SWIM Users Forum

Presented by:

FAA SWIM Program Office

May 28, 2020

System Wide Information Management
AJM-316

Federal Aviation Administration

Welcome!

Optional ways to engage during the webinar

As a webinar attendee you should see a toolbar at the bottom of your screen with the icons pictured below. Here's how and when to use each option.

Raise Hand: Click the "**Raise Hand**" icon in your menu bar (see image below) to ask a question **verbally**. The moderator will be alerted and will unmute you so you may ask your question.

Q&A: Click the "**Q&A**" icon in your menu bar (see image below) to submit a question via **text**. The moderator will be alerted and will read your question aloud on your behalf or respond to you via text.

Chat: Click the "**Chat**" icon to send a chat message to the host.

Agenda

1. Welcome
Melissa Matthews

2. SFDPS
Melissa Matthews

3. STDDS
Cora Buck and Julia Korey

4. SCDS
Damon Thomas

5. NCR
Damon Thomas and Ramesh Ravella

6. AIM/FNS
Brian Love

7. Closing Remarks
Kristin Cropf, SWIM PM

SWIM Flight Data Publication Service (SFDPS)

SFDPS Data Issue

Presented by:

Melissa Matthews

SWIM Capabilities Lead

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SFDPS Data Issue

- SFDPS was delivering a small number of flight plan messages to external consumers that should not have been received outside of the NAS environment

- A temporary resolution has been implemented which discontinues the publishing of HZ messages to external consumers

- HZ messages are produced by the 148 Standard Terminal Automation Replacement System (STARS) systems located near major airports and contain aircraft position reports (tracks) updated once a minute

SFDPS Data Issue

- For users wanting STARS track messages, a better source of the STARS track data can be found by subscribing to the STDDS Terminal Automation Information (TAIS) service
  - A service description of the TAIS track and flight plan data can be found on the NSRR under service documents NAS-JMSDD-4307-004 TAIS JMSDD Rev C.pdf

- To find more detailed information on the HZ message type:
  - A description of the HZ and HZ_FIXM can be found on the NAS Service Registry and Repository (NSRR) at https://nsrr.faa.gov/sites/default/files/enroute-ad-pub-v2/SFDPS%20Data%20Consumer%20Reference%20Manual%20v2.1.4.pdf (page 78 and page 180)

- The HZ messages will be available when a permanent solution is implemented

SWIM Terminal Data Distribution System (STDDS)

Update on the Electronic Flight Strip Transfer System (EFSTS) Data in STDDS

Presented by:

Cora Buck

STDDS and SFDPS Program Lead

Julia Korey

Engineering Support

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STDDS Updates

R5

- Technical refresh of hardware at all 38 STDDS TRACON sites

- Deployment completed at 37/38 sites. Anchorage, AK (A11) R5 upgrade and ASSC IOC postponed under travel moratorium

R6

- Timeline:
  - Key Sites: Early 2021
  - Deployment: Spring/Summer 2021

- Resources (NSRR):
  - Draft Schema
  - Draft JMSDDs/WSRD
  - Release Notes

STDDS Announcement

- **STDDS TDES publishes data from the EFSTS and TDLS systems**
  - EFSTS currently provides the start taxi (at some airports) and departure events
- **EFSTS data is being subsumed by FDIO/TFDM**
  - When TFDM is deployed at each site, EFSTS/FDIO data will be published to SWIM via TFDM, replacing the STDDS feed
  - For some EFSTS sites later in the TFDM waterfall (~22) there will be a gap in SWIM availability of this data, from the end of the STDDS feed to the start of the TFDM feed
- **Suggested work-arounds:**
  - For ASDE-X/ASSC airports, the SMES events provide similar data
  - Start taxi = SMES spotout
  - Departure = SMES off

STDDS Announcement Next Steps

- **More info will be forthcoming via email and NSRR blasts**

- **STDDS welcomes feedback on the impact of this change**
  - A survey will be emailed to registered TDES users
  - Or we welcome feedback at swim@faa.gov

SWIM Cloud Distribution Service (SCDS)

NESG User Transition to SCDS

Presented by:

Damon Thomas

SWIM Implementation Lead

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NESG user transition to SCDS

Existing NESG Users designated to transition to SCDS were notified on March 13, 2020. All communications will continue to come from SCDS@faa.gov

- Users have 90-days to set up SCDS connections prior to being disconnected from the NESG. **Deadline: June 15, 2020**
  - Reminders were sent to users on April 16, 2020 and May 19, 2020
- Upon request your SWIM SE POC can provide a list of your current NESG data subscriptions. This should be the same data that you request on SCDS (requests to any new data sets will require you to sign the corresponding Access Agreements).

Note: Please check your Spam folder and if found, mark emails from SCDS@faa.gov as not Spam for future communications.

Contact Information

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SCDS On-Boarding Team

SCDS@faa.gov

[SCDS Website](#)

NAS Common Reference (NCR)

NCR Status

Presented by:

Damon Thomas

SWIM Implementation Lead

Ramesh Ravella

Senior Systems Engineer

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Agenda

- NAS Common Reference (NCR) Overview
- NCR Architecture
- Interfacing with NCR
- NCR Data
- NCR Users
- Program Status
- Next Steps

NAS Common Reference (NCR) Overview

- NCR is a NAS Program that provides SWIM Services for parsing, storing, and correlating NAS data
  - Ingests data from multiple SWIM producers across NAS domains, such as aeronautical, weather, and traffic flow management
  - Applies constraints from above to the proposed trajectories (in 2D, 3D or 4D) from authorized consumers and validates the trajectories
  - Performs data transformations, such as translating between units of measure and coordinate reference systems (CRS)
  - Provides flexible combinations of geospatial, temporal, and attribute filters for users to tailor requests ("queries") for correlated subsets of NAS data

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NCR Overview (Cont'd)

- NCR uses Service Oriented Architecture (SOA) services and NAS Enterprise Messaging Service (NEMS) to interface with producer systems and authorized NAS and Non-NAS consumers using SWIM compliant infrastructure and interface standards.

- NCR uses FAA Telecommunication Infrastructure (FTI) for data transport.

- NCR interfaces with the following NAS producer systems:
    - Aeronautical Common Services (ACS)
    - Traffic Flow Management System (TFMS)
    - Common Support Services – Weather Systems (CSS-Wx)
    - SWIM Terminal Data Distribution System (STDDS)

- Note:
    - TFMS and STDDS will be in Version 1.0
    - ACS in Rel 1.1
    - CSS-Wx not available during 1.1 development; National Weather Service (NWS) feeds will be used in 1.1

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NCR System Architecture
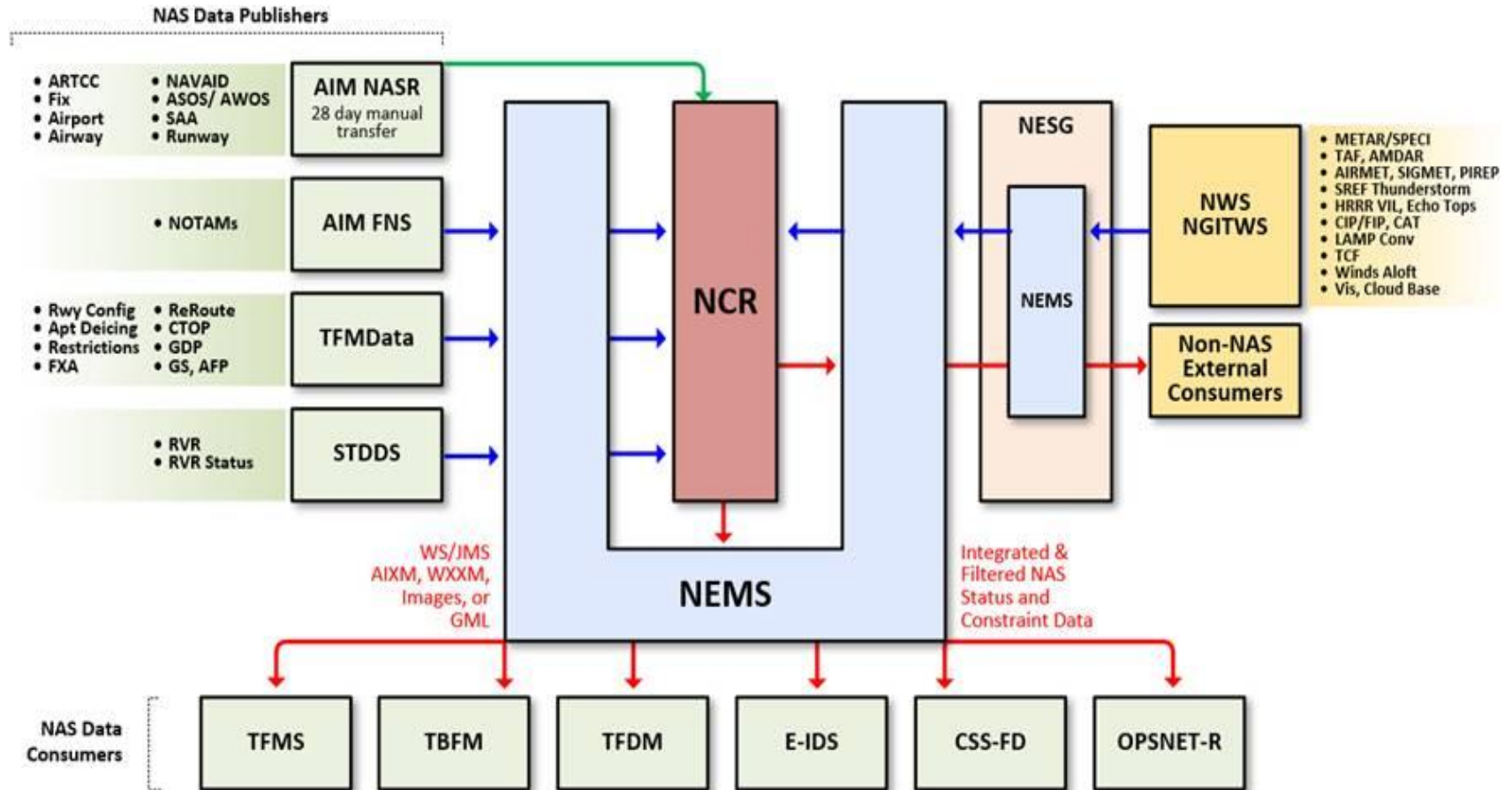
NCR Feature Types

Source	Feature Name		
TFMData Flow Information Service	Airspace Flow Program (AFP)		Ground Stop (GS)
	Approval Request (APREQ)* (available in TFMS Release 14)		Minutes-in-Trail (MINIT)
	Airport Configuration (APTC)		Miles-in-Trail (MIT)
	Collaborative Trajectory Options Program (CTOP)		Reroute
	Deicing (DICE)		Stop
	Departure Spacing Program (DSP)		Time-Based Metering (TBM)
	Flow Evaluation Area / Flow Constrained Area (FXA)		Advisory Text
	Ground Delay Program (GDP)		
Federal NOTAM System – NOTAM Distribution Service (FNS-NDS)	Notice to Airmen (NOTAM)		
National Airspace System – Resources (NASR)	Special Activity Airspace (SAA) Definitions and Schedules		
Standard Terminal Data Distribution Service (STDDS) APDS	Runway Visual Range (RVR)		
STDDS ISMC	APDS Status		
NASR + FNS-NDS	Active SAA (SAA Schedules + Changes made via NOTAMs)		

Interfacing with NCR

- NCR supports two main query types:
  - <u>Route</u>: user submits route string or 3-D/4-D trajectory with optional spatial buffer, and NCR returns features that overlap with the route in space/time
  - <u>General</u>: user submits geometry (e.g., circle, polygon) and NCR returns features that overlap with geometry in space/time
- For a one-time query, a Web Feature Service (WFS) returns matching features in textual format (GML), and a Web Map Service (WMS) returns matching features as image

- For a subscription, a Java Messaging Service (JMS) returns the source messages in AIXM or WXXM format pertaining to matching features
  - User may also retrieve source messages via the NCR XM Service
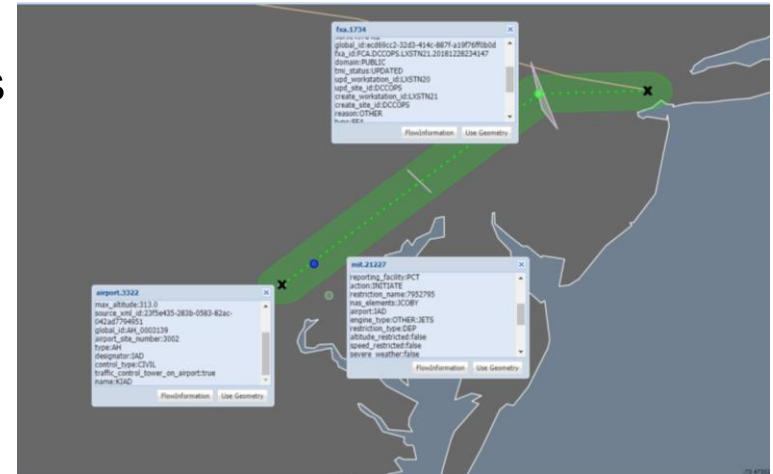
NCR Data Profile

- No sensitive data
  - NCR consumes publicly available non-sensitive data from NAS producers
  - NCR outputs non-sensitive data as responses to user requests

NCR User Profile

- Potential Internal NAS Consumers:
  - TFMS, TBFM, TFDM, CSS-FD, E-IDS, OPSNET-R
- External Consumers:
  - AOCs/FOCs/GA, Industry, Academia, Research partners
- All consumers are authorized by SWIM PO before being on-ramped to NCR
- Consumers are authenticated by NEMS before their requests are passed to NCR

NCR Program Status

Milestone	Status
Requirements	Completed
Software Design	Completed
Software Development	Completed
System Test	Completed
Operational Test	Completed
Training Operational Tryout at ATL	July 2020
First Course Conduct for Operators	July 2020
Site Installation at ATL and SLC	August 2020
Initial Operational Capability (IOC)	September 2020 (tentative)

Next Steps after IOC

- After IOC version 1.0, plans are afoot for developing Release 1.1, which will contain:
  - Aeronautical Common Services (ACS) constraints for trajectory validation
  - National Weather Service (NWS) weather services constraints
  - Data visualization tool on SWIM Cloud
  - Enhanced 4-D trajectory algorithm
  - Interface with CSS-FD prototype
  - Deferred requirements

- Rel 1.1 to be deployed by September 2021

Signing Up

If you would like to sign up for NCR services,

Please send an email to:

swim@faa.gov

Aeronautical Information Management (AIM)

Federal NOTAM System (FNS) Update

Presented by:

Brian Love

Engineer

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Federal NOTAM System (FNS)

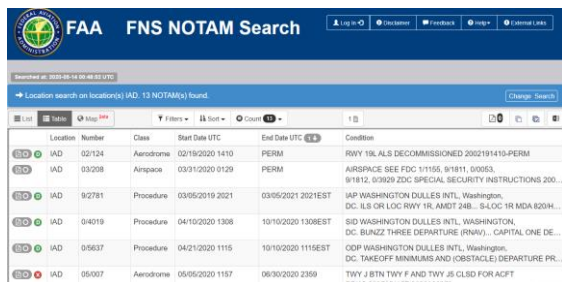**FNS provides an ecosystem of web applications and web services for the origination, management, and distribution of Notices to Airmen**
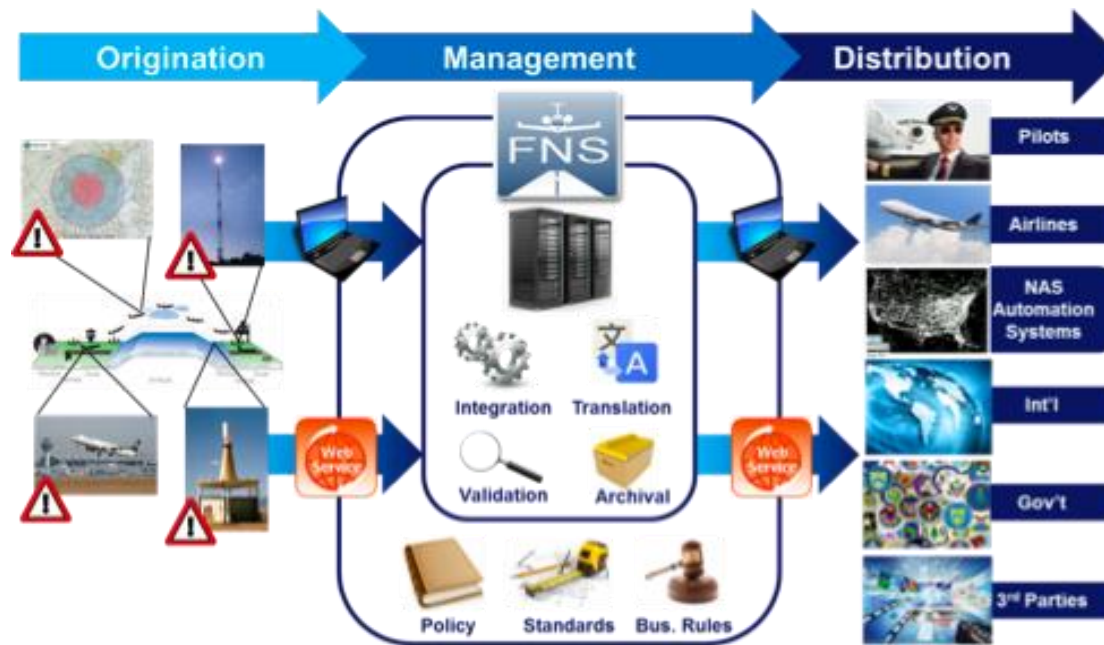
Updates today on upcoming improvements to NOTAM distribution over SWIM

Summer 2020 FNS Updates

FNS Release 2.17 highlights improved functionality for NOTAM Consumers

Supports FAA NOTAM modernization strategy to achieve a single human-interface and a single machine- interface for NOTAMs in alignment with FAA Reauthorization legislation

NOTAM Search

- NOTAM Search History
- User Interface Enhancements
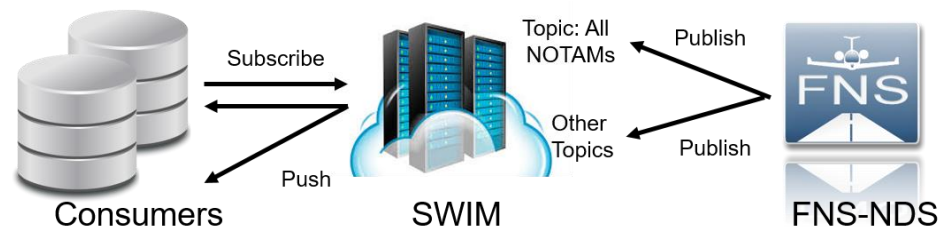
NOTAM Publication Service

- Reduced latency
- Improved availability
- NOTAM Sequence IDs
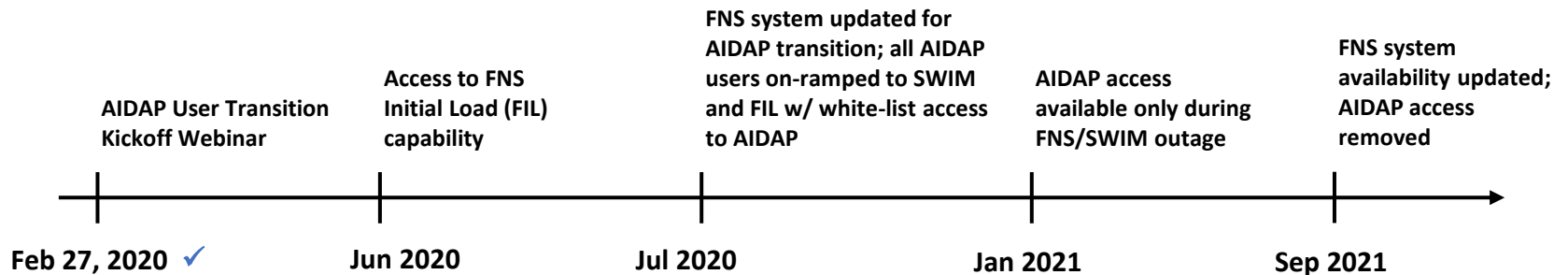
AIDAP transition to FNS

Legacy AIDAP web service will be retired and users are being transitioned to FNS over SWIM to support the FAA Reauthorization objective of a single machine-interface

All external AIDAP users:
- should transition to use FNS on SWIM
- can retain full access to AIDAP beyond July 2020 by establishing a SWIM connection
- access to AIDAP will be restricted to backup use only in 2021
- will have their AIDAP account retired at some date TBD

Each AIDAP user will be transitioned to both:
- the SWIM NOTAM Publication Service (NPS) - a JMS pub/sub stream of NOTAMs, and
- a new FNS capability that provides an active NOTAM baseline or FNS Initial Load (FIL)

| AIDAP User Transition Kickoff Webinar	Access to FNS Initial Load (FIL) capability	FNS system updated for AIDAP transition; all AIDAP users on-ramped to SWIM and FIL w/ white-list access to AIDAP	AIDAP access available only during FNS/SWIM outage	FNS system availability updated; AIDAP access removed
Feb 27, 2020 ✓	Jun 2020	Jul 2020	Jan 2021	Sep 2021

FNS Initial Load

The FNS Initial Load (FIL) capability allows users to create a baseline of all active NOTAMs in the NAS

Users can access FIL data at any time

FIL data contains a baseline of active NOTAMs to:
- initialize a database with a set of active NOTAMs or
- validate the integrity of a database of active NOTAMs

FNS Initial Load

Service Protocol:
Secure FTP
Output:
AIXM 5.1 format
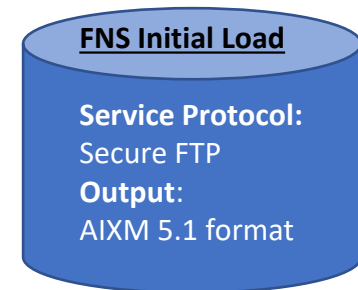
FIL data will be accessed through Secure FTP using simple authentication

FIL data:
- will include all NOTAM types: Domestic, FDC, Military, International, Local Military
- will not contain canceled or expired NOTAMs
- will be updated periodically

Timeline
- Test interface available by June 2020
  - will provide operational NOTAM information

- Production interface available July 2020

SWIM NDS service

FNS also supports a NOTAM request/response web service over SWIM, the NOTAM Distribution Service (NDS)

Service is in operational use today however is not currently scalable to support a significant number of new users without impacting existing users

Currently FAA/AIM is *not* onboarding new users to operational NDS
- Working to increase the responsiveness of NDS for current and new users
- Unknown at this time when FNS NDS will be able to accept new users

FNS Contact Information

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FNS NOTAM Search website

Questions?

Next SWIM Users Forum
tentative date

August 13, 2020 at 2pm ET

SWIM@FAA.GOV

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Thank You

Questions? Email swim@faa.gov

Your feedback is important to us!
SWIM Events Feedback Form

- Scan the QR Code using the camera on your mobile phone
- Select the link that at the top of your phone screen
- Share your feedback in 3 minutes or less
- Thank you!