

SWIM Users Forum

Presented by:

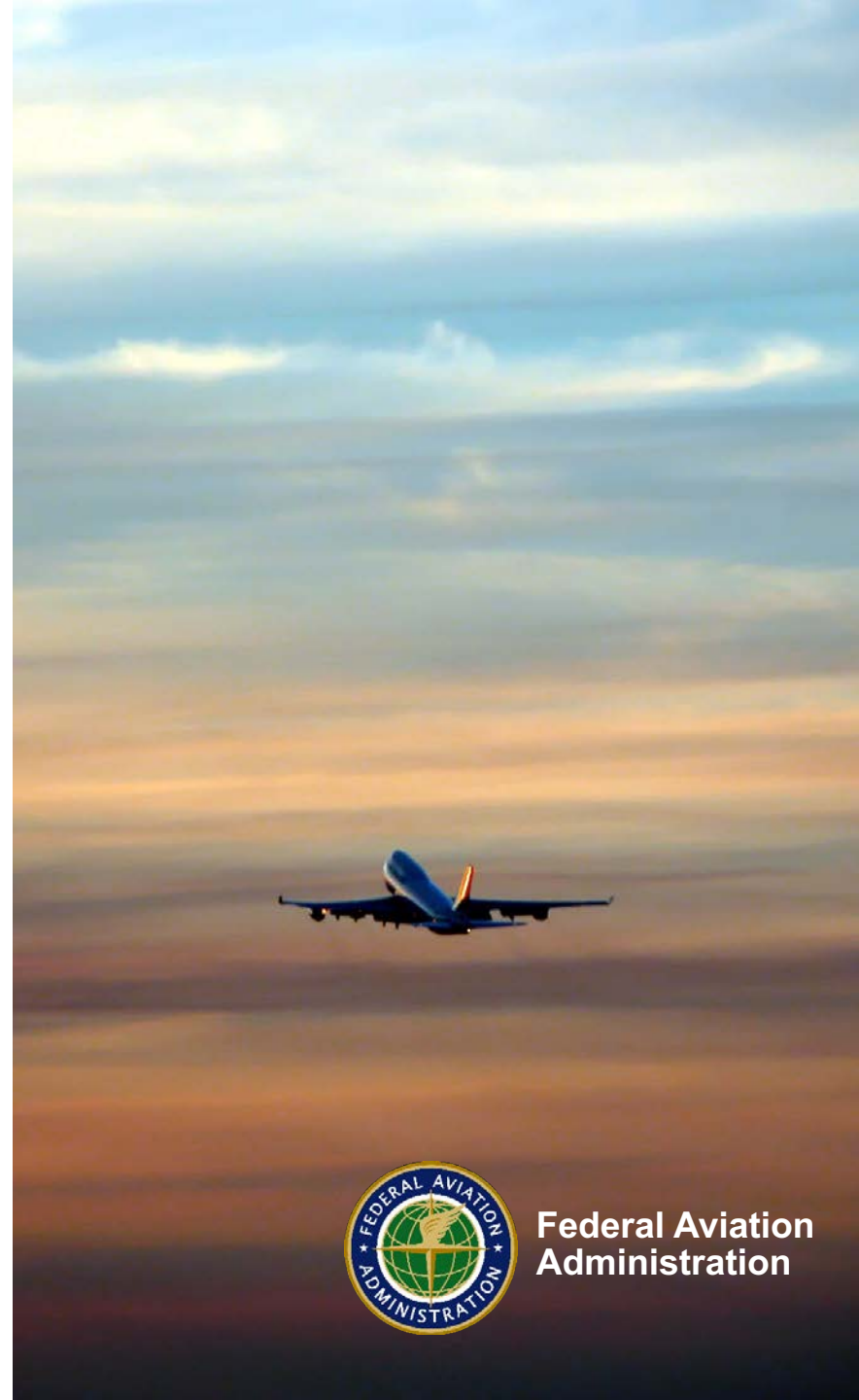
FAA SWIM Program Office

February 17, 2022

**System Wide Information Management
AJM-316**



**Federal Aviation
Administration**

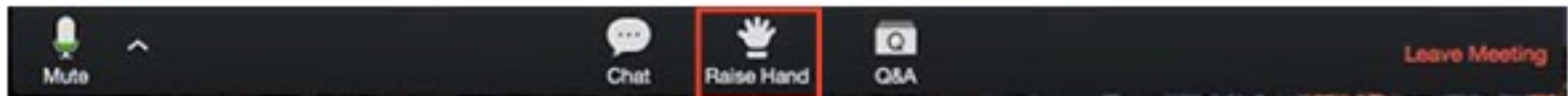


Welcome!

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.



Agenda

- **SWIFT Portal Update & User Reminders**
- **NCR On-Ramping for External Users**
- **STDDS R6P2 Update**
- **SFDPS Release 1.5.0 Update**
- **SWIM Industry FAA Team (SWIFT) Update**
 - SWIM Information Services Roadmap

SWIFT Portal Update

Presented by:

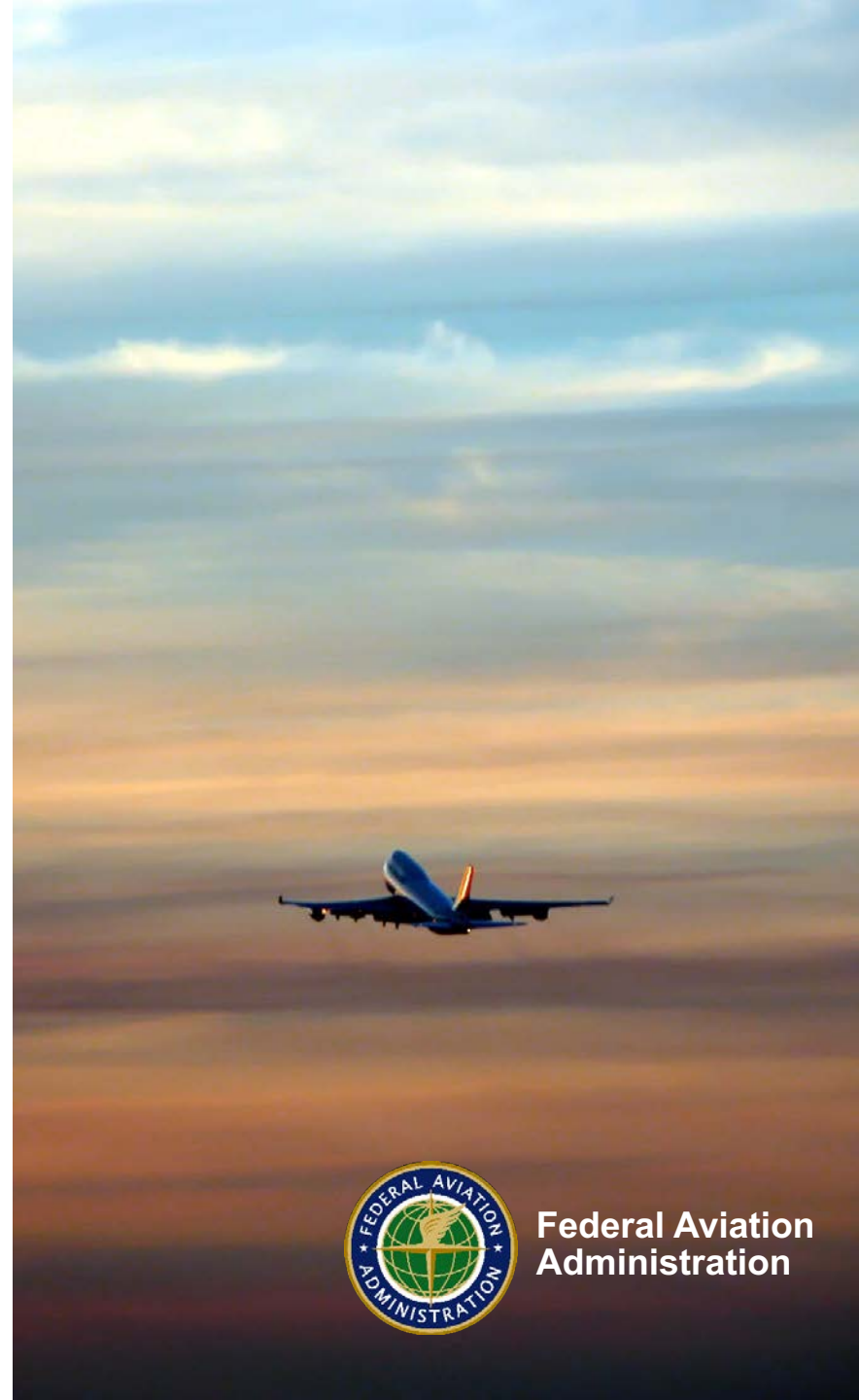
Luke Curns

SWIFT Portal / SCDS Team

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Agenda

- **Data Compression Reminder**
- **SWIFT Portal V3 Coming Soon**
 - New Functionality
 - Portal Backend System Email Change
 - URL Redirect
- **Account Reminder**

SCDS Data Compression Reminder

- **Overview**

- The FAA has transitioned to use compression for connections to the SWIFT Portal Distribution Service (i.e., SCDS).
 - This change was applied to all accounts that were not actively connected to SCDS prior to December 14th, 2021.
-
- Transition for SCDS users that had connections prior to December 14th started on January 25, 2022 and will run through March 21, 2022
 - Each user will receive an email notice indicating when their account will have compression enabled
 - The SCDS Data Compression webinar from December 14, 2021 can be found on the SWIFT Portal Community Forum
 - <https://community.swim.faa.gov/discussion/43/scds-data-compression-update-webinar#latest>

Issue Reporting During Transition

- Options for any non-operational issues or questions:
 - Email the SWIM User Support Team at scds@faa.gov
 - SWIFT Portal: <https://portal.swim.faa.gov/>
 - Start a chat or
 - Submit a questions through the SWIFT Portal Support page
 - **Please do not contact the SWIM Ops Help Desk for non-operational issues or questions.**
- Options for operational issues once compression has been enabled:
 - Contact the SWIM Ops Help Desk (SECC) at 9-ATO-SECC-OPS@faa.gov or 1-855-FAA-NEMC.
 - They will work with you and the SCDS vendor to revert to uncompressing and then help coordinate identification and resolution prior to re-enabling compression on your account.

SWIFT Portal V3 Release

Coming Soon! End of February release includes:

- Updates to Portal Home Page Layout
 - Ability for users to configure the different tiles they see on the homepage
 - Enhanced subscription tile and addition of configurable maintenance event information as an option for the layout configuration
- Maintenance Events
 - Service Status page will now show when a service is down for maintenance
 - In app notifications for planned and unplanned maintenance with the ability for users to set notification preferences
 - Ability for users to view details on active, upcoming and past maintenance events.
- Portal Backend System Changes
 - Emails from the SWIFT Portal system (i.e. approvals, password reset notifications) will no longer come from notifications@cinnato.com they will now come from SWIMCloud@faa.gov
 - Starting at the end of March 2022 the old URL (scds.swim.faa.gov) will no longer be redirecting users to the current URL please ensure your bookmarks for the SWIFT Portal are set for (portal.swim.faa.gov)

Account Reminder

- Please remember to periodically check the email account that is associated with your SCDS account.
- The associated email address is how the SWIM program office and our helpdesk team will communicate with you to resolve any issues and communicate important information.
- If you need to add an additional email address to our distribution list please contact us through the SWIFT Portal Support “Ask A Question” feature or email us at SCDS@faa.gov.



Contact Info

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System Wide Information Management (SWIM) NAS Common Reference (NCR)

NCR On-ramping for
External Users

Presented by:

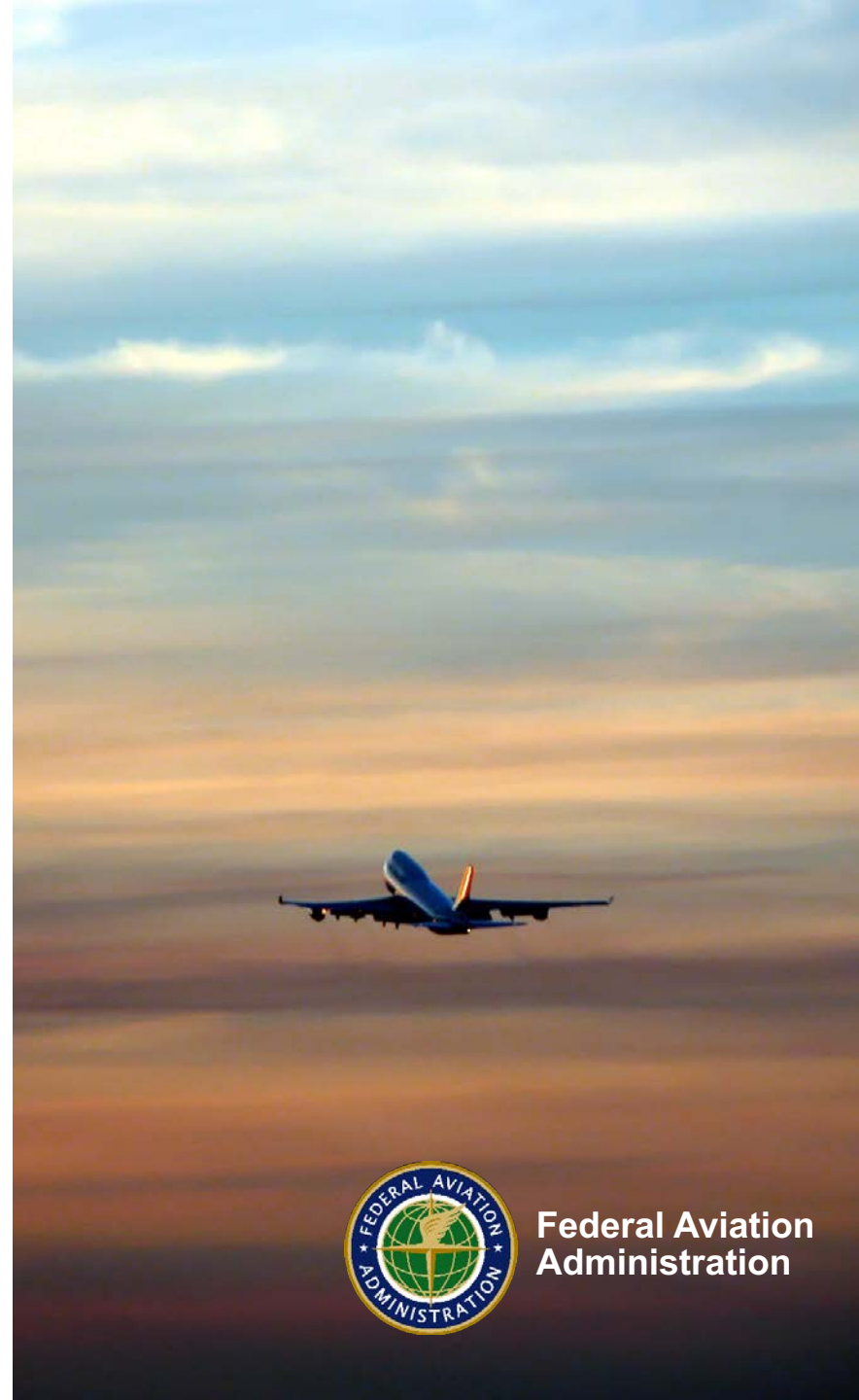
Ramesh Ravella

NCR Team

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NCR External Users

Batch 1

- Boeing
- NASA
- Delta Airlines
- JetBlue
- Mosaic ATM

Batch 2

- MITRE
- FliteX
- Robust Analytics

Second Batch of External Users

- Plan to start a second batch of users in June - July 2022 timeframe
- There are slots available for the second batch
- If you are interested, please send an email to: SWIM@faa.gov
- NCR documentation is available in NSRR

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STDDS R6P2 Update

Presented by:

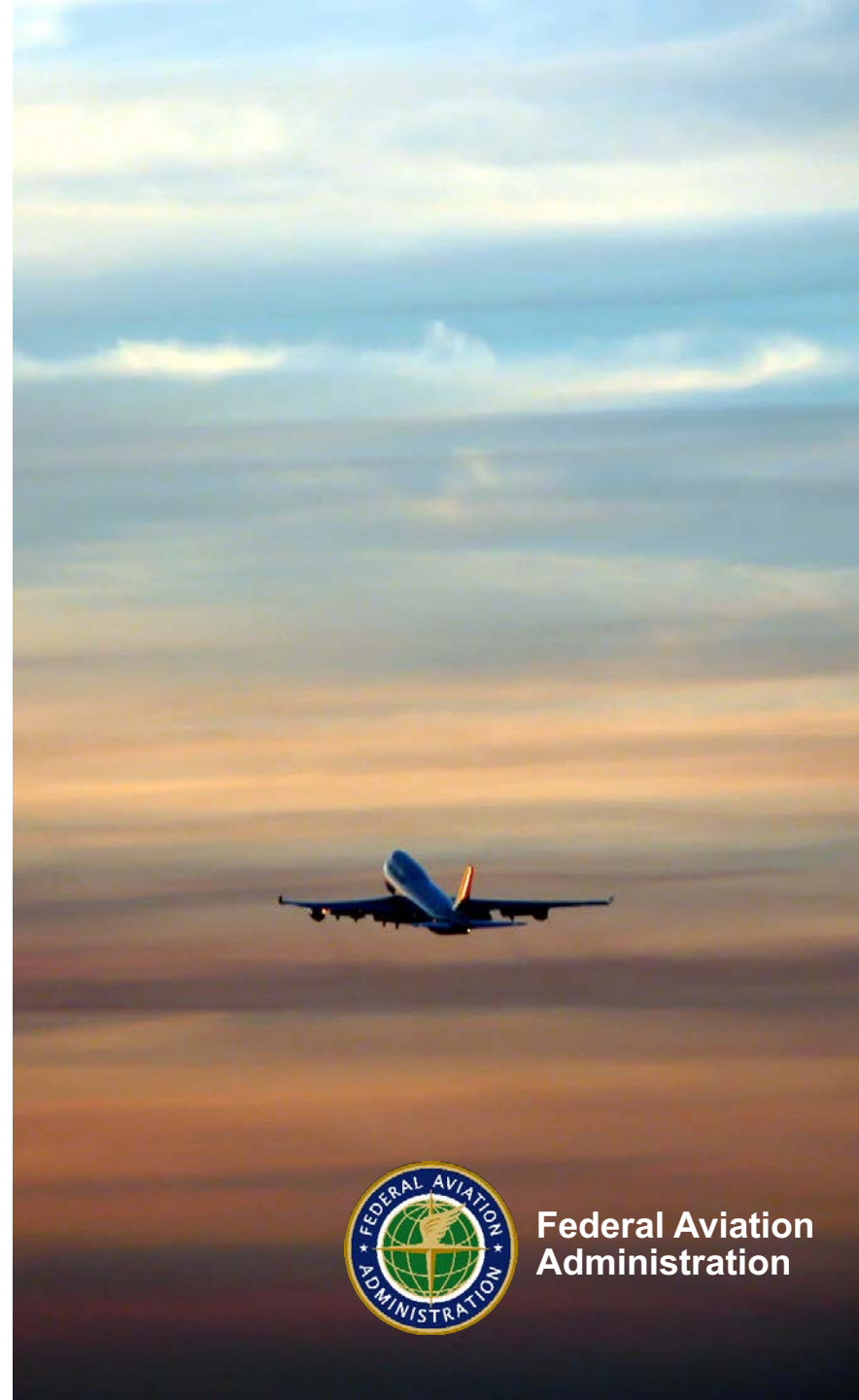
Cora Buck, Julia Korey

STDDS Team

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STDDS R6P2 Updates

- STDDS R6P2 Waterfall Schedule begins 2/14/22
 - Y90 was upgraded in December 2021 as part of a successful key site test
 - Plan to upgrade ~6 sites/week
 - Sites have 6 months to complete upgrade, but the waterfall is not expected to take that long
- STDDS R6P2 Contains no required schema changes
- Please see NSRR for Release Notes, JMSDDs, Schemas

STDDS R6P2 Content

Service	Highlighted Changes
All	<ul style="list-style-type: none"> In R6P2, the namespace will not increment Add Limiting Aircraft Display Data (LADD) filtering
TAIS	<ul style="list-style-type: none"> Add rawFlightRules field to the TerminalAutomationFlightPlan message Publish all associated tracks regardless of altitude Publish STARS AIG210 in TAIS service Reduce AIG200/210 message loss on STARS switchover by parsing dual inputs
TDES	<ul style="list-style-type: none"> Enhance TDES with additional TDLS messages Publish additional TDLS data in TDES messages Parse and publish entire dataHeader in DATISMessage
SMES	<ul style="list-style-type: none"> Enhance SMES with additional airport movement events Add new optional fields to SMES events Add *_COVAR fields to the MLAT and ADSB CAT10 messages Remove legacy “v” attribute from asdexmessage.xsd Enhance SMES CAT10 data using SFDPS data Add ASDE-X/ASSC data published in Maintenance Mode to STDDS feed
ISMC	<ul style="list-style-type: none"> Publish messages in MMIXM format Split the STDDS Status message by content sensitivity

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SFDPS Release 1.5.0 Update

Presented by:

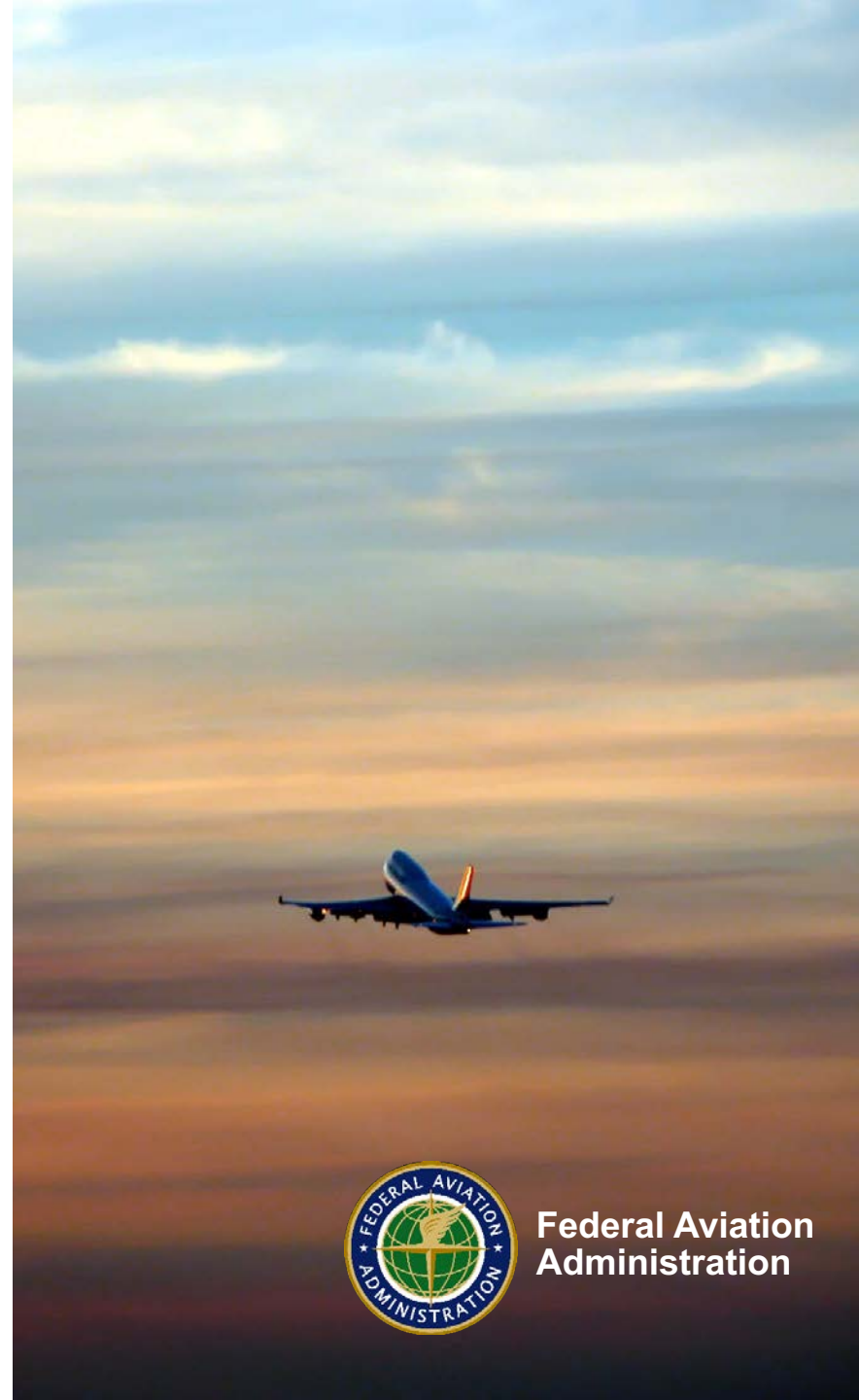
Cora Buck, Ross Skiles

SFDPS Team

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Agenda

- Release 1.5.0 Overview
- SFDPS Data Field Summary
 - Flight Plan Message changes
 - Track Message changes
 - Special Activity Airspace Message changes
 - Miscellaneous Message changes
 - Data Base Reconstitution Message Changes
- Release Benefits Summary

FDPS Release 1.5.0 Overview

- NAS Service Registry and Repository <https://nsrr.faa.gov>
 - Locate SFDPS services identified as Lifecycle Stage: **Verification**
 - Locate files under tab: **Service Documents**
 - File Names:
 - NAS_JMSDD_4309_001_RevD-UNSIGNED-20211016.docx *JMS data description*
 - OARS-Examples.zip *Sample SFDPS data with new OARS fields*
 - SFDPSSchema_v1.3.9.xsd *schema with OARS update*
- Update the SFDPS software:
 - The SFDPS Operational Analysis and Reporting System (OARS) table allowing current available data fields to be delivered to SFDPS from ERAM Data Distribution System (EDDS); include additional available data in messages; format the output in simple XML and AIXM/FIXM formats and publish data to NAS Enterprise Messaging System (NEMS); Correct software defects tracked with Jira Tracking Tool
- Update the SFDPS Schema:
 - Include all data fields received from the from the EDDS; particularly the altitude fields in both the SU simple extensible markup language (XML) reflecting updated ERAM functionality and the SU_AIXM (Aeronautical Information Exchange Model (AIXM)) messages.

New SFDPS Data Fields Summary

- FH (Flight Plan), AH (Flight Plan Amendment) and (HU Flight Plan Update) messages
 - From Traffic Management sources
 - Traffic Management Reroutes
 - Time-Based Flow Management (TBFM) Constraint Satisfaction Point (CSP) ID and speed advisories
 - Adding Flight Plan (Flight Strip) Revision Number
 - Fixing Flight Plan Sequence Number
- TH (track) messages
 - From ERAM ADS-B source
 - Added 6 additional data fields derived from ERAM ADS-B source data
- Adding 00E (time in hhmmss + 4-digit sequence number) field for all FIXM message types
- Addressing ERAM Special Activity Airspace Status (SAA) Message Functional Change
 - Update SFDPS SAA message to current EDDS message format to include all controller entries

FH, AH and HU Messages

Traffic Management Reroutes

- Traffic Management (TFM) Protected Area - Protected from what?
 - The Reroute produced by traffic management is protected from being overridden by automated preferential route processing
 - Contains a route amendment of up to 1000 characters
 - The amended route will also become the route field when accepted by the controller and issued in a clearance
 - This field will be present in the simple XML version
 - This field will not be present in this release in the FIXM version because of size constraints
 - *A change request will be submitted for inclusion in US FIXM extensions and included in a later SFDPS release*
- Traffic Management Initiative (TMI) Identifier example when accepted by the controller
 - name="TMI_IDS", value="RRDCC00348-RRDCC00444"
- Suppressed TMI Identifier example when rejected by the controller
 - name="TMI_IDS", value="RRDCC00348-RRDCC00444"

OARS Table New Fields	SimpleXML tags	FIXM - nameValue fields
180A0 - TFM-Protected-Area	TFMProtectedArea_180a	
181A0 - TMI-Identifier	TMIIdentifier_181a	"TMI_IDS"
182A0 - Suppressed-TMI-Identifier	suppressedTMIIdentifier_182a	

FH, AH and HU Messages

Time-Based Flow Management

- **Constraint Satisfaction Point (CSP)**
 - Meter Reference Point (MRP) name. A MRP can be either a CSP name or non-CSP metering arc name.
 - MRP has two subsets:
 - CSP – location used to de-conflict traffic and used as a delay distribution point.
 - ERFMP – represented by a TBFM metering arc.
 - AFMP – represented by a TBFM metering fix or a TBFM metering arc.
 - Non-CSP metering arc – any outer arc applicable to a CSP which is used only as a delay distribution point.
 - Examples: Field 68 G = LCH/J, Field 68 G = DAS
- **Cruise Speed Advisory Phase and Descent Speed Advisory Phase**
 - All cruise & descent speed advisory fields are combined. If the cruise and/or descent flight phase indicator is present, it will be accompanied by only one value (either Calibrated Air Speed (CAS) or Mach type). At most, there will only be four values present. Delineated by “-“. Example: “C-M80--” or “C-M74-D-280”

OARS Table New Fields	SimpleXML tags	FIXM - nameValue fields
68G0 - CSP-Name	CSPName_68g	“CSP_NAME”
343A1 – CruiseSpeedAdvisoryFlightPhaseIndicator	cruiseSpeedAdvisoryFlightPhaseIndicator_343a1	“SPEED_ADVISORY_INFO”
344A1 – CruiseSpeedAdvisoryValueMach	cruiseSpeedAdvisoryValueMach_344a1	
344B1 – CruiseSpeedAdvisoryValueCAS	cruiseSpeedAdvisoryValueCAS_344b1	
343A2 – DescentSpeedAdvisoryFlightPhaseIndicator	descentSpeedAdvisoryFlightPhaseIndicator_343a2	
344A2 – DescentSpeedAdvisoryValueMach	descentSpeedAdvisoryValueMach_344a2	
344B2 - DescentSpeedAdvisoryValueCAS	descentSpeedAdvisoryValueCAS_344b2	

TH Messages *Aircraft Track Information*

- Adding additional track information to existing ERAM Air Route Surveillance Radar (ARSR) 12 second track messages
 - For each ERAM ARSR track message that has corresponding track data received from ADSB with respect to time, the following derived ADSB data will be added:
 - Position in latitude/longitude coordinates
 - Altitude
 - Velocity
 - Track time (ADS-B)
 - Aircraft Registration Number (Tail Number)
 - 24-bit ICAO Address/Mode S 6 HEX character address
 - *Aircraft Registration Number and 24-bit ICAO Address are combined in a single field*

OARS Table New Fields	SimpleXML tags	FIXM - nameValue fields
174A0 - ADSB-TargetPosition	ADSBTargetPosition_174a	name="ADSB_POS_174A"
175A0 - ADSB-TargetAltitude	ADSBTargetAltitude_175a	name="ADSB_ALT_175A"
176A0 - ADSB-TargetVelocity	ADSBTargetVelocity_176a	name="ADSB_VEL_176A"
177A0 - ADSB-TargetTime	ADSBTargetTime_177a	name="ADSB_TIME_177A"
2M0 - ADSB-Target ID	ADSBTargetId_02m	name="ADSB_02M_52B"
52B0 - ADSB-24bit-ICAO-Address	ADSB24BitIcaoAddress_52b	

SU Messages *Special Activity Airspace (SAA)*

- Manually activating multiple airspace blocks and setting the SA status to active
 - Adding this change to SFDPS resolves a consumer issue
 - Previous SFDPS SU message did not reflect an ERAM functional change that allowed controllers to enter multiple altitude blocks to an active status
 - **This resulted in consumers not receiving the full ERAM EDDS SU message**
 - The SFDPS messages will allow up to 10 manually entered altitude blocks when setting an SAA status to ON
 - This will align the SFDPS SU messages with current ERAM functionality

OARS Table New Fields	SimpleXML tags	AIXM
178A0 - SAA- ManualLowAltitude	SAAManualLowAltitude_178a	geometryComponent/AirspaceGeometryComponent/theAirspaceVolume/AirspaceVolume(id="SU_schedule_airspaceVolume_x_ManualLimits")/lowerLimit
178B0 - SAA- ManualHighAltitude	SAAManualHighAltitude_178b	geometryComponent/AirspaceGeometryComponent/theAirspaceVolume/AirspaceVolume(id="SU_schedule_airspaceVolume_x_ManualLimits")/upperLimit
179A0 – SAA- ManualActiveType	SAAManualActiveType_179a	extension/SAAManualAltitudeActiveTypeExtension/saaManualActiveType

HS and HR Message and data field 0E0 present in all Messages

- Release Information (HS) message
 - Provides ARTCC operational adaptation identification
 - Needed by consumers using ARTCC adaptation to insure operational consistency

OARS Table New Fields	SimpleXML tags
<u>HS Messages</u> : only published in Simple XML	
169B0 - CMS-ReleaseInformation	CMSReleaseInformation_169b

- Route Status (HR) Message
 - Provides a change to the size of each route element needed to accommodate larger Route Status Elements

OARS Table New Fields	Simple XML tags	
RouteStatusElements	routeStatusElements_135a	

- Time + Sequence Number (00E) Message field
 - This data field is present in every message and contains a time in hours, minutes and seconds concatenated with a digit message sequence number.
 - This has been added to FIXM to aid with identifying missing messages.

OARS Table Field	SimpleXML tags	FIXM - nameValue fields
00E - SourceTimeAndSeq	sourceId_00e	name="SOURCE_TIME_AND_SEQ"

SFDPS Data Base Reconstitution

from EDDS/HADDS

- SFDPS DBRTFPI utilizes an EDDS/HADDS reconstitution capability that provides all tracks and all flight plans from an ARTCC at startup or upon request
 - Messages have all the same fields as FH/AH/HU and are output in Simple XML and FIXM.
- SFDPS DBRTRI utilizes an EDDS/HADDS reconstitution capability that provides all adapted preferential departure and arrival routes from an ARTCC at startup or upon request
 - Messages have all the same fields as the HR messages changing the RouteStatusElements field size to accommodate elements with an additional character and are output in Simple XML and AIXM.

Release Benefits Summary

- Flight Plan Messages, (FH, AH and HU)
 - Traffic Management enhancements
 - TM Reroutes provides both internal and external consumers with the source of the route and route priority preventing automated revisions
 - TBFM speed advisories provide both internal and external consumers with assigned cruise and or descent phase speed advisories to help with calculating more accurate arrival times
 - Flight Strip Revision Number
 - Provides an important data field to aid controllers using flight strips and pilots using SFDPS flight plan data to verify that flight data is consistent and current. ERAM has recently key-sited this change at ZBW ARTCC.

Release Benefits Summary *Continued*

- Track Messages (TH) adding ADS-B data fields to ARSR 12 second radar track updates
 - Six fields added including report time, latitude/longitude, altitude, velocity, altitude, aircraft registration number and ICAO HEX address
 - Supplements aircraft location with GPS derived aircraft location and altitude
 - Help identify ARSR radar errors
 - Aircraft ICAO HEX address (Mode S transponder code) and aircraft registration number
 - Provides Abacus program with aircraft ICAO HEX address
 - Provides unique aircraft identification to prevent mismatch with flight plans and clearances
 - Potential to help identify filed flight plan errors
 - Potential to improve sensitive flight data processing
 - Improve alignment and fusion of SWIM track and flight plan data from all data sources

Release Benefits Summary *Continued*

- Special Activity Airspace (SAA) SU message
 - The ERAM program enhanced controller entry for entering multiple altitude blocks when setting SAA airspace to active status
 - SFDPS is currently truncating the SAA message and only publishing the first altitude block when the message entered by controllers may have included up to 10 altitude blocks.
 - With this change, SFDPS will be aligning the SU message output to accurately reflect what controllers have entered.

Release Benefits Summary *Continued*

- Adding 00E Time and message sequence number to all FIXM messages
 - Adding this data field will be utilized to troubleshoot reports of missing SFDPS data by using a concatenated EDDS/HADDS data field that provides a sequence number for every message sent to SFDPS by ARTCC and message type.
 - SFPDS second level support will develop monitoring and analysis with software tools to quickly identify data missing from the source.
 - It will also be used to compare input with output to verify that all data is received.
 - This functionality will become critical as SFDPS attains efficiency critical operation serving NAS systems with efficiency critical source requirements

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SWIM Industry FAA Team (SWIFT) Update

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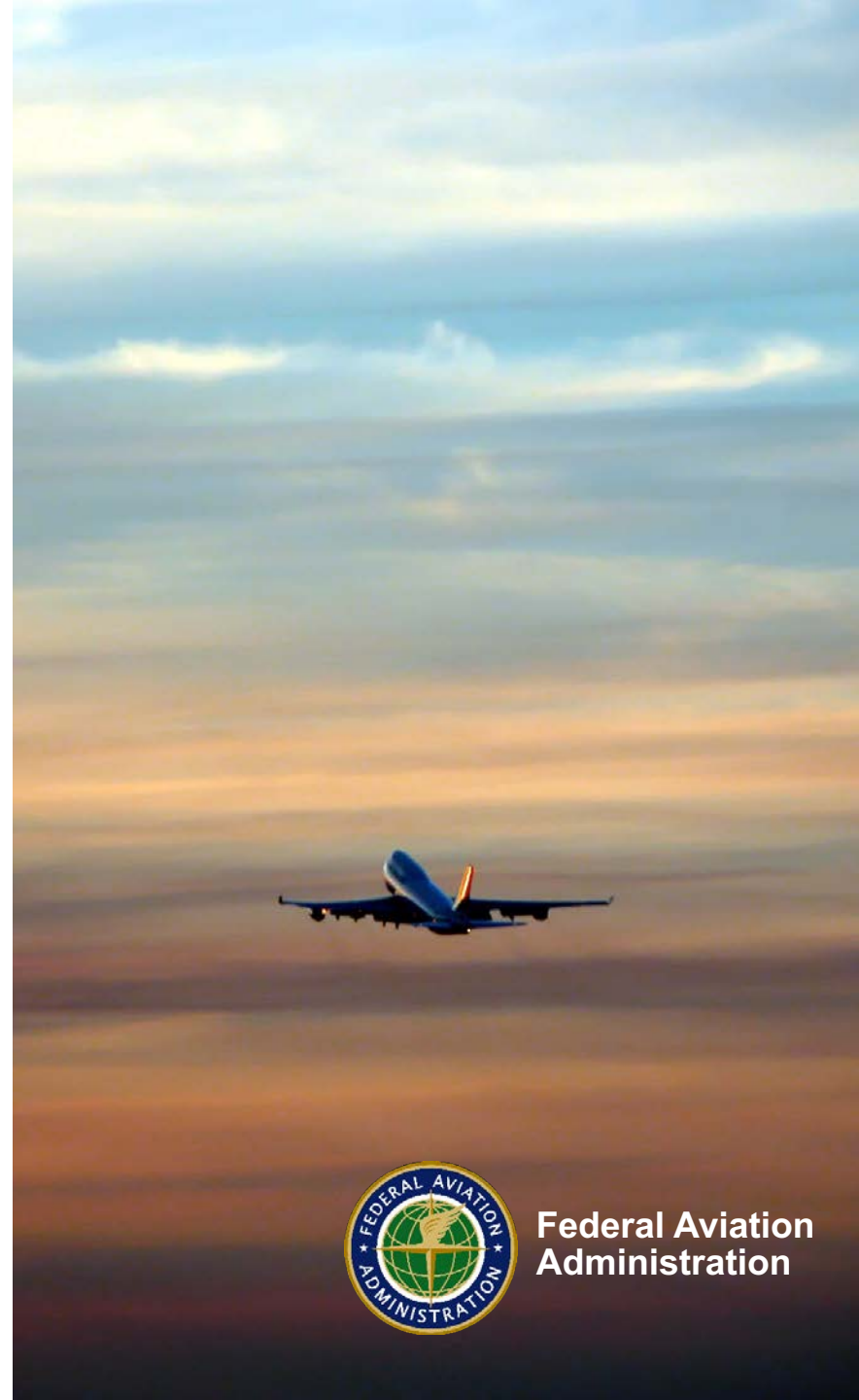
Xavier Pratt & Ray Mitchell

SWIFT Team

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Agenda

- **SWIM Information Services Roadmap**
 - Update on SWIM Services “What's New”
- **Ops Context Documents Update**
 - Latest Releases for Review
- **SWIFT 17 Preview**
 - Sneak Peak @ Agenda/Topics

SWIM Information Roadmap Services Update

What's New?


2021

2022

2023

Identity and Access Management Ph2B IOC 


NCR R.1.1 

AIMM Ph2 ACS 

TFDM Deployment Continues 

STDDS R6 


SFDPS R1.5.0 

CSS-Wx Development Continues 


CSS-FD Investment Analysis 


TFMS R14 (v3.2) 


Operational & Support Implementation System

Lost Message Retrieval 

TBFM RTS 

TBFM MIS R1.1.0 


TFDM B1 IOC 

CSS-Wx Development Continues 

CSS-FD Investment Analysis 

TFMS R15 

TFDM B2 IOC 

CSS-Wx Development Continues 

CSS-FD Investment Analysis 



Weather



SWIM Capability



Flight/Flow



Surveillance



Aeronautical

*Calendar year dates, subject to change

TBFM MIS: R1.1.0 targeting Spring 2022. New JMS properties for message routing based on additional A/C data attributes.

TFDM Build 1: IOC targeting Summer 2022. Includes TTP which provides airport and flight information, surface scheduling and metering.

TFMS: R15 targeting Fall 2022. Include Reroute Impact Assessment (RRIA). Retirement of FDFE Direct Service; FDFE data exchange replicated in Request/Reply.

SFDPS: Release of COTS update to OS, FUSE software and Hadoop database planned for remainder of 2022

CSS-Wx: IOC Targeting 2024.

Integration with ERAM and system testing at WJHTC. End user systems, SWIM to support CSS-Wx & NWP testing

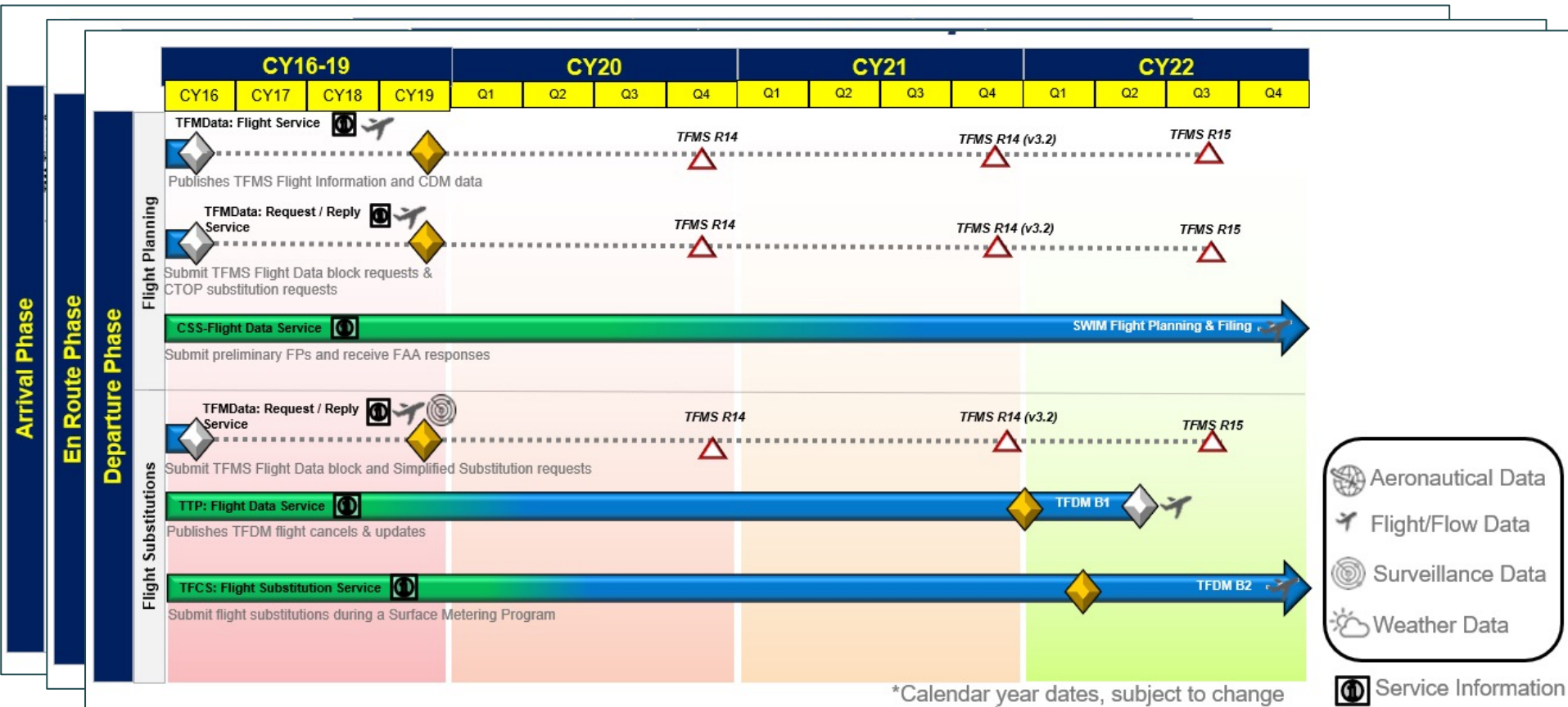
CSS-FD: RRA Industry demo/testing targeting Q4 2022. Gather feedback and findings on FP use case, R&D connection testing and user test client development.

AIMM ACS Ph 2: completed Dec 2021. Providing integrated aeronautical information via WS subscriptions and queries.

STDDS: R6P2 completed Sep 2021.

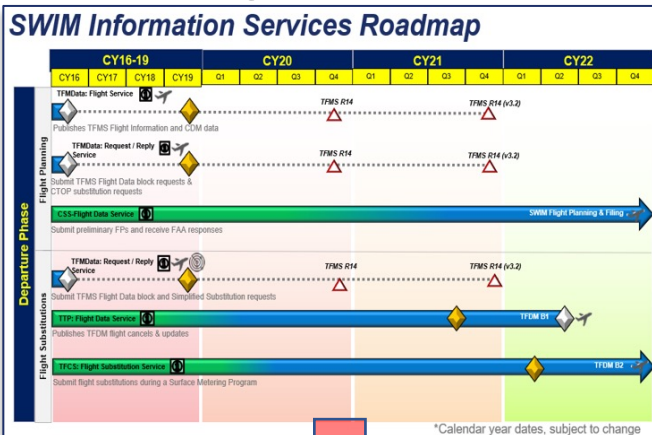
Includes TAIS message enhancements, publish additional TDLS messages, and SMES runway event and CAT10 enhancements

SWIM Information Services Roadmap



SWIM Information Roadmap Services Update

1. SWIM Information Service



2. Information Service Context

TFMS – TFMData: Flight Data Service



Service Description

Service
Message

TFDM Build 1 – TTP Airport, Flight Data, Flight Delay, Ops Metrics, TMR Services

Service Description

- TFDM is the surface management solution for NextGen. TFDM is planned to provide Airport and Flight Information Service (AFIS), which is expected to be deployed in the timeframe. AFIS data includes airport configurations, airport specific demand and delay information, and airport-initiated departure stop restrictions. AFIS will provide more timely and specific information on individual flights from the operators, including gate and estimated off block times as well as schedule and surface metering information from TFDM to operators. TFDM services will interface with other information services to provide airport-specific arrival predictions and schedules, call for release data exchanges, flight data, and surface situational awareness.

Service Interface

- Publish/Subscribe via JMS

Message Sets

Business Function	Steady State Flow Message Types
Airport Information	Airport Information Heartbeat
Flight Data	Flight Add Flight Update Flight Notification Flight Delete Heartbeat
Flight Delay	Flight Delay Heartbeat
Surface Metering Programs	SMP Data Message SMP Flight List Update Heartbeat
Traffic Management Restrictions	Traffic Management Restrictions Heartbeat

Latest News

- Developed remote TFDM lab access for developmental testing of the TFDM software
 - Completed Build 1 software updates and completed most of testing
 - Waterfall Deployment Schedule Target Release in January 2022
- TFDM Build 1
 - Testing at WJH Tech Center
 - Key Site: Phoenix Sky Harbor International Airport (PHX)
 - New Projected* IOC Date: Summer 2022



Drill down for quick insight into a service description, message sets and latest news.



Ops Context Document Updates

- **TFDM TFCS Flight Substitution Service**
 - Final Operational Context document under TTP services will be available soon via NSRR
- **Final NCR Operational context document**
 - Final Preview of NCR XM service with Focus Group
 - Final Preview of NCR Web Map and Feature service with Focus Group
- **NCR and TTP Ops Context docs pending Program Management review**

SWIFT 17 Preview

Date/Time: March 3rd – 12:30pm Virtual

Content:

- **Special Topics: The Information-centric National Airspace System (NAS)**
 - Impacts to 4-Dimensional Trajectories & Trajectory-Based Operations (4-DT)
 - Implications to Automation Evolution
 - Information to the EFB: The Connected Aircraft
- **Western Regional Partnership (WRP): Information Sharing**
- **NAS Programs: Program overview and use/need of information and exchanges with external partners**
 - Commercial Space: Program Overview, Current Events & Status
 - XTM (covers UTM, AAM or UAM, and ETM): Program Overview, Status & Future Plans
- **Widget Case Study: SWIM Data Use Case**
- **SWIM Topics:**
 - Information Services Roadmap
 - SWIFT PORTAL

See you at the SWIFT Party – for registration and more information please visit -

SWIFT@faa.gov

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Questions?



Upcoming SWIM Events

- **SWIFT 17**
 - Thursday, Mar. 3, 2022 from 12:30-4pm ET
 - SWIFT@faa.gov
- **ATCA Technical Symposium *postponed***
 - *Now joined with ATCA Annual, Nov. 6-9, 2022 in Washington, DC*

Thank You



Questions? Email swim@faa.gov