

SWIM Users Forum

Presented by:
FAA SWIM Program Office
March 5, 2020
Washington, DC

SWIM@FAA.GOV
Communications, Information and Network Programs



Federal Aviation
Administration

Instructions for Remote Participants

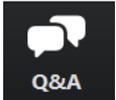


Call +1-571-302-4908

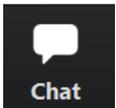
Enter Meeting ID: 160-831-5765#

OR use your computer audio

Note: You will automatically be muted



Use the Q&A box to ask questions



Use the chat box to send a message to all participants or just the host.

Note: The slide deck will be posted to the [SWIM Users Forum Website](#)

Agenda

Welcome

Melissa Matthews, SWIM PM

SCDS On-Boarding

Cindy Adamskyj

SWIFT

Xavier Pratt & Ray Mitchell

NSRR

Mark Kaplun

NCR

Mark Strout

Engaging with SWIM

Cheryl Jackson

SWIFT:
SWIM Industry
Collaboration
Status Update

Presented by SWIM
Industry-FAA Team

SWIM@FAA.GOV

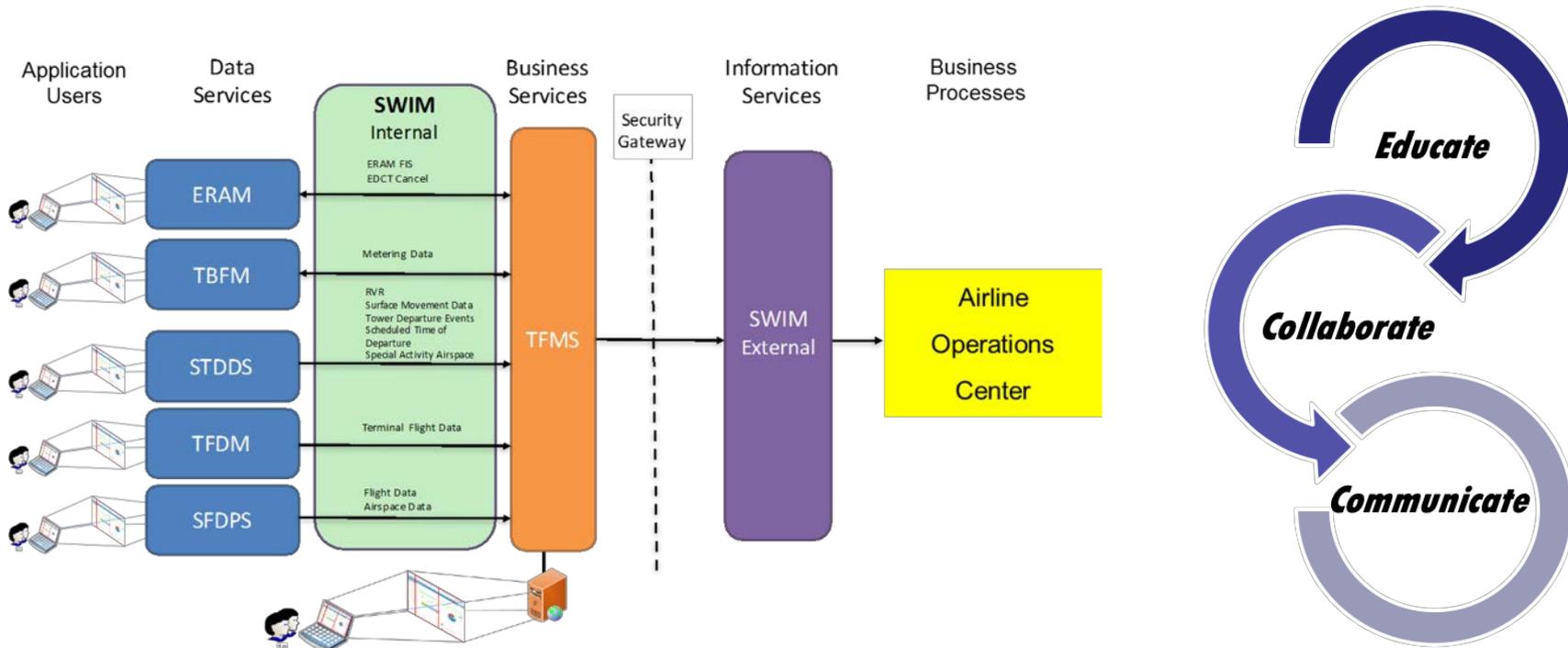
Communications, Information and Network Programs



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SWIM Industry FAA Team (SWIFT)

- SWIFT addresses industry recommendation to:
 - Establish a community forum that acts as a single environment for collaborative engagement around NAS information and data sharing
 - **Educate:** Synchronize community on information services
 - **Collaborate:** Discuss issues most relevant to community
 - **Communicate:** Inform community about SWIM & NAS programs





Stakeholders

Airspace Users



Airport/Airspace Authorities



Standards Bodies



Professional Associations



Government

Vendors to Industry/Government



Who is Sitting Next to You at SWIFT #9?

Attendee Organizations

45 
Airline Industry

24 
Government

18 
Support Organization

52 
Vendor to Industry

Attended a SWIFT Meeting Before?

58 
Hi I'm New Here

87 
I'm a Veteran!

145 Attendees

SWIFT



SWIFT Focus Group: Operational Context & Use Case Documents

Update on Focus Group

Ray Mitchell, LS Technologies

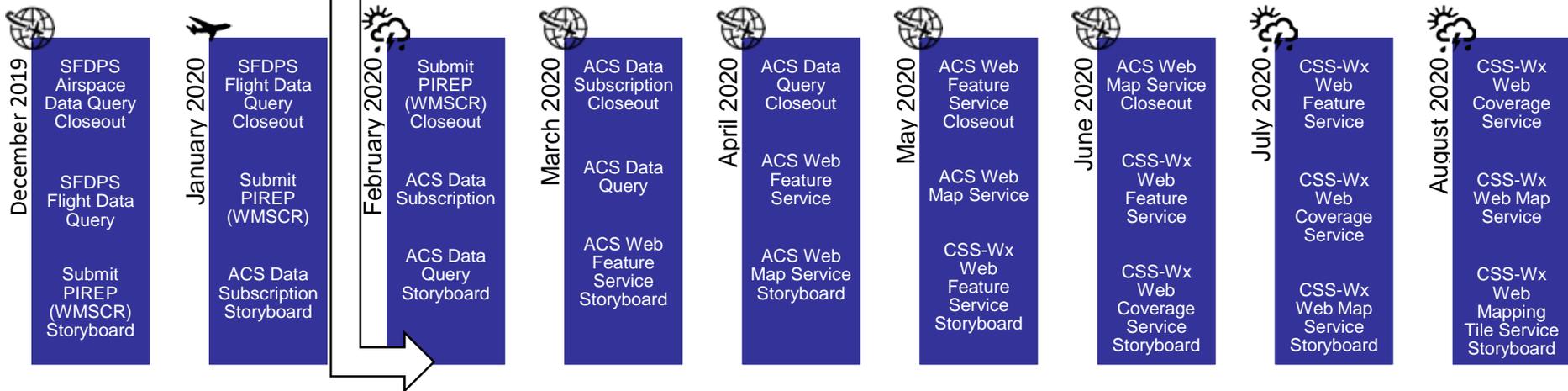
Operational Context Documents Produced

 <i>Surveillance</i>	 <i>Aeronautical</i>	 <i>Flight/Flow</i>	 <i>Weather</i>	 <i>Status</i>
STDDS TAIS  DELIVERED	SFDPS Airspace  DELIVERED	TFMS Flow  DELIVERED	ITWS  DELIVERED	TFMS Status  DELIVERED
STDDS SMES  DELIVERED	FNS NDS  DELIVERED	TFMS Flight *  DELIVERED	STDDS APDS  DELIVERED	STDDS ISMC  DELIVERED
SFDPS Flight  DELIVERED	DCNS DLD  DELIVERED	TBFM MIS  DELIVERED	WMSCR Submit PIREP  UNDER REVIEW	
	SFDPS Airspace Data Query  DELIVERED	STDDS TDES  DELIVERED		
	ACS Data Subscription  IN DEVELOPMENT	SFDPS General  DELIVERED		
		TFMData Request/Reply  DELIVERED		
		SFDPS Flight Data Query  UNDER REVIEW		

Focus Group will continue to develop documents as new SWIM services come online

Current Document Schedule

OCB – Ops Context Document, UCD – Use Case Document



- In June 2019 delivered final Use Case document, Use Case Focus Group will be suspended unless new services require documentation
- Began addressing Request/Reply services in late August
- Schedule subject to change if service updates are released and existing Operational Context documents need to be updated

Introducing New Focus Groups

Operational Issues Development & Analytics

Xavier Pratt, LS Technologies

Why Add More Focus Groups?

- **Many issues arise at SWIFT meetings do not get resolved by existing focus groups**
 - SWIFT has presented multiple case studies with proposed solutions that have either been not fully solved or implemented
 - Multiple requests for instructions how to build widgets, requests for help building capabilities with SWIM feeds, etc.

Operational Issues Focus Group

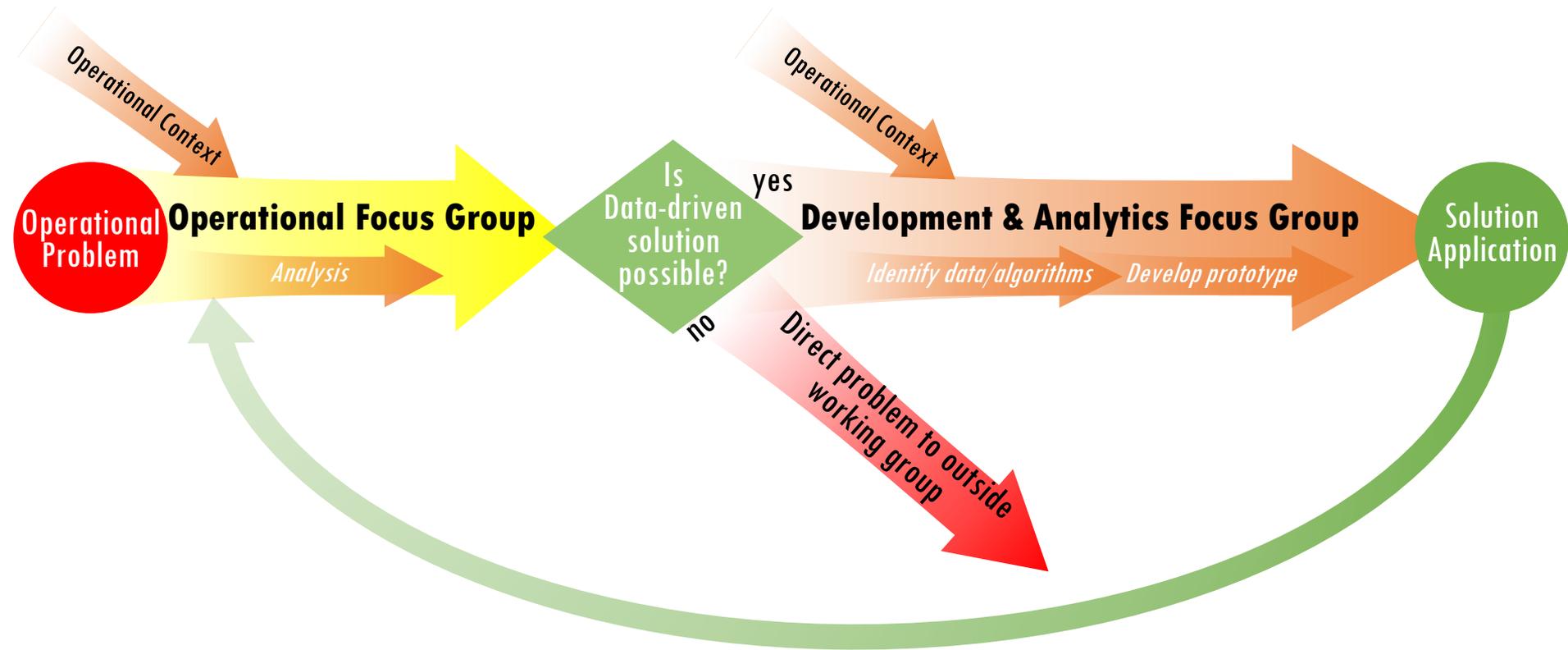
- **Goal: Address NAS-wide issues that are raised at the SWIFT that we never fully resolve**
 - Taxi-out return to gate, TBFM/TFMS interaction issues, Flight planning over IP, etc.
- **Requires input from other NAS programs/SMEs, focus group alone cannot solve these problems, but it can identify the main problems to bring up with other programs**

Development & Analytics Focus Group

Goals:

- **Democratize the widget building process**
 - Get input from focus group members about what problems they want to solve or capabilities they want to build/replace with SWIM
 - Previously SWIFT leadership would develop an idea and build a widget, not necessarily starting with an operational problem the group wants to solve first
 - NBAA AFP widget is a step in the right direction, but only developed for 1 stakeholder
- **Avoid requests for sharing code and teach users how to develop these capabilities on their own**
- **Move away from “widgets” and start building “instruction manuals” for SWIM-enabled capabilities that are technology agnostic**

Focus Group Solution Development



Interested in the SWIFT Focus Groups?

- **For more information please contact**
- **SWIFT SUPPORT POCs**
 - Ray Mitchell (ray.mitchell@lstechllc.com)
 - Xavier Pratt (xavier.pratt@lstechllc.com)
- **In addition to the NSRR, all SWIFT Documentation can also be found at:**
<https://connect.lstechllc.com/index.cfm/main/swifthome>

SWIFT Contact Information

Joshua Gustin, SWIFT Sponsor & Group Manager

- Communications, Information & Network Programs
- Email: Joshua.Gustin@faa.gov

Felisa White, SWIFT Chair & FAA Lead

- Phone: (202) 267-7994
- Email: Felisa.White@faa.gov
- Email: SWIFT@faa.gov



David Almeida, SWIFT Community Moderator

- Phone: (321) 735-2774
- Email: David.Almeida@LSTechLLC.com



SWIM NAS Common Reference (NCR)

Capability Review and Updates

Mark Strout

DOT Volpe Center

NCR Development Team Lead

SWIM@FAA.GOV

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Agenda

- NCR Overview / Refresher
- Interfacing with NCR
- NCR Release 1.0
- More Information

Interfacing with NCR

NCR supports two main query types

Query Type	User Request Contains	NCR Returns
Route Query	<ul style="list-style-type: none">• Route string or 2-D / 3-D / 4-D trajectory• Optional spatial buffer• Desired data layers	<ul style="list-style-type: none">• Features matching filter criteria in space/time along 4-D trajectory
General Query	<ul style="list-style-type: none">• Temporal, geographic (e.g., polygon), vertical, and/or scalar filter(s)• Desired data layers	<ul style="list-style-type: none">• Features satisfying all specified filters

For a one-time query, an OGC-compliant Web Feature Service (WFS) returns matching features in textual format (GML), and an OGC-compliant Web Map Service (WMS) returns matching features as image

- User can subsequently retrieve original source messages via the NCR XM Service

For a recurring subscription, a Java Messaging Service (JMS) returns the source messages (in AIXM or WXXM format) pertaining to matching features

- User can create, view, or modify their subscription(s) via the NCR Subscription Service

NCR Release 1.0

- Scheduled to enter production July 2020
 - ~20 feature types across aeronautical, TFM, and terminal data sources available for querying
 - Weather data will be available in a future release
- If interested in becoming a consumer, please send an email to swim@faa.gov
 - SWIM targeting limited number of users for Release 1.0
 - SWIM will provide consumer guide, starter kit, documentation, and other support to approved users

More Information

- NSRR
 - NCR ConOps and draft service documentation including WSRD, WSDDs, and JMSDD, are currently available
 - Updates to service documentation are forthcoming shortly
- Program Contacts
 - **Damon Thomas** (FAA SWIM Implementation Lead):
Damon.Thomas@faa.gov
 - **Ramesh Ravella** (SWIM Senior Systems Engineer):
Ramesh.Ravella@noblis.org
 - **Mark Strout** (Volpe Development Team Lead):
Mark.Strout@dot.gov

SWIM Cloud Distribution Services

On-Boarding Overview

Cindy Adamskyj
SWIM Engineering Lead

SWIM@FAA.GOV

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Agenda

SCDS On-Boarding Updates

Contact us

SWIM Cloud Distribution Services (SCDS)

- **SCDS is a publicly accessible cloud-based infrastructure dedicated to providing near real-time SWIM data to the public via Solace JMS messaging.**
- This service will include access to the same publicly available data that is currently offered via the NAS Enterprise Service Gateway (NESG) SWIM implementation.

The screenshot displays the SCDS New Subscription interface, which is divided into two main sections. The top navigation bar includes 'SCDS | New Subscription' and a user profile icon. The interface features a progress indicator at the top of each section, with steps 1, 2, 3, and 4. The first section, 'Select SWIM Product Type', is currently active and shows a list of product types with 'SELECT' buttons. The second section, 'TFMS - Choose Your Services', is also active and shows a list of services with checkboxes and 'SELECT' buttons.

Select SWIM Product Type
Select the type of SWIM data you would like to subscribe to. After selecting a type you will be able to choose specific SWIM services.

- 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. [SELECT](#)
- ITWS**
Integrated Terminal Weather System (ITWS) includes a variety of weather information in graphic and textual forms from 30+ sites. [SELECT](#)
- TFMS**
Traffic Flow Management (TFMS) provides both flight data (Flight Plans, Departure/Arrival Notifications, Position Reports) and flow information (TMI, GS, GDP). [SELECT](#)
- TBFM**
Time Based Flow Management (TBFM) metering information data includes knowledge of when metering is in effect at an ARTCC when Adjacent Center Metering (ADM) is occurring and at which sites, flight Scheduled Time of Arrivals (STAs) to the runway threshold, meter fix and all arcs, flight Estimate Time of Arrivals (ETAs) to the runway threshold, etc. [SELECT](#)
- FDPS**
SWIM Flight Data Publication Service (FDPS) provides a variety of En Route flight data, such as flight plans, beacon codes, and handoff status. FDPS also disseminates data regarding airspace, such as sector configuration data, route status, Special Activity Airspace (SAA) status, and altimeter settings, and general data including ERIAM status information. [SELECT](#)
- 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. [SELECT](#)

TFMS - Choose Your Services
Choose the SWIM services you would like to subscribe to. Multiple services can be added to a subscription.

- Status**
Status of all of the data flows that directly or indirectly contribute to all of the messages received and/or transmitted to SWIM.
- TFDM**
Terminal Flight Data includes data exchanges involving surface movement and flow management. This data flow provides target times for movement area entry, off block, and takeoff and the projected wheel-stop time. Note: this data is currently only available for ODM members.
- R13 Flight Data**
R13M for Initial Air Traffic Flow Data that consists of generated aircraft flight data information received from various NAS sources and international participants. It contains scheduling and routing data as well as positional information.
- R13 Flow Data**
All Traffic Management Initiative (TMI) definitions (Routes, Ground Stop (GS), Ground Delay Program (GDP), Unified Delay Program (UDP), Airspace Flow Program (AFP), Collaborative Trajectory Options Program (CTOP), Flow Constrained Area (FCA), Flow Evaluation Area definitions (FEA), Air Traffic Control System Command Center (ATSCC) advisories, Restrictions, Airport runway configuration and rates, Airport closing status, and Route Availability Planning Tool (RAPT) alternate data.

[BACK](#) [CANCEL](#) [NEXT: FILTERS >](#)



On-Boarding - What Do I Need to Do?

- **Review documentation and begin the on-boarding process**
 - On-boarding instructions and an [SCDS User Guide](#)
 - For additional assistance please contact SCDS@FAA.GOV

New Users SCDS is operational, visit scds.swim.faa.gov to create an account.

Existing Users Your SWIM SE POC can provide a list of data subscriptions that you are currently subscribed to, this will be the same data that you should request on SCDS (requests to any new data sets will require you to sign the corresponding Access Agreements).



NESG User Transition to SCDS

Update:

Existing NESG Users that are designated to transition will be notified the week of March 18, 2020. All communications will come from SCDS@faa.gov

- Users will have 90-days to set up SCDS connections prior to being disconnected from the NESG.
- 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.*

SCDS Governance (Subscriptions)

The FAA has developed an SCDS policy to preserve system resources and maintain accurate information on system usage.

This policy addresses the following:

Subscriptions Pending Approval

- Subscriptions in the “pending approval” status for more than 30 days will be deleted.
- Notification at 15 and 30 days, deleted after 1 additional week

Unused Approved Subscriptions

- Approved subscriptions that have not been connected in 60 or more days will be removed.
- Notification at 30 and 60 days, deleted 1 additional week.
- Contact the SCDS on-boarding team (scds@faa.gov) if you plan to use a subscription.

Note: If you have any subscriptions that are used as backup, please label your subscription as “backup”. If your planned use of SCDS is limited to a few times a year, please label your subscription as “occasional use”

SCDS On-Boarding Process



Create user account
<https://scds.swim.faa.gov>

Please use the same email address as your Access Agreement account, (step 3)
<https://data.faa.gov>



Create SCDS Subscription Requests and include any desired data filters

Subscription will enter a pending approval state while the system checks for a corresponding Access Agreement



Create an account or sign into your Data Access Account
<https://data.faa.gov>

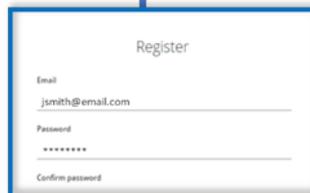
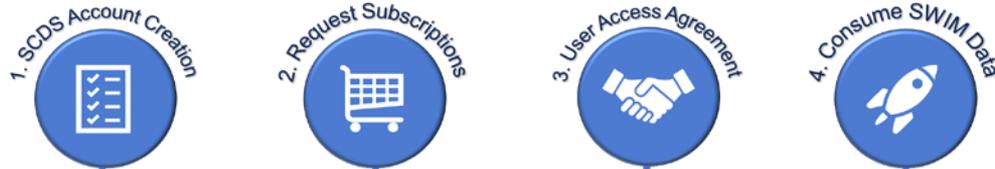
Complete Access Agreements for the SWIM JMS services requested via SCDS (*otherwise the subscription will be denied*)



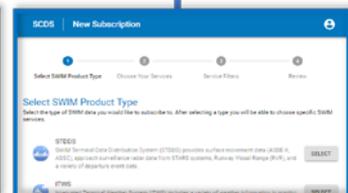
Subscription requests are reviewed, approval will be provided within 72 hours of request, and then provisioned automatically

Connect your consumer application to your approved SCDS subscription(s) and consume SWIM data

User On-boarding Instructions



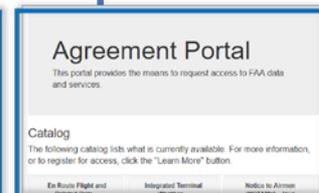
- **Create an SCDS account** <https://scds.swim.faa.gov>
- **Registration** Complete the form and click "REGISTER."
- **Update your account information** then click "SUBMIT."
- **Email verification** An email will be sent to the address provided on the previous page. Please validate the email address and click "SIGN IN."
- **Email confirmation** You will be taken to a page notifying you your email has been verified. Click "Back to Application."



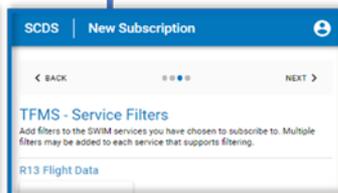
- **Subscriptions** Once logged in, you will be taken to the subscriptions page. From here, you can create new subscriptions and view subscription metrics.
- **Filters** Set up your data filters, multiple filters can be applied for one feed
- **Email verification** An email will be sent to notify the user of subscription Pending approval status
Subscriptions will only be approved for those services that have a corresponding signed Access Agreement.



- **FAA Data Access Account** Create an account on the FAA agreement portal <https://data.faa.gov/>
Ensure you use the same email address for both your SCDS account and your FAA Data Access Account



- **Access Agreements** Complete the Access Agreements for the SWIM JMS services to be consumed via SCDS <https://data.faa.gov/>
- **Current NESG Users Migrating to SCDS** Must sign access agreements for any new subscription requests



- **Approvals** Subscription requests are reviewed, approved within 72 hours of request and then provisioned automatically
- **Consume SWIM Data** Connect your consumer application to your approved SCDS subscription(s) and consume SWIM data
- **Current Users:** 90 Day window to on-board and disconnect from NESG following migration email notification from SCDS@faa.gov

Note: The FAA recommends Chrome or Firefox when accessing SCDS

SWIM SCDS Helpdesk Contact Information

- Enterprise Control Center (ECC) Contact Information:
- 855-FAA-NEMC (855-322-6362)
- Use option 3 for Enterprise Services then 1 for SWIM Services (24/7/365)
- 9-ATO-SECC-OPS@faa.gov

Please identify yourself as an SCDS user



SCDS Help Desk Contact Information



Help Desk support will be available to assist with any technical questions (connectivity and SCDS platform)

- Enterprise Control Center (ECC) Contact Information:
- 855-FAA-NEMC (855-322-6362)
- Use option 3 for Enterprise Services, then option 1 for SWIM Services (24/7/365)
- 9-ATO-SECC-OPS@faa.gov
- FAQ Page via the SCDS portal

For general SWIM Data questions, please email scds@faa.gov

Please identify yourself as an SCDS user.

We Want to Hear From You

Please take a few minutes to complete a brief SCDS User Survey. Your feedback will help us to plan for future growth, better understand user needs and help us continually improve SWIM services.

Use your phone to scan the barcode or [click here](#).



Note: This survey and other SCDS communications are sent from SCDS@FAA.GOV please ensure emails from this address are not going to your spam folder.

NAS Service Registry and Repository

Change Management and
Notification in NSRR

Mark Kaplun

SWIM Governance Lead

SWIM@FAA.GOV

Communications, Information and Network Programs



Agenda

1. Change Management: Provider Responsibilities
2. NSRR Supports Change Management
3. Change Notifications in the NSRR
4. System-Generated Notifications
5. Custom Notifications
6. Change Notification in Production
7. How to be Notified about Changes

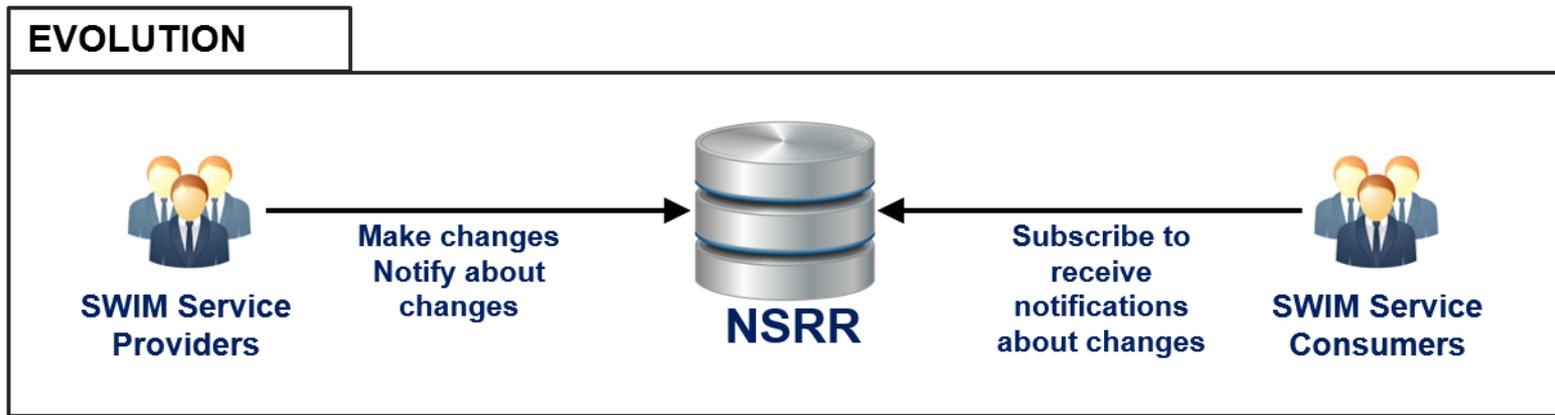
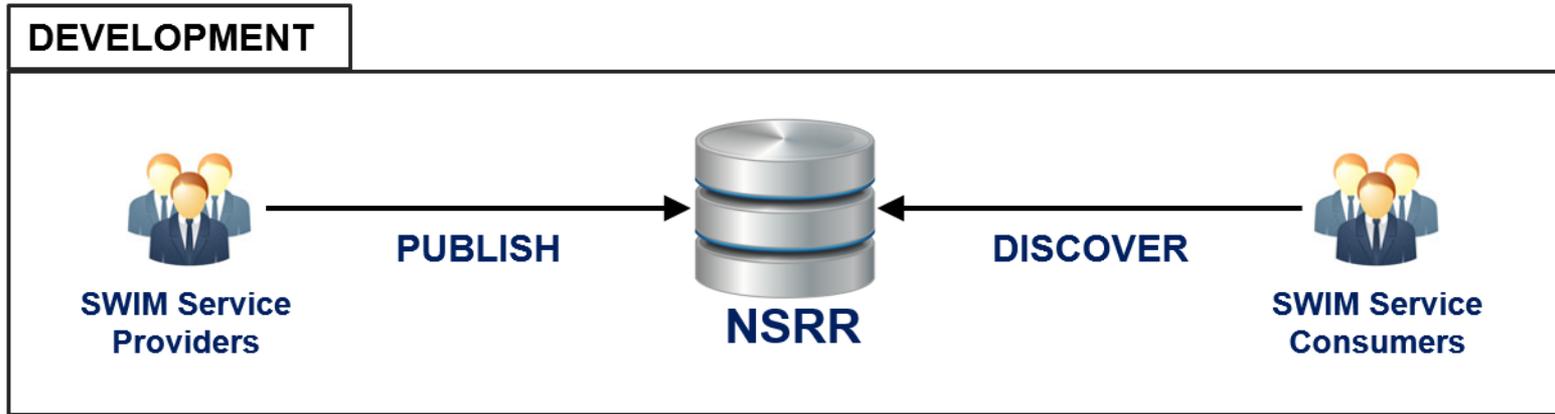
“Change is the only constant”

- After a service has been developed and made available for consumption, two things happen:
 - A service consumer develops a client to use the service as part of its business activities.
 - The service evolves over time and adapts to maintain its value to the business.

Change Management: Provider Responsibilities

- Analyze how changes will impact existing (and potentially future) service consumers.
- Communicate changes to consumers to avoid potential interruptions of interactions with services.
 - Notify the SWIM Governance and Engineering leads about planned modifications to the service.
 - Notify known service consumers about changes to the service.

NSRR Supports Change Management



Notification of Changes using NSRR

- Two types of notifications are initiated by publishers:
 - System-generated
 - Custom
- Email notifications are sent to subscribers about current and planned changes to a service, e.g., metadata changed, documents added, lifecycle promotions, etc.
- Notifications should be used consistently by publishers.

System-Generated Notifications

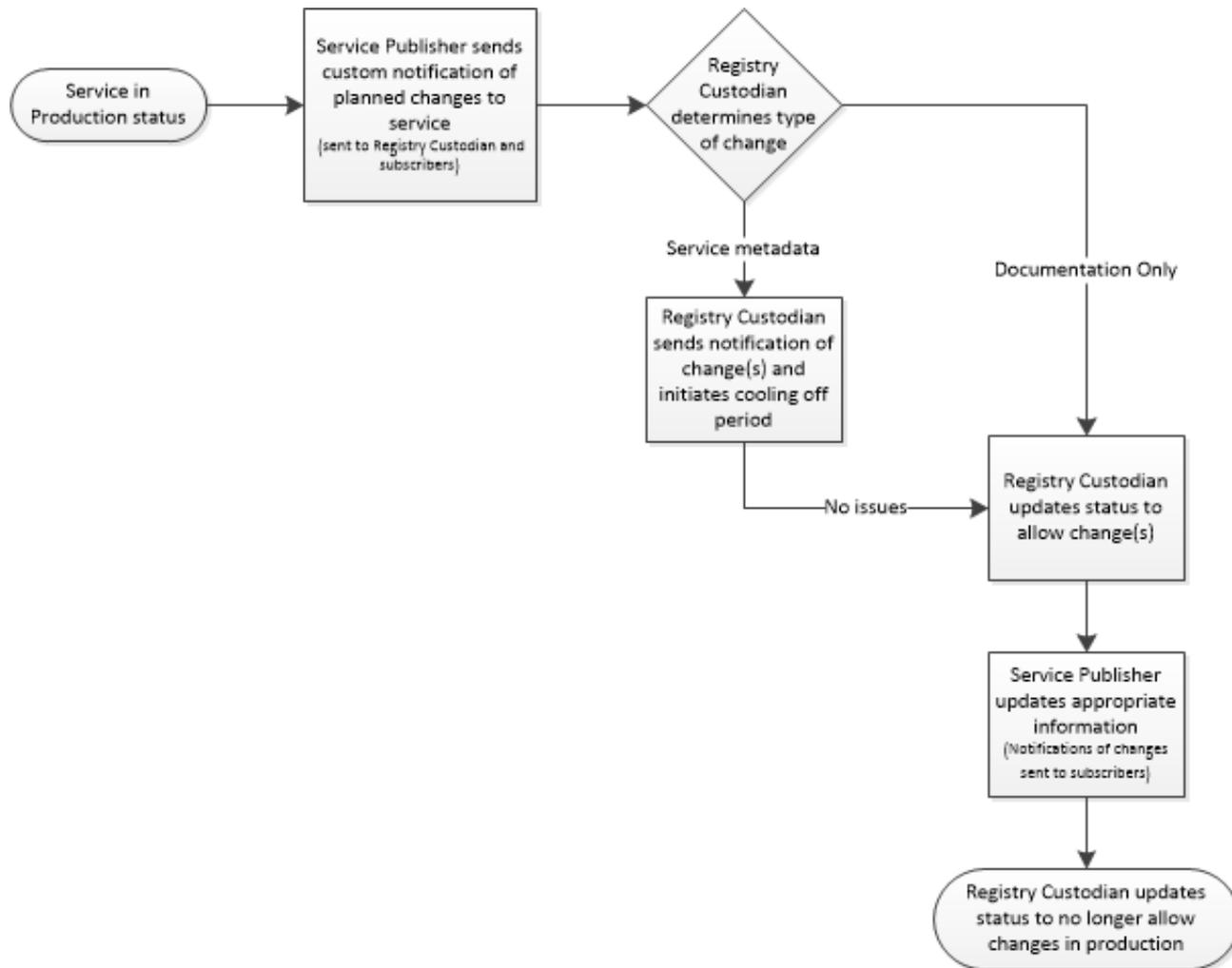
- If the service is in **Development** or **Verification** stage, the option to send a notification will occur when any modification is saved.
- A dialog box will appear: “***Would you like to send email notification about changes in metadata?***”
 - Click **OK** to send an email to all subscribers that a change was made.
 - Click **Cancel** to **NOT** send an email to all subscribers that a change was made.

Custom Notifications

A custom notification should be used to notify all subscribers when you are:

- Making multiple changes to the service metadata, rather than sending an email for each section or subsection that is modified.
- Planning to modify metadata for a service that is in production stage.
- Deprecating/retiring a service.

Change Notification in Production Stage



How to Send a Custom Notification

1. Select

- **Services|Service Notification** on the top menu bar

OR

- On the **Services** panel (on the Home page), click on [Send a service notification](#) hyperlink.

2. Describe the changes you have made or plan to make to the service and click **Send**.

3. An email is sent to the registry custodian and all subscribers.

Custom Notification (cont.)



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Welcome back

NAS Service Registry and Repository (NSRR)

Create Custom Notification

Title *

NSRR: Service Publisher Notification for Flight Plan Service (FP&

Email Text *

Please note that Schema 1.0 is being changed to Schema 2.0 on March 30, 2020.

Send Cancel

How to be Notified of Changes to Services

1. Select

- **Services|Manage Notifications** on the top menu bar

OR

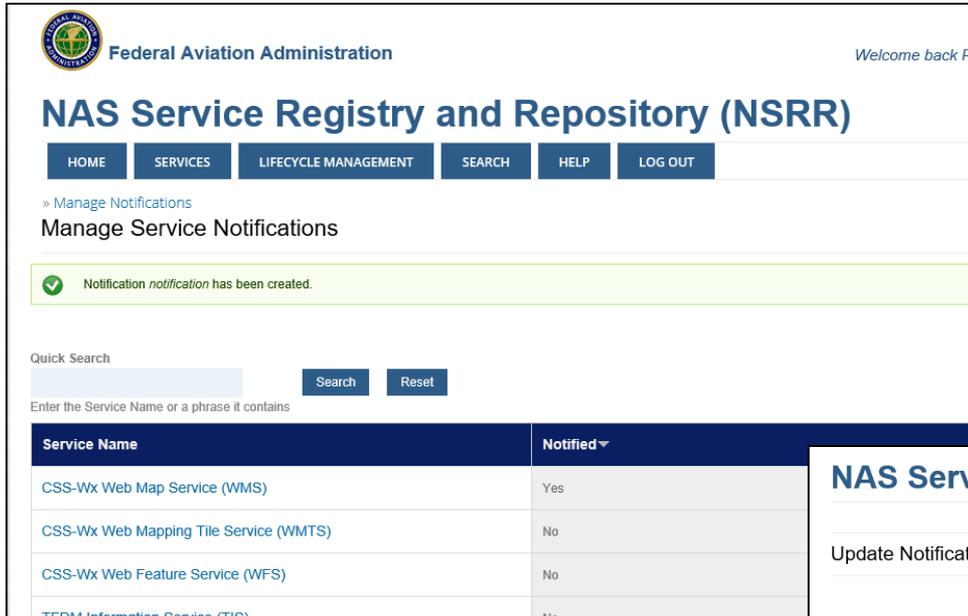
- On the **Services** panel (on the Home page), click on [Manage service notifications](#) hyperlink.

2. Click on the service for which you want to receive notifications.

3. Click **Subscribe to Notifications**.

4. To unsubscribe, retrieve the service you want to modify and click **Cancel Notifications**.

Subscribe to Notifications (cont.)



Federal Aviation Administration

Welcome back P

NAS Service Registry and Repository (NSRR)

HOME SERVICES LIFECYCLE MANAGEMENT SEARCH HELP LOG OUT

» Manage Notifications

Manage Service Notifications

Notification notification has been created.

Quick Search

Enter the Service Name or a phrase it contains

Service Name	Notified
CSS-Wx Web Map Service (WMS)	Yes
CSS-Wx Web Mapping Tile Service (WMTS)	No
CSS-Wx Web Feature Service (WFS)	No
TEDM Information Service (TIS)	No



NAS Service Registry and Repository (NSRR)

Update Notification

Service Name: CSS-Wx Web Mapping Tile Service (WMTS)

Service Description: The CSS-Wx System will enable National Airspace System (NAS) systems to access high resolution, aviation weather data to meet their individual needs and to support NAS operations. The weather data will include atmospheric observations and data obtained from a variety of producing systems. The CSS-Wx System will filter the weather data as required to meet the specific needs of individual consumer systems. The CSS-Wx System will be the single source for aviation weather data for the FAA and will publish the weather data in standardized formats to consumers via the System Wide Information Management (SWIM) System. The CSS-Wx System will also publish weather data in standardized formats for NAS users who are external to the FAA. The WMTS provides access to layer weather data products that have binary data encodings. The service includes support for a variety of spatial and temporal filtering and caching functions to allow for flexible and efficient distribution of weather data within the NAS, as well as grid transformation services such as capabilities to distribute data in tiled subsets further increasing network efficiency. The WMTS supports the request/reply message exchange pattern in a consistent manner to meet use cases related to ad-hoc requests for information.

Lifecycle Stage: Proposed

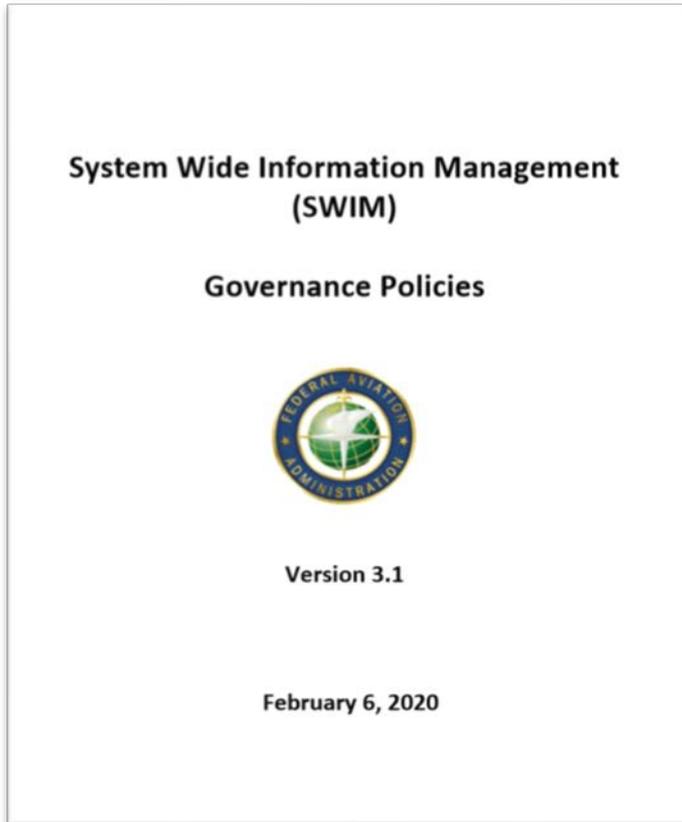
Subscribe to Notifications Cancel



Summary

- The SWIM service starts to evolve through a sequence of changes realized as new releases.
- The SWIM service provider must:
 - Notify the SWIM Governance and Engineering leads about planned modifications to the service.
 - Use NSRR to notify known service consumers about changes to the service.
 - Create system-generated or custom notifications in the NSRR to describe the purpose, character and potential impact of changes.

SWIM Governance Policies Document



- Was just updated to [Version 3.1](#).
- Version 3.1 is available on the [FAA SWIM Governance site](#).
- Includes change management requirements for service providers.

Engaging with SWIM

Upcoming Events

Cheryl Jackson

*SWIM Communications &
Outreach Lead*

SWIM@FAA.GOV

Communications, Information and Network Programs



**Federal Aviation
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Upcoming Events

May 12-14



at the FAA Tech Center, NJ

<https://www.atca.org/techsymposium>



May 21



Meeting #10
MITRE HQ,
McLean VA

https://www.faa.gov/air_traffic/technology/swim/swift/

June 18

SWIM Users Forum #28

Washington, DC and Online

https://www.faa.gov/air_traffic/technology/swim/users_forum/



Thank You

Questions? Email swim@faa.gov