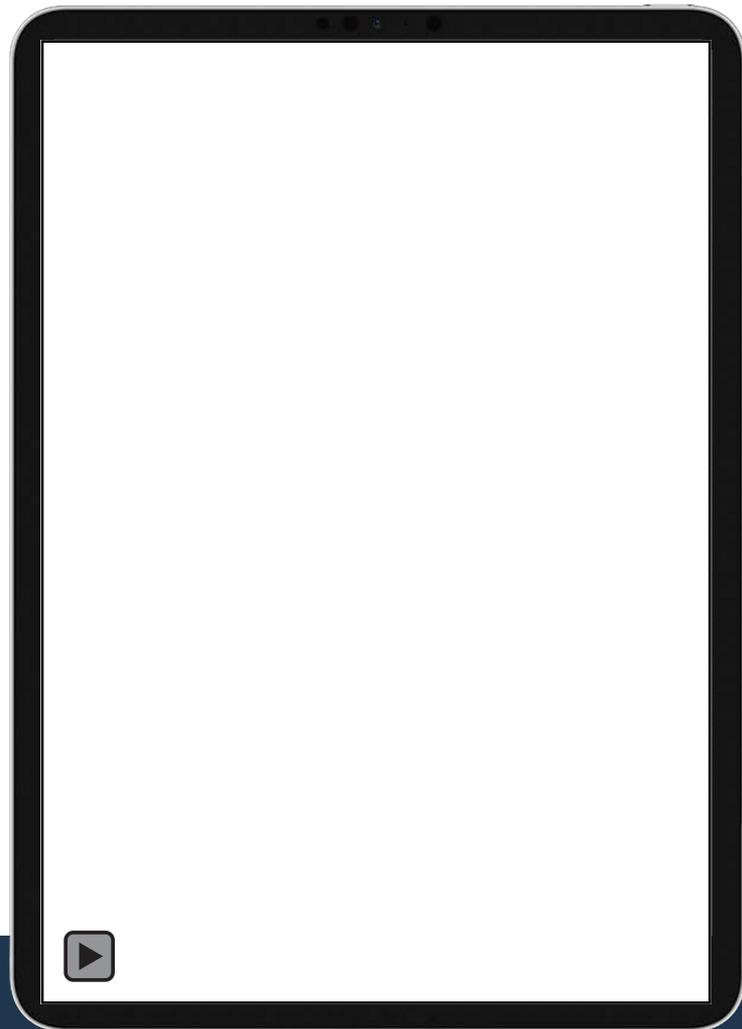
- **ForeFlight** parses **NOTAM text** to determine type and highlight key information
- Major NOTAM types - Airport, Obstacle, TFR, ARTCC - are **split into separate lists**
- NOTAM subjects - runways, taxiways, procedures - **represented using icons**
- Key information **color-coded**:
 - NOTAM subject and time information shaded differently
 - “Out of Service”/“Closed” phrases colored red to maximize recognition



TEXTUAL VISUALIZATION

NOTAMs on Plates

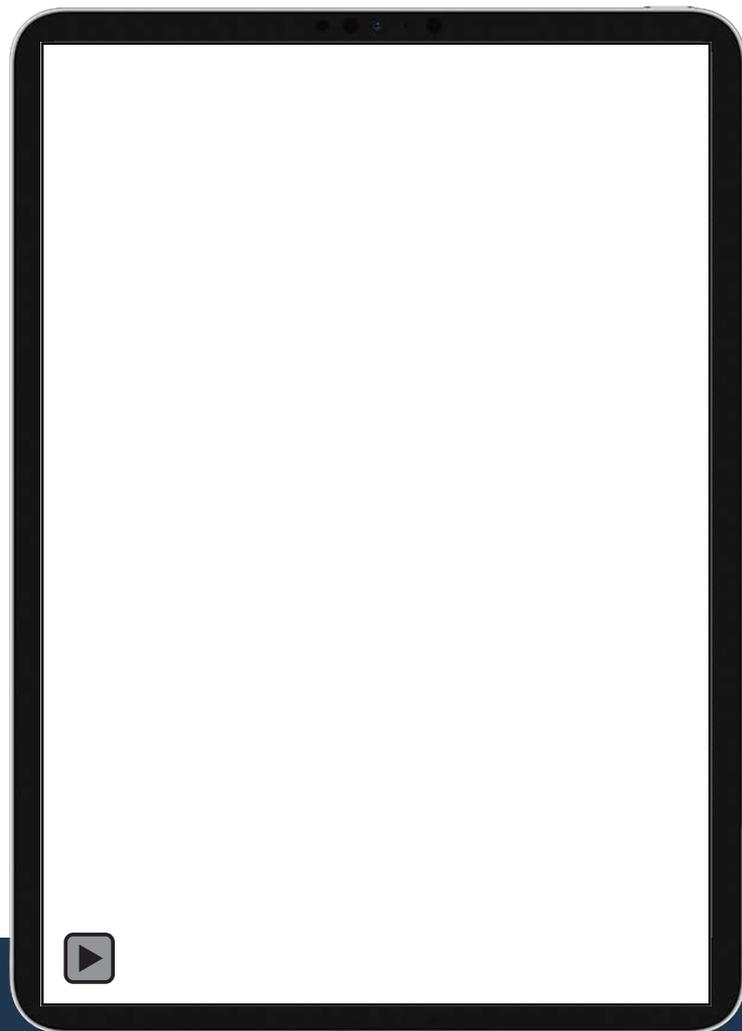
- ForeFlight lets you know when a given procedure or airport diagram has NOTAMs related to it by **displaying a red notification** at the top of the plate.
- Lists **only the NOTAMs relevant for that procedure** so you don't have to scroll through unrelated NOTAMs.



TEXTUAL VISUALIZATION

NOTAMs in FliteDeck Pro

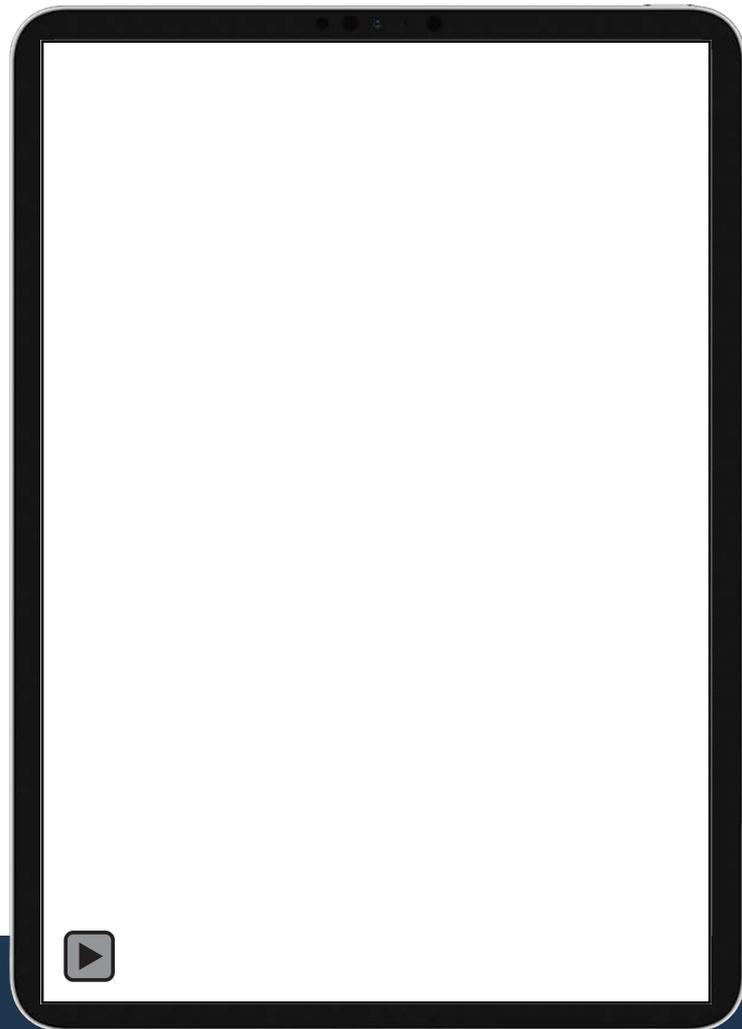
- ForeFlight's NOTAM list and display on plates were introduced to global commercial airlines with FliteDeck Pro 4.0.
- INFO/WX tab provides access to **all NOTAMs for any airport.**



TEXTUAL VISUALIZATION

NOTAMs in FliteDeck Pro

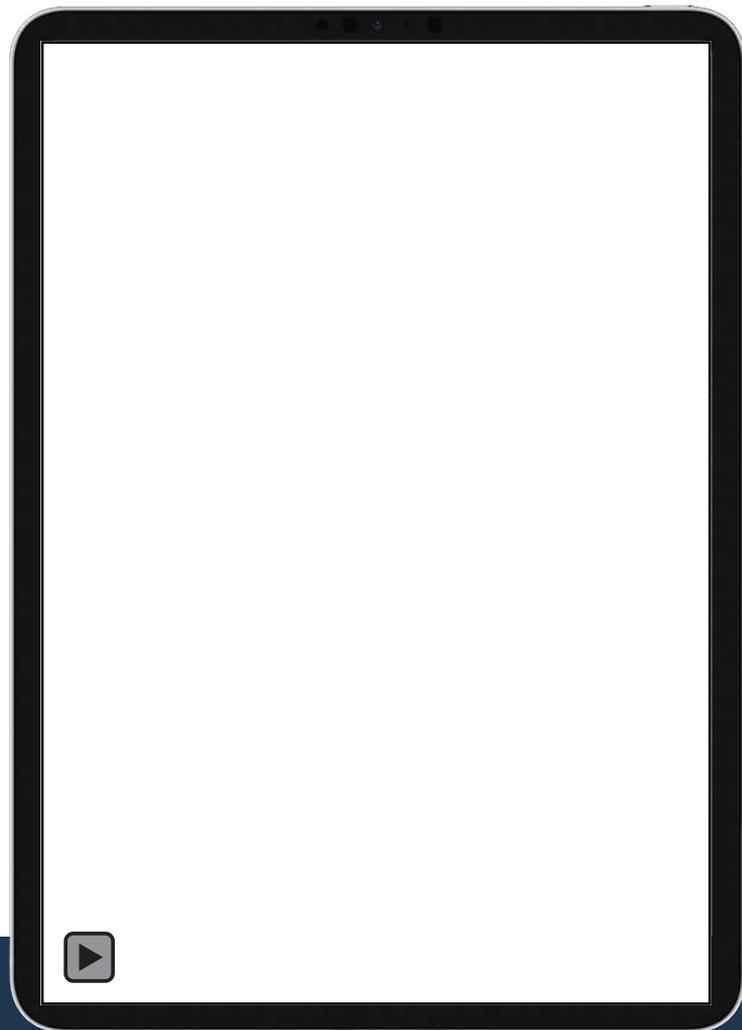
- ForeFlight's NOTAM list and display on plates were introduced to global commercial airlines with FliteDeck Pro 4.0.
- INFO/WX tab provides access to **all NOTAMs for any airport.**
- NOTAMs associated with a plate or taxi chart are accessible in the bottom-left **while viewing it.**



TEXTUAL VISUALIZATION

Closed Runway Warnings

- ForeFlight warns you of airport or runway closures by displaying a prominent red banner when you view the airport.
- Tap on the banner to view the relevant NOTAMs.



GRAPHICAL VISUALIZATION

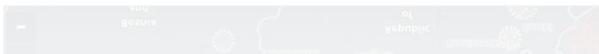
ICAO Graphical NOTAMS

- ICAO enroute NOTAMs contain more detail about location and shape.
- ICAO NOTAMs are more rigid in structure, allowing us to parse and display them graphically on the map.



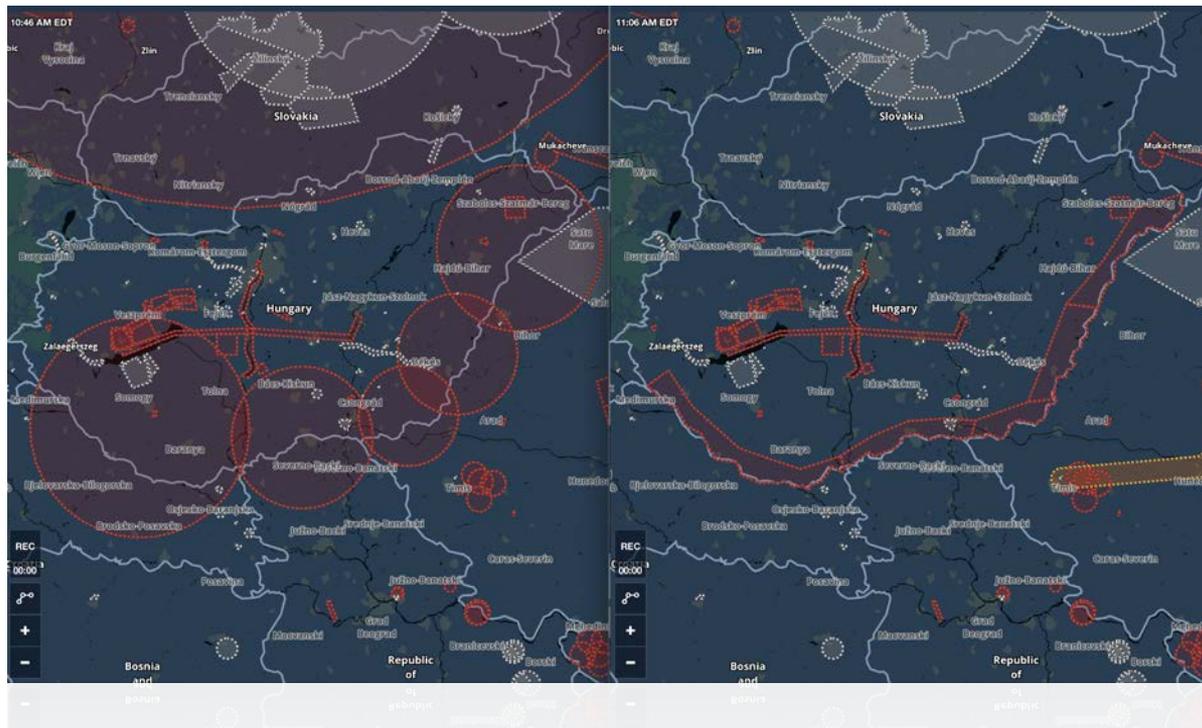
Parsing & Displaying Complex Geometry

- ICAO NOTAMs are defined as a **simple circle with a given center and radius**



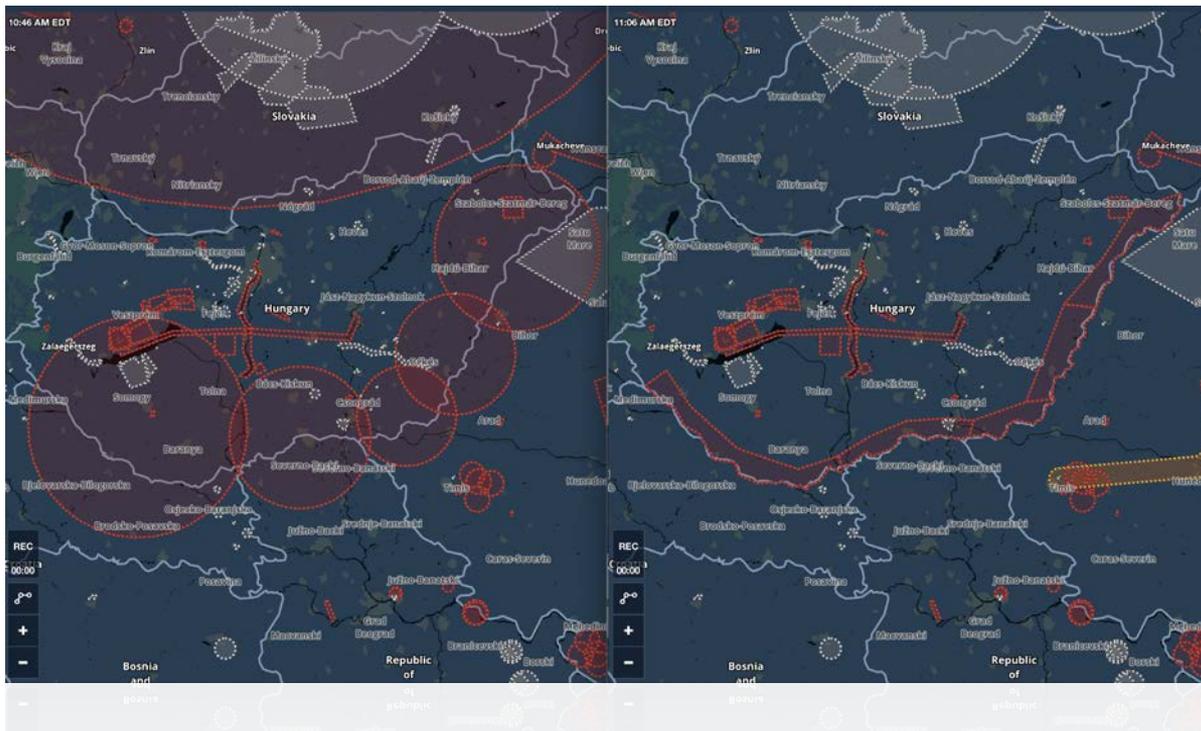
Parsing & Displaying Complex Geometry

- ICAO NOTAMs are defined as a simple circle with a given center and radius.
- ICAO NOTAMs also contain the **information needed to display their true shapes.**



Parsing & Displaying Complex Geometry

- ICAO NOTAMs are defined as a simple circle with a given center and radius.
- ICAO NOTAMs also contain the information needed to display their true shapes.
- ForeFlight is one of the only Graphical NOTAM providers in Europe that can **accurately depict most NOTAMs**.



GRAPHICAL VISUALIZATION

Example: Simple NOTAM

- The actual shape of this NOTAM is a simple circle, so all the information needed to display it is contained in the “Q” code.

M4415/19 NOTAMN

Q)

EBBU/QWELW/IV/NBO/AW/000/045/5045N00446E

005

A) EBBE

B) 1911051100

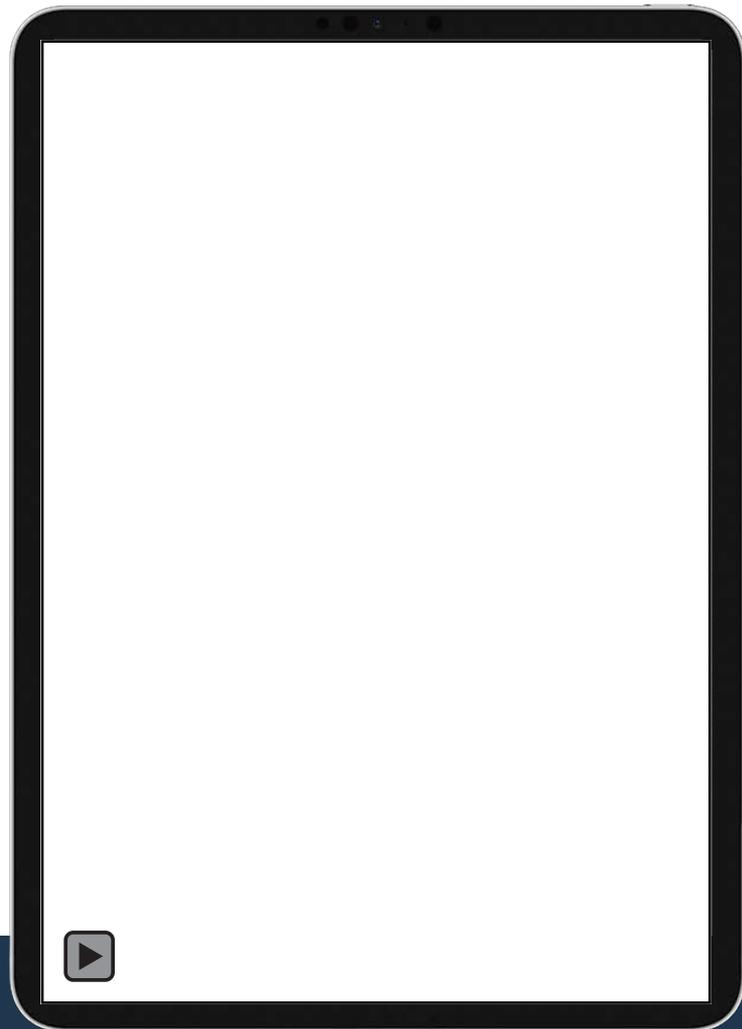
C) 1912241200 EST

D) TUE THU 1100-1200

E) EBBE AD DUE TO EMERGENCY HELICOPTER
TRAINING FLIGHTS ALL PRACTICE DIVERSIONS
AND TRAINING FLIGHTS ARE AT ATC
DISCRETION.

F) GND

G) 4500FT AMSL



GRAPHICAL VISUALIZATION

Example: Airspace NOTAM

- This NOTAM is defined by existing airspace, so drawing it as a circle would make it larger than it should be.
- To solve this, an automated process **extracts the airspace name** from the “E” code and looks it up within our nav database to find the correct geometry.

W1812/19 NOTAMN

Q)

LSAS/QRRCA/IV/BO/W/000/315/4641N00957E00

5

A) LSAS

B) 1911061230

C) 1911142000

D) 06 1230-1530, 07 12 14 0730-1030

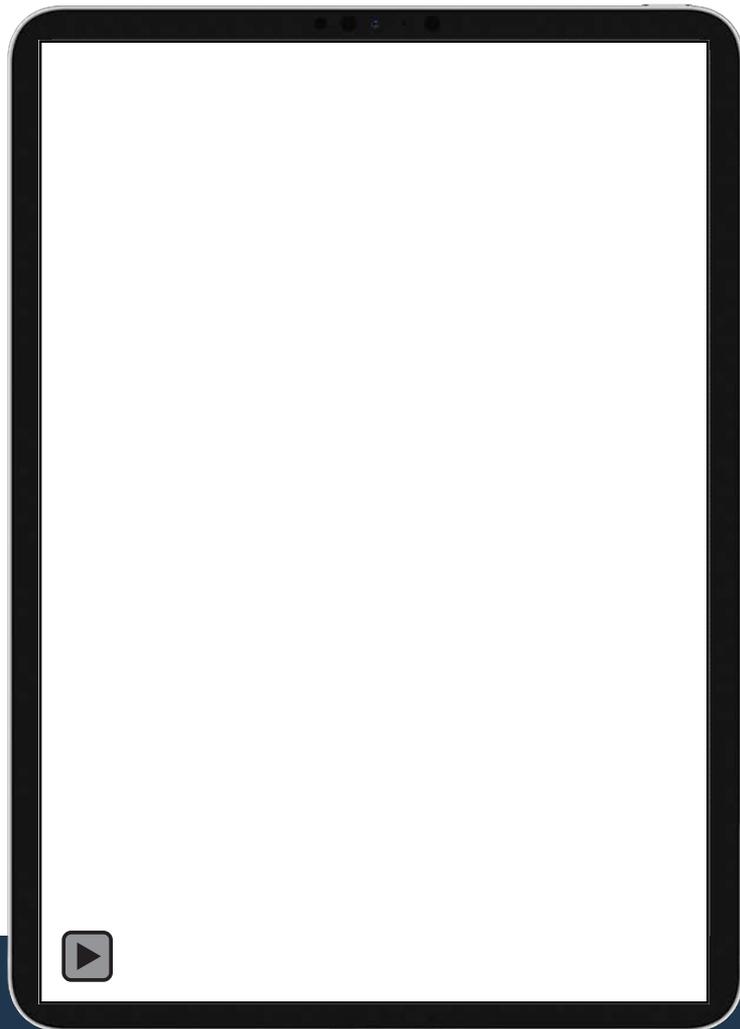
1230-1530 1830-2000, 08 11 13 0730-1030

1230-1530

E) R-AREA LS-R11 S-CHANF ACT.

F) GND

G) 31500FT AMSL



GRAPHICAL VISUALIZATION

Example: Complex NOTAM

- Parsing and plotting the many lat/long points in the “E” code lets us turn the circle defined in Q (covering 29 sq. miles) into the actual shape (covering only 2.9 sq. miles)

D3619/19 NOTAMN

Q) LECM/QRTCA/IV/BO/W/000/007/4041N00304W003

A) LECM

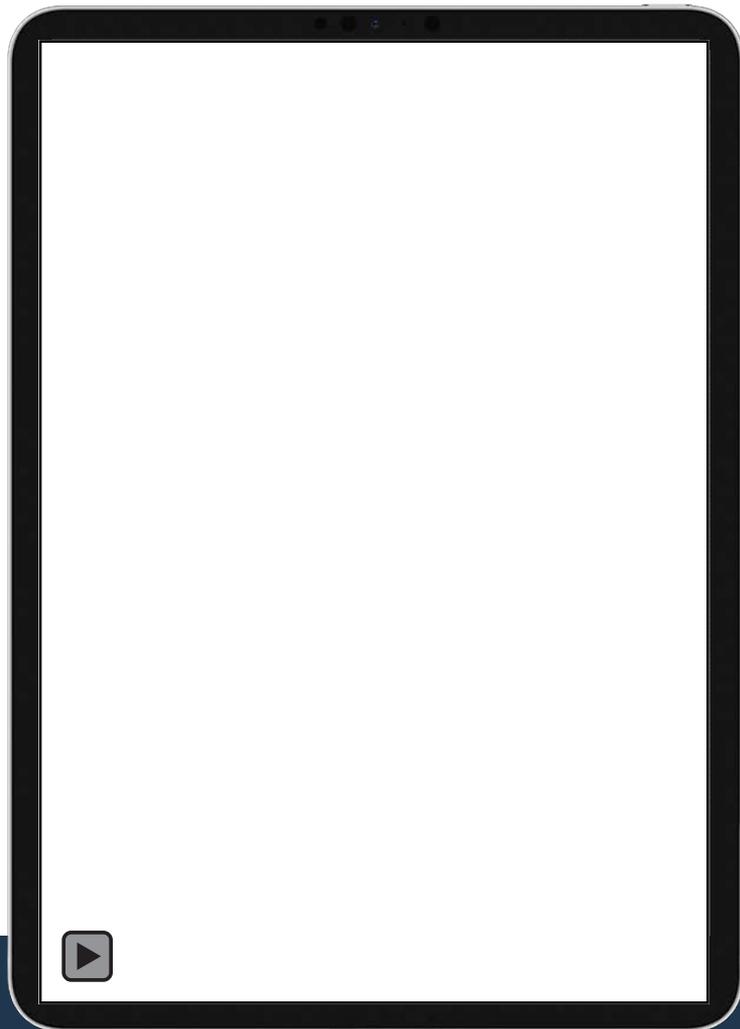
B) 1911040648

C) 1911081703

D) SR-1200 1400-SS

E) TEMPORARY SEGREGATED AREA FOR UNMANNED

**AIRCRAFT VEHICLE FLYING ACTIVATED WI 403935N
0030600W, 403929N 0030541W, 403954N 0030514W,
403952N 0030508W, 403924N 0030522W, 403914N
0030520W, 403907N 0030553W, 403843N 0030546W,
403857N 0030519W, 403925N 0030504W, 404013N
0030436W, 404111N 0030408W, 404213N 0030325W,
404230N 0030306W, 404247N 0030248W, 404307N
0030301W, 404246N 0030342W, 404127N 0030439W,
404016N 0030526W GUADALAJARA/ZONE 1**



FUTURE INNOVATIONS

Closed Runway Warnings in Flight Plan

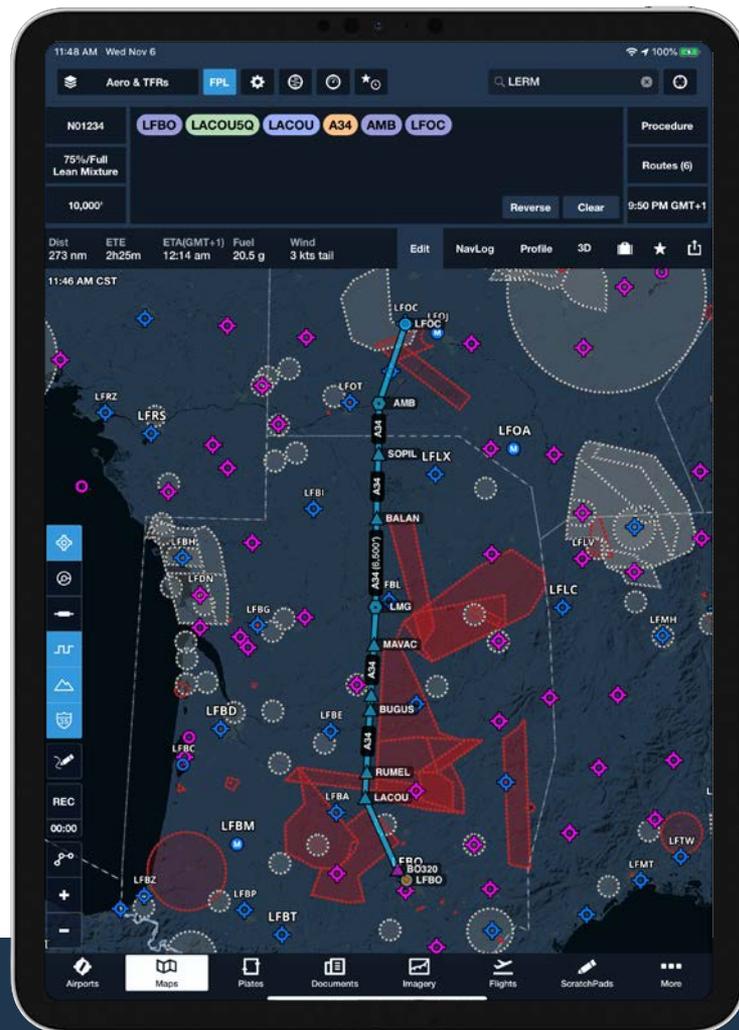
- Proactively warn pilots when airports in their route have closed runways by adding a red alert icon within the flight plan editor.



FUTURE INNOVATIONS

Route-Based Warnings

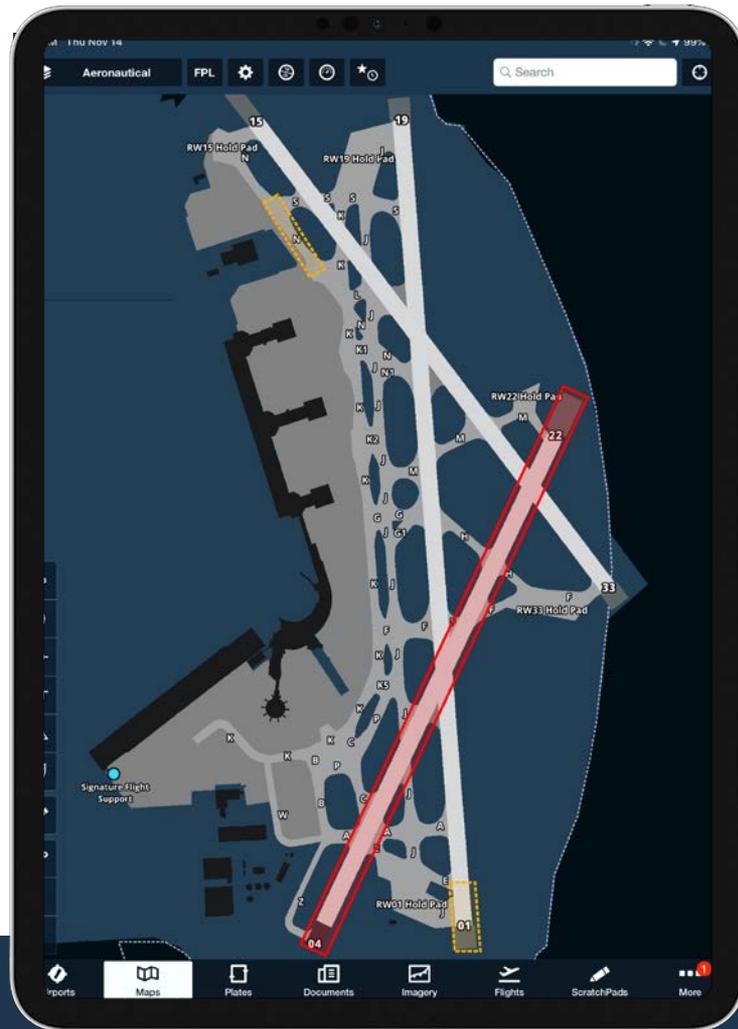
- Integrate our Graphical NOTAM database with our flight planning engine to display NOTAM information based on a planned route.
- This could include warnings for those which could be potentially dangerous.



FUTURE INNOVATIONS

Graphical FAA NOTAMs

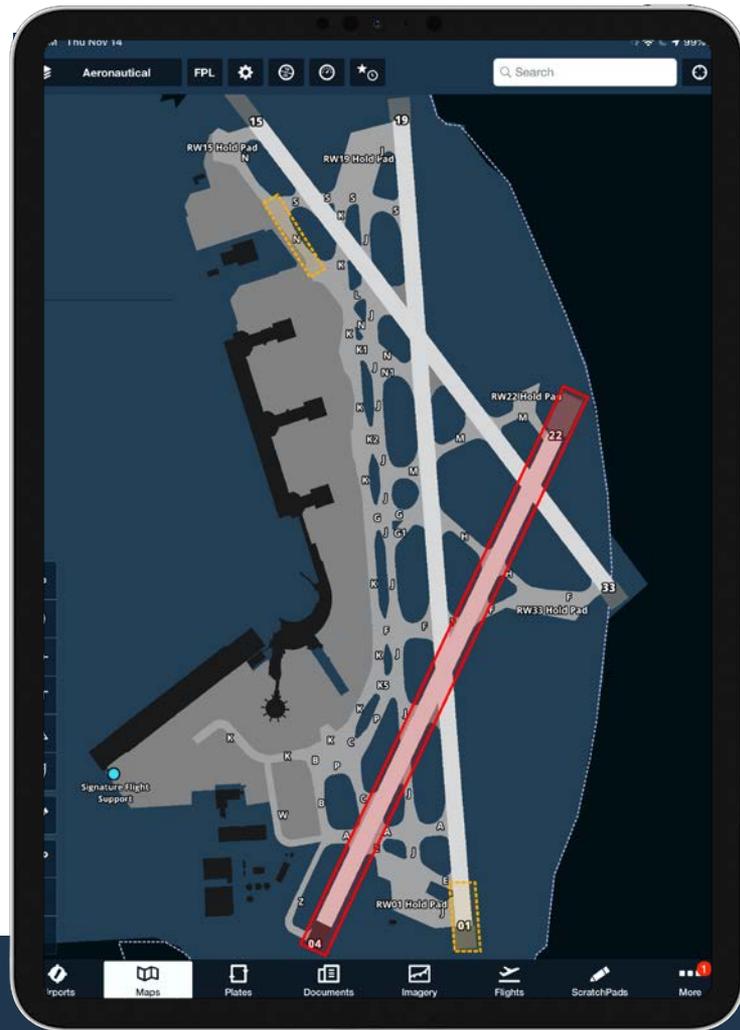
- Automatically parse and display FAA NOTAMs on the map



FUTURE INNOVATIONS

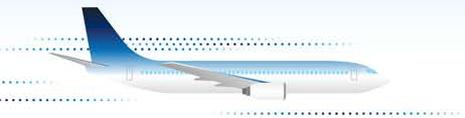
Graphical FAA NOTAMs

- Automatically parse and display FAA NOTAMs on the map
- Example: extract runway/taxiway shapes from ForeFlight's in-house airport diagrams and match them against FAA NOTAMs to graphically display runway/taxiway closures.





Thank You

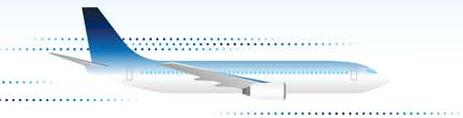


Did you know...

You can sort & filter NOTAMs today?

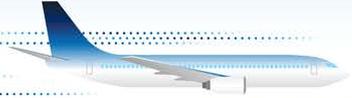
- Yes, and I do it all of the time
- No, but I can't wait to learn how





FAA Data Demonstration Showcase

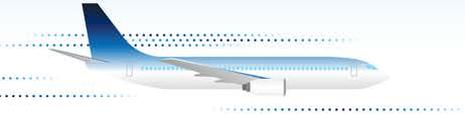




Hoon Kang & Vinod Vallikat

NOTAM Search & NOTAM Distribution Service





FNS NOTAM Search

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- Web-based application accessible by standard browsers
- Human interface for NOTAMs **and** publicly accessible
- Pre-flight briefing information available for GA and airline pilots
- Data sorting and filtering capabilities
- **Supports multiple queries:** Location, accountability, flight path, lat/long, free text search and archive search, customized search



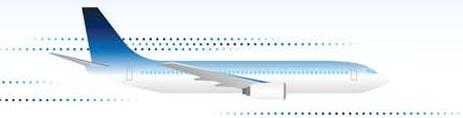
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FNS NOTAM Distribution Service (NDS)

- Machine interface for NOTAMs
 - NDS request/response: Web service
 - NDS publish/subscribe: Java Messaging Service (JMS)
- Message payload in AIXM 5.1 (Global Exchange Model)
- NOTAMs are distributed over FAA's SWIM infrastructure
- Users include DoD and numerous other commercial customers
- FNS NDS is also now available in the cloud (SCDS - SWIM Cloud Distribution Service): Supports NDS publish/subscribe and quick on-ramping (self-service)





DEMO

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DATA OPTIMIZATION
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NOTAM Search Demo

Demonstrate various query capabilities available in NOTAM Search application:

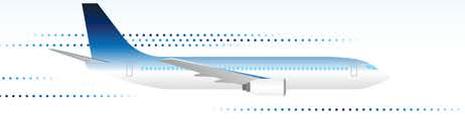
- Basic location based query, sorting & filtering, geography/radius search, flight path query, free text query, pre-defined queries, archive search

NOTAM NDS Demo

- SCDS website and how to request access
- NDS SCDS NOTAM pub/sub interface
- FNS NDS sample message



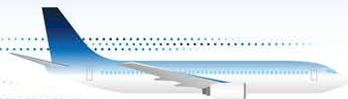
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Melissa Matthews & Damon Thomas

*System Wide Information Management
(SWIM) Cloud Distribution Service*





SCDS Demo

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SCDS SUPPORT ? | SIGN IN ▶

SWIM Cloud Distribution Service

Subscribe to SWIM data products and monitor your data feeds in real-time

[GET STARTED](#)

Available Products

- STDDS**
SWIM Terminal Data Distribution System (STDDS) provides surface movement data (ASDE-X, ASSC), approach surveillance radar data from STARS systems, Runway Visual Range (RVR), and a variety of departure event data.
- ITWS**
Integrated Terminal Weather System (ITWS) includes a variety of weather information in graphic and textual forms from 30+ sites.
- TFMS**
Traffic Flow Management (TFMS) provides both flight data (Flight Plans, Departure/Arrival Notifications, Position Reports) and flow information (TMI, GS, GDP).
- TBFM**
Time Based Flow Management (TBFM) metering information data includes knowledge of when metering is in effect at an ARTCC when Adjacent Center Metering (ACM) is occurring and at which sites, flight Scheduled Time of Arrivals (GTAs) to the runway threshold, meter fix and all arcs, flight Estimate Time of Arrivals (ETAs) to the runway threshold, etc.
- FDPS**
SWIM Flight Data Publication Service (SFDP) provides a variety of En Route flight data, such as flight plans, beacon codes, and handoff status. SFDP also disseminates data regarding airspace, such as sector configuration data, route status, Special Activity Airspace (SAA) status, and altimeter settings, and general data including ERAM status information.
- AIM FNS**
Notices to Airmen (NOTAMS) provides information on temporary changes to components of, or hazards in the National Airspace System (NAS) and are distributed by the FAA to alert the aviation community.



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Total Users 199

User Status

Approved & Connected

35

Approved & Not Connected

134

No Subscriptions

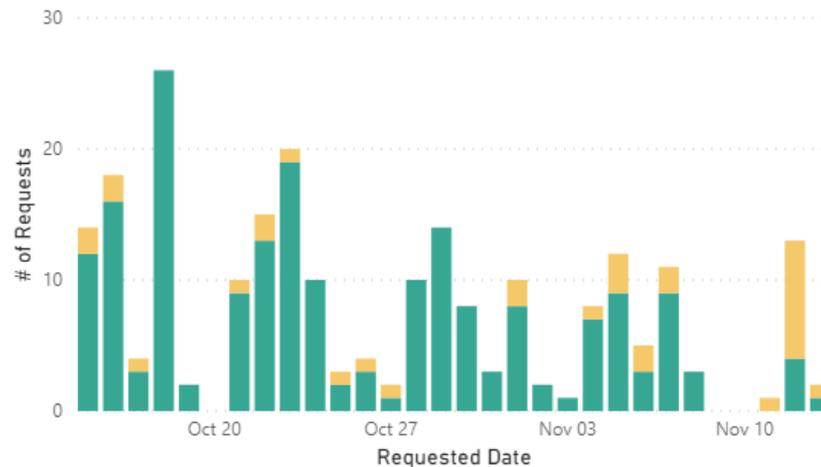
10

Pending

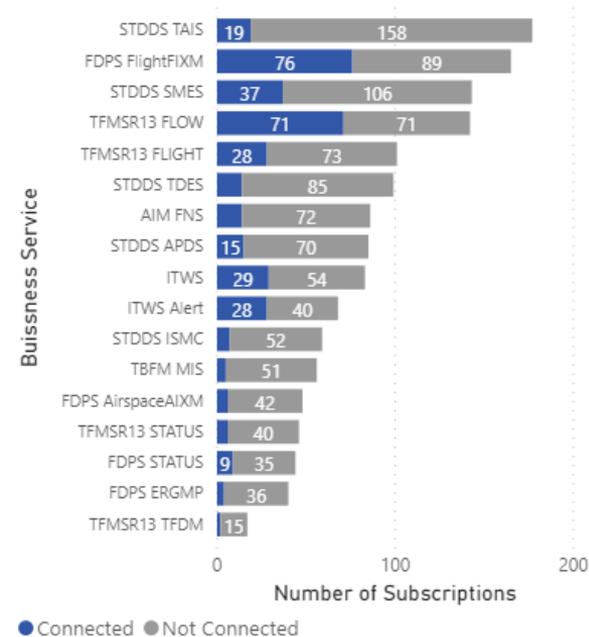
20

Subscription Requests

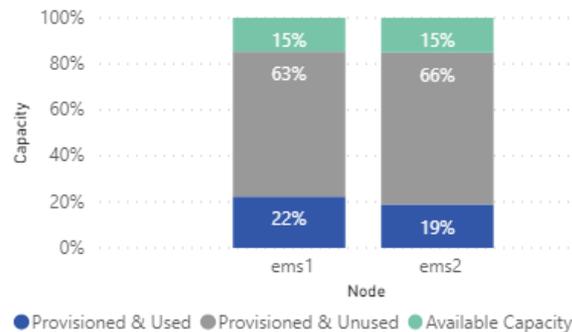
status ● APPROVED ● PENDING



SCDS Business Service Usage



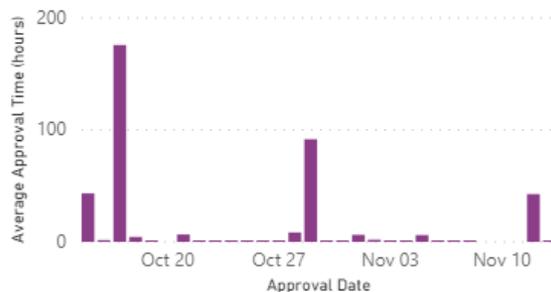
SCDS Capacity



Median Approval Time (Minutes)

13.20

Average Approval Time (Hours)



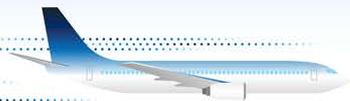
Total Subscriptions



Egress Data Rate



SCDS Status Report 11/13/2019 3:57:56 PM



SCDS Website

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scds.swim.faa.gov



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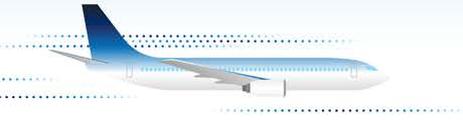
SWIM Industry-FAA Team (SWIFT)

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A Partnership with industry to bring together operations, business, and technical minds to better leverage NAS Information Services that drive tangible operational improvements and innovation.



Federal Aviation
Administration



Melissa Matthews & Mark Strout
NAS Common Reference (NCR)
Case Study: System Development with
Aeronautical Data



SWIM NCR Service Concept

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DATA OPTIMIZATION
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➤ Service Overview

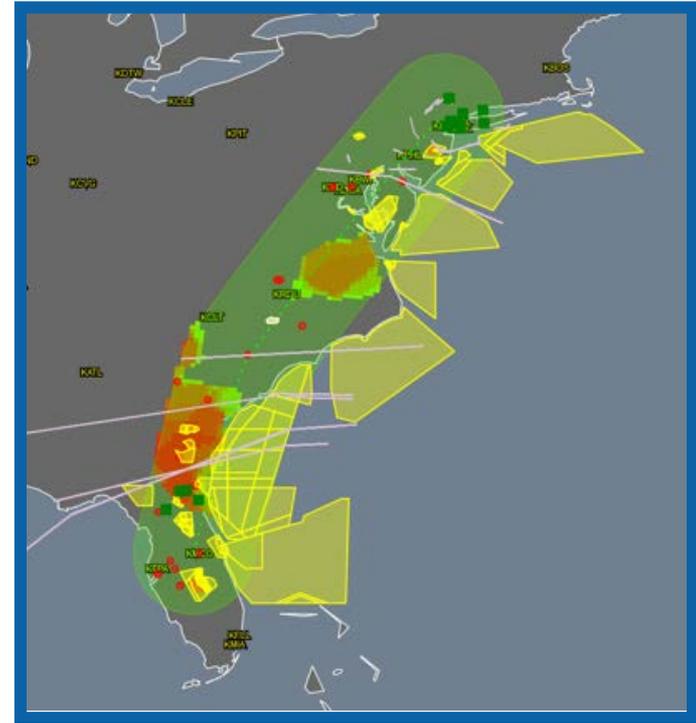
- Enables access to data published by multiple SWIM producers with a single request (“query”)
- Flexible and standards-based combinations of geospatial, temporal, and attribute filters for customizing queries

➤ Core Functionality

- Consumes and parses data from multiple SWIM producers, and imports message features into GIS-enabled database
- Retrieves features matching filters specified in user queries

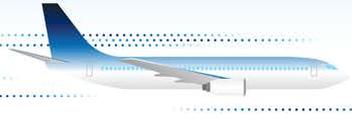
➤ Business Need – aeronautical data

- Complex, value-add processing required to make NOTAMs and other aeronautical data query-able to NCR users



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NCR and NOTAMs



➤ AIM FNS service has improved user experience with NOTAM data, though several pain points in processing NOTAMs remain

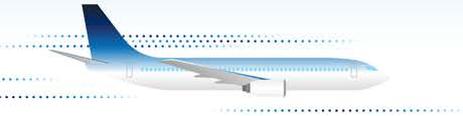
- NOTAM matching
- Geo-referencing TFRs from NOTAMS
- SAAs activated/deactivation via NOTAMS
- Deriving precise locations and altitudes
- Content varies across sources of NOTAMS
- Ambiguous message field meanings (e.g., scenario code)



➤ Our demo will highlight some of these challenges

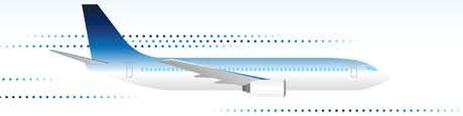
➤ **Key takeaway:** Continuing to standardize NOTAM generation will improve quality of information, enabling users to make better sense of data





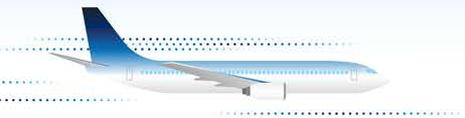
NCR DEMO





Poll: Where's your favorite vacation spot?



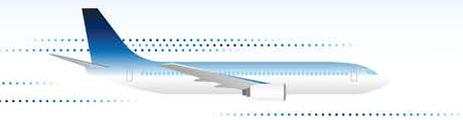


Help Shape the Future: Shared Ideation

Jose Alfonso

Deputy Director, Aeronautical Information Services





Ideation Directions

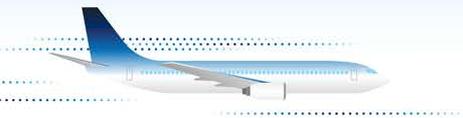
Virtual Participants:

- Follow the prompts in Slido at Slido.com, #DataOpSummit

In-Person Participants:

- Table 1 and 2: Station A
- Table 3 and 4: Station B
- Table 5 and 6: Station C
- Table 7 and 8: Station D
- Table 9 and 10: Station E
- Table 11 and 12: Station F



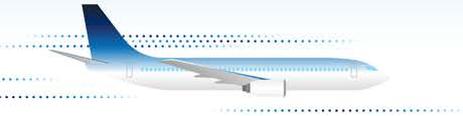


FAA
DATA OPTIMIZATION
SUMMIT

BREAK
RETURN AT 3:30

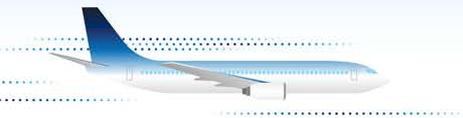


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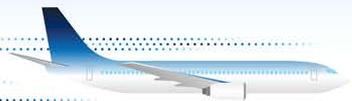
Open Forum





Where Do We Go From Here?





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SUMMIT

Connect with us at:

**[HTTPS://WWW.FAA.GOV/NEWS/CONFERENCES_EVENTS/DATA
OPTIMIZATION SUMMIT/](https://www.faa.gov/news/conferences_events/data_optimization_summit/)**

Email us at:

AIS-NOTAM@FAA.gov



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