

SWIM Users Forum #13

December 8, 2016

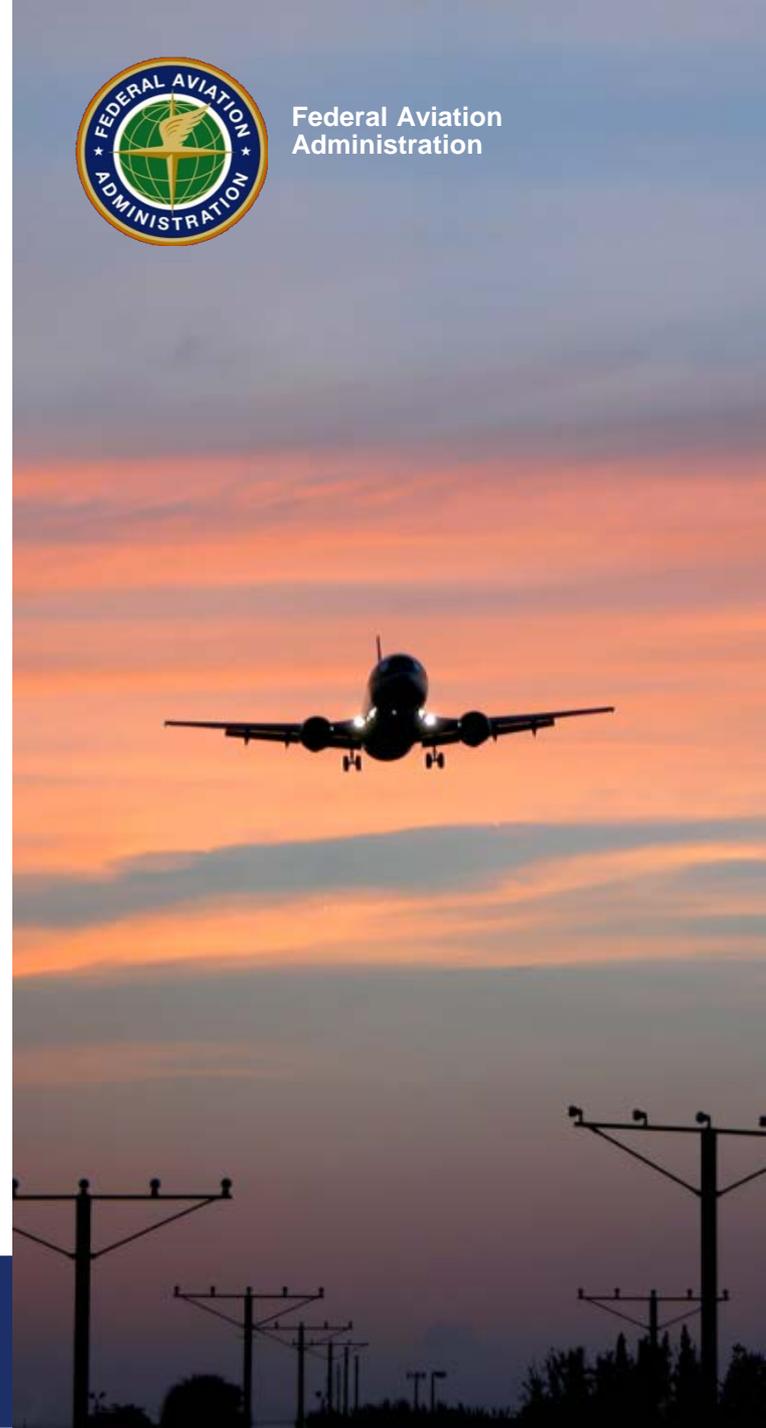
Washington, DC

Jeri Groce

SWIM Program Manager



Federal Aviation
Administration



Today's Agenda

- **Welcome**
- **STDDS Update**
- **SFDPS**
- **CSS – Flight Data**
- **NEMS Availability**
- **Coming up:**
 - Voice of the User: Call for volunteers
 - Upcoming Events
- **Addressing your questions and concerns**

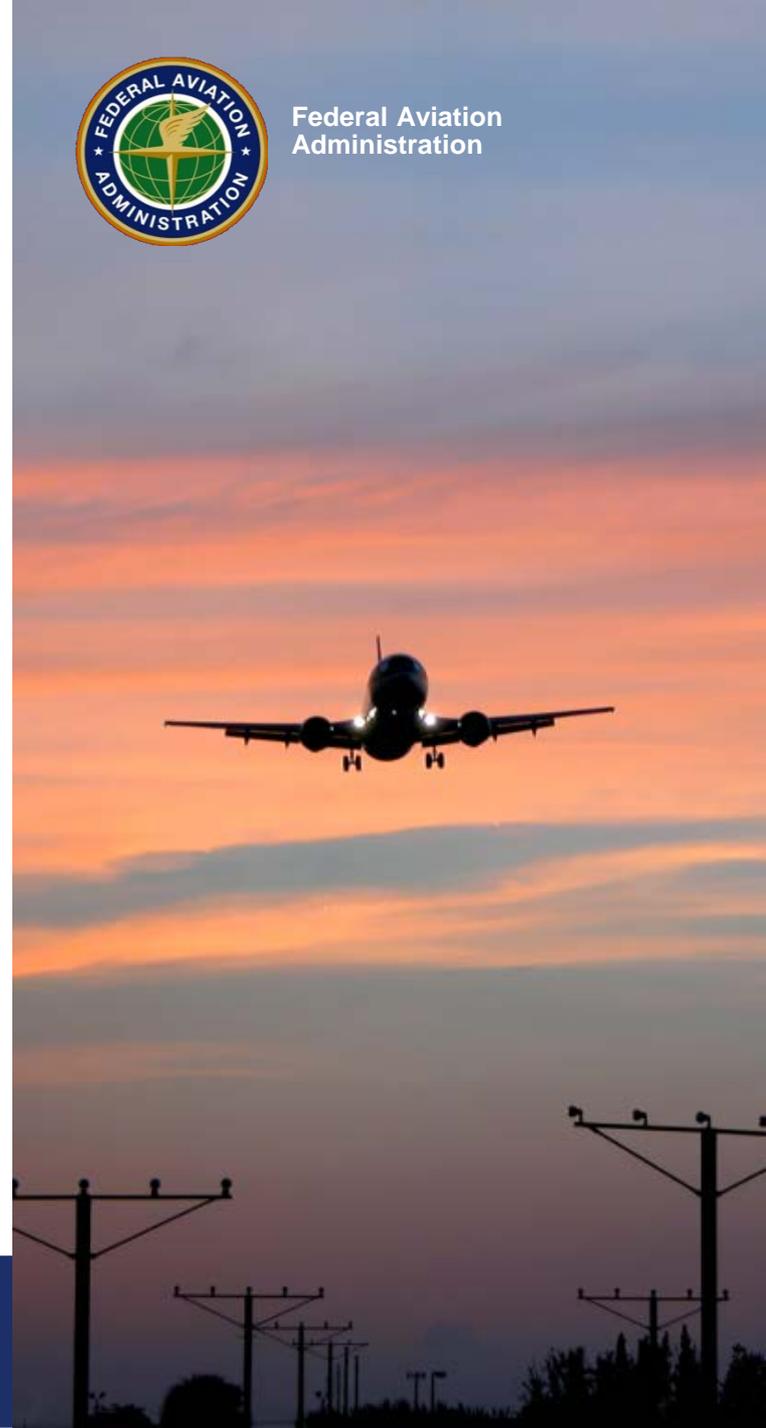


STDDS Update

December 8, 2016



Federal Aviation
Administration



SWIM Terminal Data Distribution System (STDDS) Status

- **Current Data Sources**

- ASDE-X/ASSC, STARS, RVR, EFSTS, and TDLS

- **Release 3.2**

- Deployed in 2016
 - Increased number of locations
 - Updated to include new STARS data

- **Release 3.3**

- Deployment in 2017
 - Includes new messages and bandwidth reductions



STDDS R3.3 Updates

- **SMES**

- Only new messages added; only received if subscription changed
- Non-Movement Area (NMA) data publication derived from MLAT and ADS-B CAT10 data published by ASDE-X/ASSC
- ASDE-X/ASSC Safety Alerts publication

- **APDS**

- Add airport identifier to payload of messages
- Downsample RVRDataUpdate messages



STDDS R3 Updates

- **TAIS**

- Add latitude/longitude to track points
- Filter out flights above FL180 to reduce bandwidth

- **URN Namespace and Header Property**

- e.g. *us:gov:dot:faa:atm:terminal:entities:smes:v3-0*
- *version = 3.0*

Interfaces must be updated to R3.3 or messages may be dropped or fail!



STDDS R3.3 Schedule

- **Key Dates**

- Keysites

- **Bradley (Y90)** begins January 23, 2017

- Y90, ALB, ROC, KBAF, KBDL, KORH

- **Southern California TRACON (SCT)** begins February 20, 2017

- SCT, SBA, KBUR, KLAX, KLGB, KONT, KSAN, KSNA, KVMY

- **Charlotte (CLT)** begins February 27, 2017

- CLT, GSO, AVL

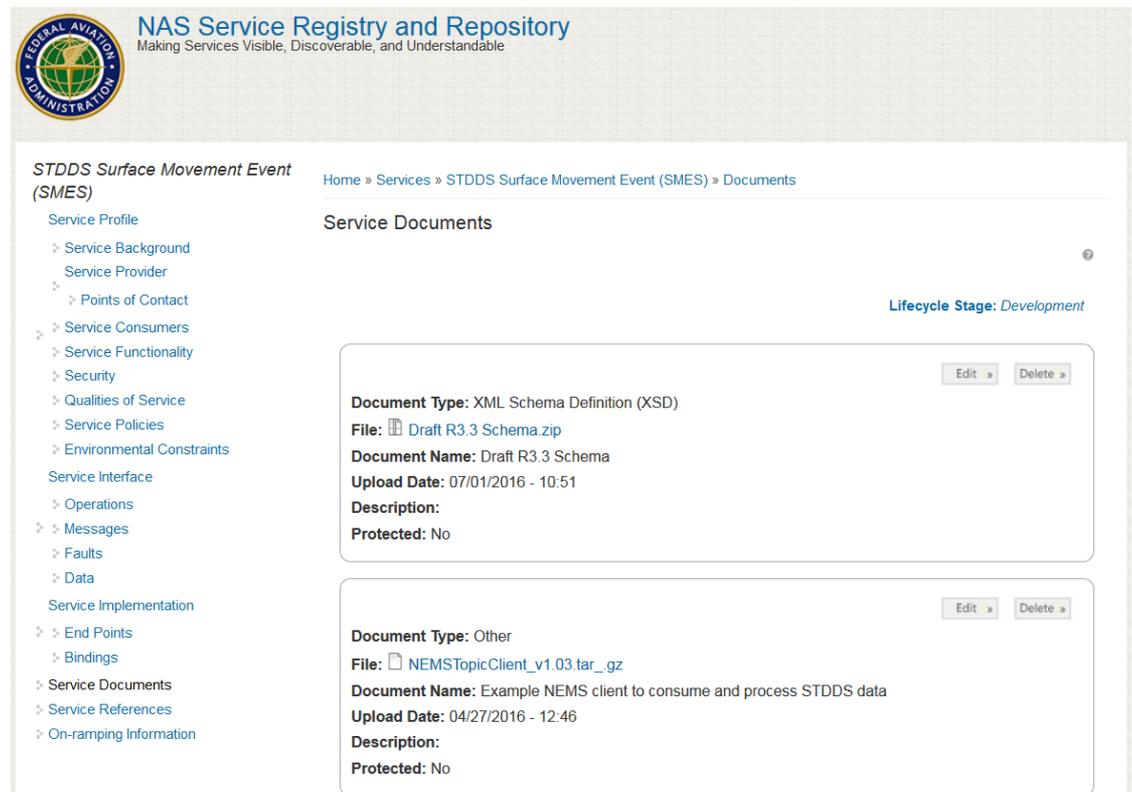
- **Jacksonville (JAX)** begins March 20, 2017

- JAX, SAV, TLH

- Waterfall deployment begins Spring 2017 through Summer 2017

STDDS R3.3 Documentation

- Found in [NSRR](#)
- Located in each STDDS service catalog, in Service Documents link
- [R3.3 Release Notes](#) (same file in all STDDS catalogs)
- R3.3 Schema
- R3.3 JMSDDs
- R3.3 Sample data



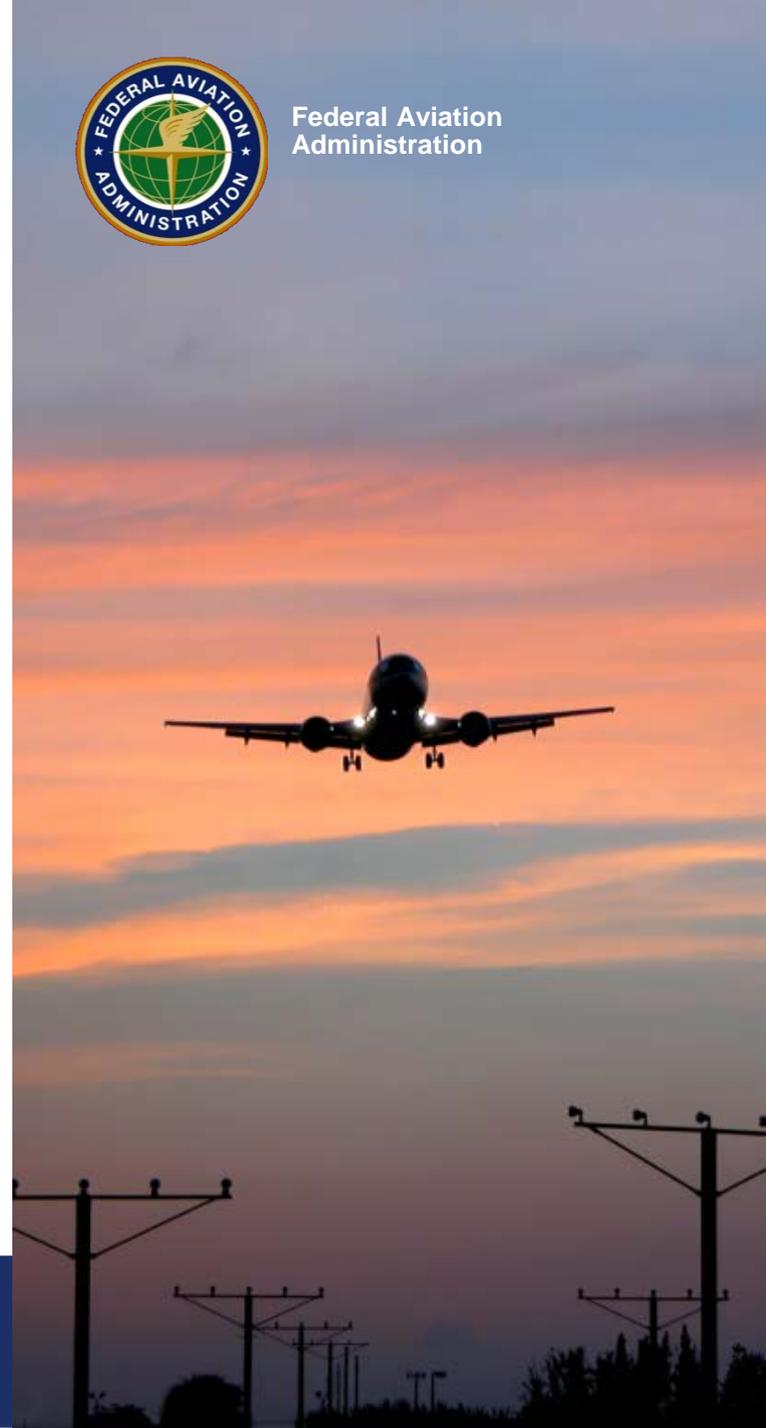
The screenshot displays the NAS Service Registry and Repository interface. At the top, the logo of the Federal Aviation Administration is visible alongside the text "NAS Service Registry and Repository" and the tagline "Making Services Visible, Discoverable, and Understandable". The main content area is titled "STDDS Surface Movement Event (SMES)" and includes a breadcrumb trail: "Home » Services » STDDS Surface Movement Event (SMES) » Documents". A left-hand navigation menu lists various service profile sections, including "Service Profile", "Service Background", "Service Provider", "Points of Contact", "Service Consumers", "Service Functionality", "Security", "Qualities of Service", "Service Policies", "Environmental Constraints", "Service Interface", "Operations", "Messages", "Faults", "Data", "Service Implementation", "End Points", "Bindings", "Service Documents", "Service References", and "On-ramping Information". The "Service Documents" section is currently active, showing a list of documents. The first document is an XML Schema Definition (XSD) file named "Draft R3.3 Schema.zip", uploaded on 07/01/2016 at 10:51. The second document is an "Other" file named "NEMSTopicClient_v1.03.tar_gz", uploaded on 04/27/2016 at 12:46. Both documents are marked as "Protected: No" and have "Edit" and "Delete" buttons.

SFDPS Update

December 8, 2016



Federal Aviation
Administration



Agenda

- SFDPS Release 1.3.0
- Consumer On-Ramping Processes
- Consumer Migration Timeline
- Solace Testing
- Current Status
- Consumer Migration Summary
- Additional Information



SFDPS Release 1.3.0

- Provides batching of track data and other functions
- Will be configured to provide 12 second updates in the operational environment
- Currently available in R&D and FNTB environments
- Will become operational in February 2017
- Requires consumers to update their clients to interpret the new batched message format and to connect via a Solace appliance



Consumer On-ramping Processes

1.R&D Environment

- Ready to accommodate consumer testing activities with both SFDPS Release 1.3.0 and Solace
- Your assigned FAA project lead can assist with getting connected to R&D Solace and SFDPS
- A lead-time of 2-3 weeks is required to configure the R&D environment for consumer testing

2.FTI National Test Bed (FNTB)

- Ready to accommodate consumer testing activities with both SFDPS Release 1.3.0 and Solace
- New Solace consumers are required to undergo FNTB formal interoperability testing
- A lead-time of 3-4 weeks is necessary to configure the FNTB environment for consumer testing

3.Operations

- After FNTB testing has been successfully completed, it takes 2-4 weeks to get connected to the production environment

** Note that the above timeframes are for existing consumers only. Consumers that do not have access to R&D, FNTB, and production NEMS will require additional time to get connected.

Consumer Migration Timeline

- **Schedule:**

- R&D currently available for SFDPS Release 1.3.0 and Solace testing
- FNTB was being upgraded and has been unavailable for testing since November 28. However, SFDPS Release 1.3.0 and Solace testing will resume on December 8.
- 1/31/2017
 - Last call for FNTB testing. After this date it is too late to complete FNTB testing in time for the February cut-over.
- 2/2017
 - SFDPS Release 1.3.0 cut-over to production NEMS. Consumers must be ready to switch from SFDPS Release 1.2.9 to SFDPS Release 1.3.0 on this date, or risk losing their data.

- **1.3.0 On-Ramping Moratorium:**

- Since the SFDPS Release 1.3.0 Publisher will not be available in production until February, consumers that have finished with their 1.3.0 development and testing will have to wait until February to consume SFDPS Release 1.3.0 data from production.
- In limited cases, for some consumers, early connectivity to production NEMS before February may be possible. Please work with your FAA project lead to determine your suitability.

Solace FNTB Qualification Testing

- **All consumers new to Solace must undergo FNTB qualification testing**
- **For existing SWIM consumers who have successfully undergone Solace FNTB qualification testing, a requirement for mandatory FNTB testing specific to SFDPS has been waived**
 - Once a consumer has successfully completed Solace FNTB qualification testing, a change to a Solace subscription (adding or removing data products) does not require an FNTB re-test
 - Existing SFDPS Release 1.2.9 consumers who have already undergone Solace FNTB qualification testing will need to update their clients to be compatible with SFDPS Release 1.3.0; however, formal FNTB testing is NOT required
 - New SFDPS consumers who have already undergone Solace FNTB qualification testing for another SWIM Service (for example: TFMS, TBFM) will need to develop an SFDPS Release 1.3.0 compatible interface, but formal FNTB testing is NOT required



Current Testing Status

- Forty consumers currently consume data from SFDPS Release 1.2.9 in production. Only **six** have successfully completed both FNTB qualification testing with Solace and testing client compatibility with SFDPS Release 1.3.0. If you are one of these six:
 - **Congratulations, you are ready for SFDPS Release 1.3.0**
- If you have completed FNTB qualification testing with Solace, and are in the process of testing client compatibility with SFDPS Release 1.3.0 in R&D:
 - **Congratulations, you are halfway there**
- If you have completed FNTB qualification testing with Solace, but have not yet started testing your client for compatibility with SFDPS Release 1.3.0:
 - **Work with your FAA project lead to ensure a Solace queue has been provisioned for you in R&D, and test your client to work with data from SFDPS Release 1.3.0 in the R&D environment**



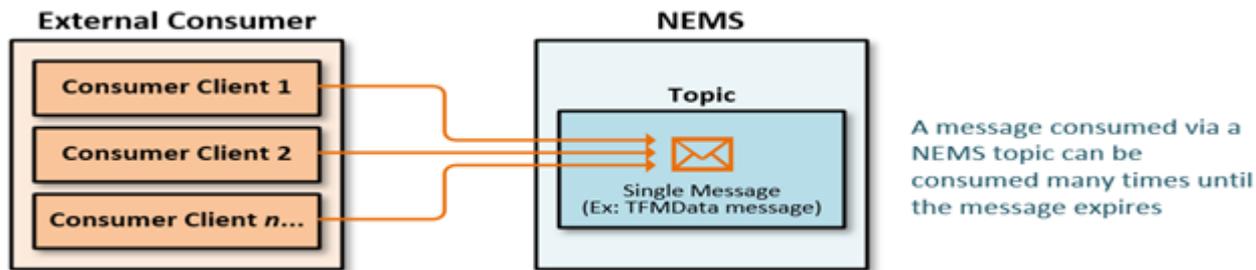
Current Testing Status

- If you are in the process of testing your client for compatibility with SFDPS Release 1.3.0, but have not completed FNTB qualification testing with Solace:
 - **Talk to your project lead to provision queues in FNTB and production and get in the queue for FNTB qualification testing with Solace**
- If you have neither tested your client for compatibility with SFDPS Release 1.3.0 nor conducted FNTB qualification testing with Solace and are connected to OEX/ACY:
 - **Since FNTB qualification testing is mandatory, it is imperative that you contact your FAA project lead, or you will lose your feed**
- If you currently have connections to both Atlanta/Salt Lake City **and** Oklahoma City/Atlantic City, you may have to have a Solace-compatible client in one instance, and a NEMS-compatible client in the other:
 - **Check with your FAA project lead about anything special you may need to do**

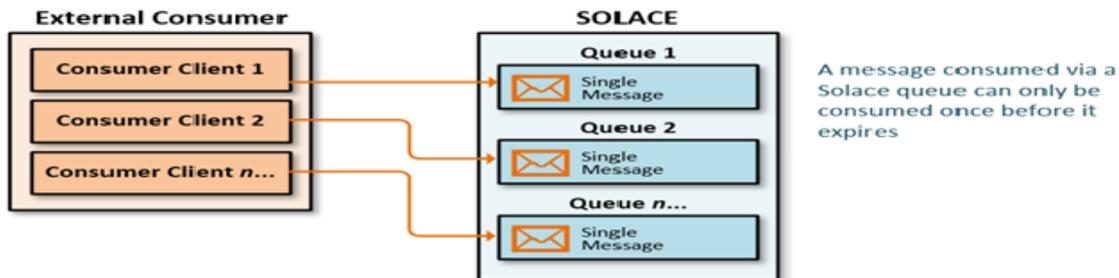


Data Consumption from Solace vs. NEMS

- **NEMS provides topics for consumption of data. Consumers with multiple clients are able to consume the same message before it expires from a topic with each client.**



- **Solace utilizes queues, allowing only a single client to consume a message before the message expires**



Data Consumption from Solace vs. NEMS

- **New consumers will be allowed to consume a single copy of NAS data per NESG**
 - A fan-out mechanism internal to the consumer organization should be developed to distribute copies of a message to multiple clients
- **Existing consumers with multiple clients consuming the same message from a NEMS topic who are moving to Solace will be provided with a grace period (of approximately one year) to implement internal mechanisms to distribute data to multiple clients**
 - Please work with your FAA project lead if you need additional Solace queues configured for each of your clients currently consuming data from the same topic

Consumer Migration Summary

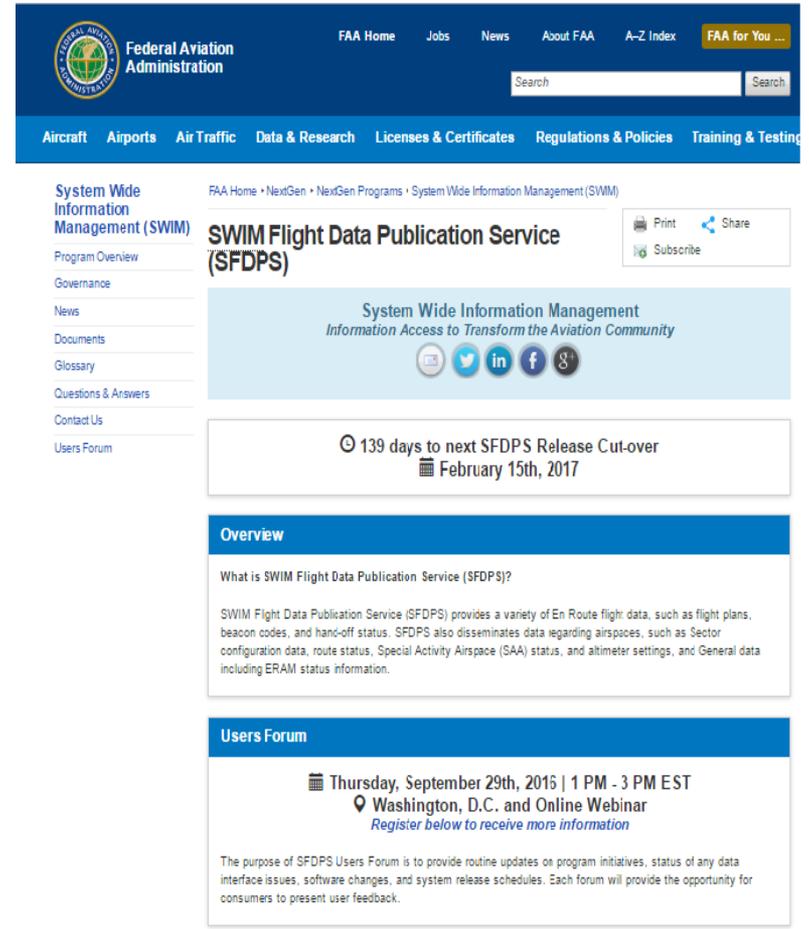
- Migration to SFDPS Release 1.3.0 from SFDPS Release 1.2.9 will be in the form of a cut-over event
- If you have not met all of your migration milestones for the SFDPS Release 1.3.0 migration, you may lose access to the SFDPS data
- Consumers will be treated on a first-come-first-served basis for R&D and FNTB qualification testing
- We urge you to update your consumer client to be compatible with SFDPS Release 1.3.0 and undergo the prerequisite testing activities early, to avoid losing your data from SFDPS



The SFDPS Web Page

- SFDPS user forum announcements
- User forum presentations
- Q&As on SFDPS topics
- SFDPSConnect tutorial videos

www.faa.gov/nextgen/programs/swim/sfdps/



The screenshot shows the Federal Aviation Administration (FAA) website for the SWIM Flight Data Publication Service (SFDPS). The page features a blue header with the FAA logo and navigation links. A search bar is located in the top right. Below the header, a navigation menu includes links for Aircraft, Airports, Air Traffic, Data & Research, Licenses & Certificates, Regulations & Policies, and Training & Testing. The main content area is titled "SWIM Flight Data Publication Service (SFDPS)" and includes a "System Wide Information Management" banner with social media icons. A prominent announcement states "139 days to next SFDPS Release Cut-over February 15th, 2017". The "Overview" section explains that SFDPS provides En Route flight data, including flight plans, beacon codes, and hand-off status. The "Users Forum" section announces a webinar on Thursday, September 29th, 2016, from 1 PM to 3 PM EST in Washington, D.C., and provides a link to register for more information.

FAA Contacts

- **New SFDPS Consumers:**

- If you have not yet been assigned an FAA project lead, use the Data-to-Industry@faa.gov email address to request consumption of SFDPS data

- **Existing SWIM Consumers:**

- Work with your assigned FAA project lead to get started with SFDPS 1.3.0

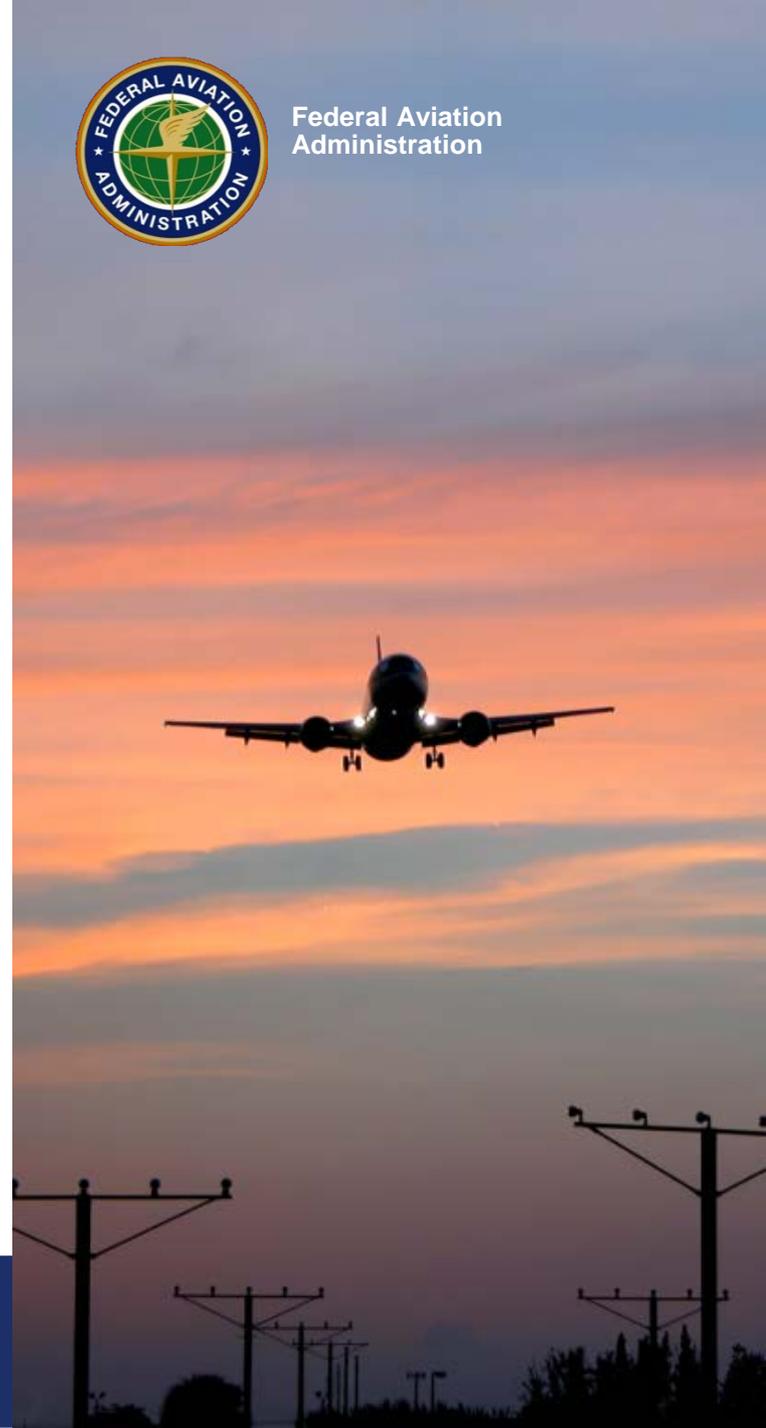


Common Support Services- Flight Data (CSS-FD)

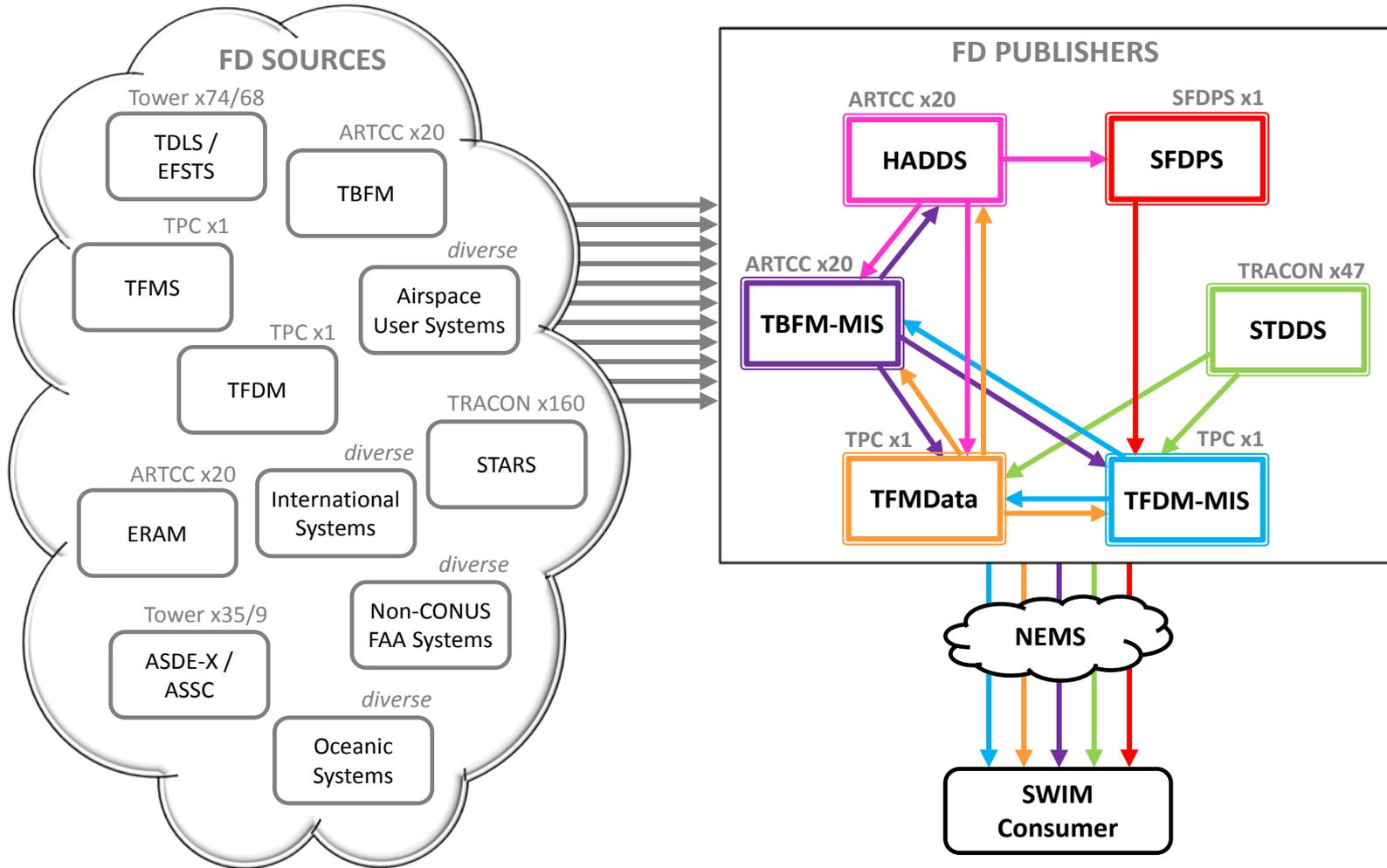
December 8, 2016



Federal Aviation
Administration



Flight Data Sharing Today



Current Flight Data Sharing Benefits

- Due to SWIM, flight data is now accessible via a single interface, utilizing the same communication protocols and physical connections
- Infrastructure supports access to flight data for all types of users, both internal and external to the NAS
- Utilizes a Service Oriented Architecture (SOA)
- Interfaces are standards-based (e.g., OGC web services, JMS)
- Data formats are all in XML



Flight Data Sharing Shortfalls

- **Data Quality:**

- Services unintentionally publish conflicting data
- Flight data is difficult to correlate, sometimes resulting in data updates being applied to the wrong flights
- Adding new data elements to existing systems can be a lengthy and complicated process

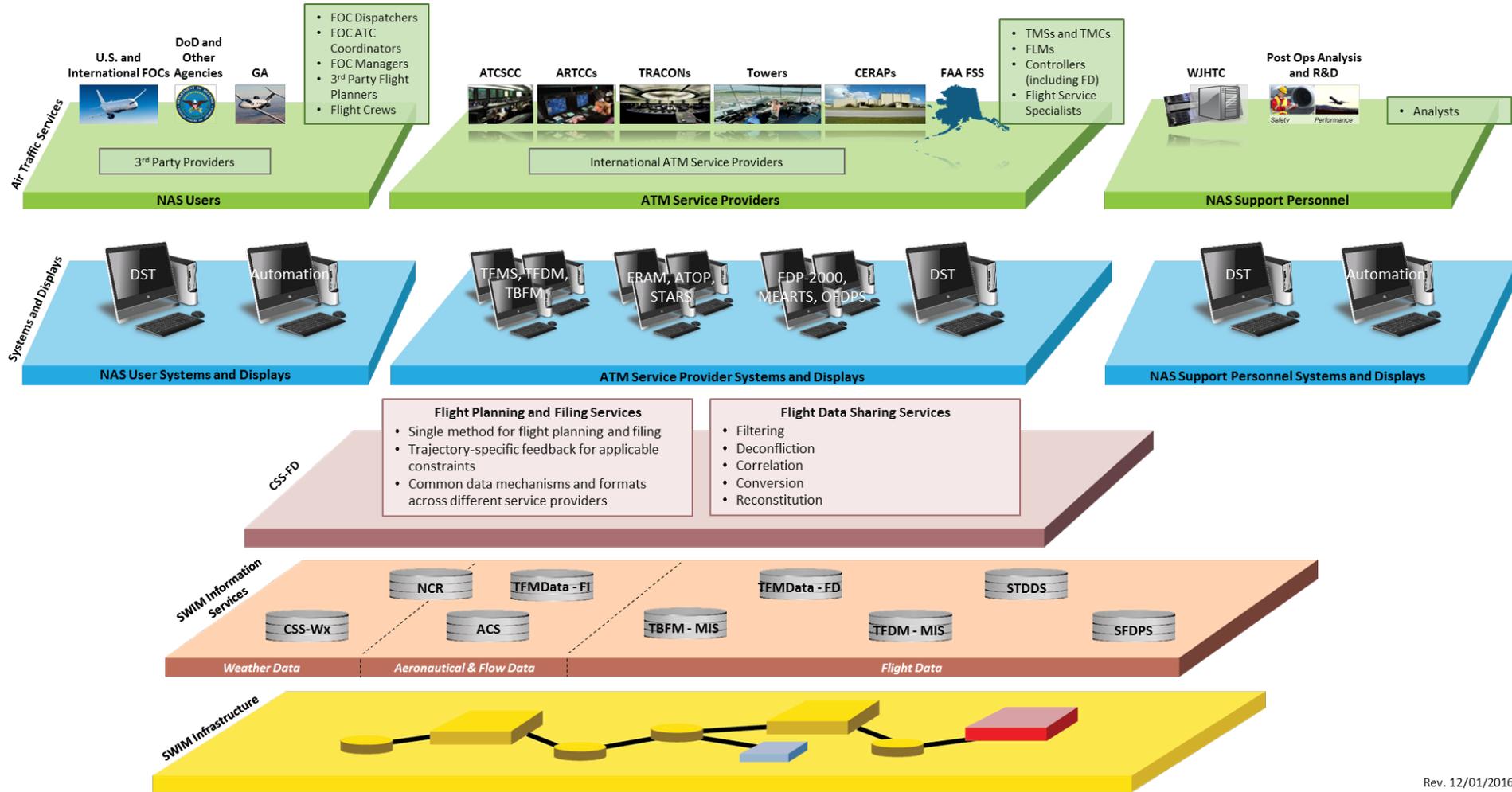
- **Costly Development:**

- Consumers must implement redundant processing
- Unnecessary bandwidth is needed due to redundant publication of data
- Flight data is published using different XML schemas
- Limitations and inconsistencies across services exist for consumers to customize data feeds
- Reconstitution capabilities are varied and limited

- **Data Access Controls**

- Inconsistent rules for access to flight data
- Different systems provide different filtering criteria

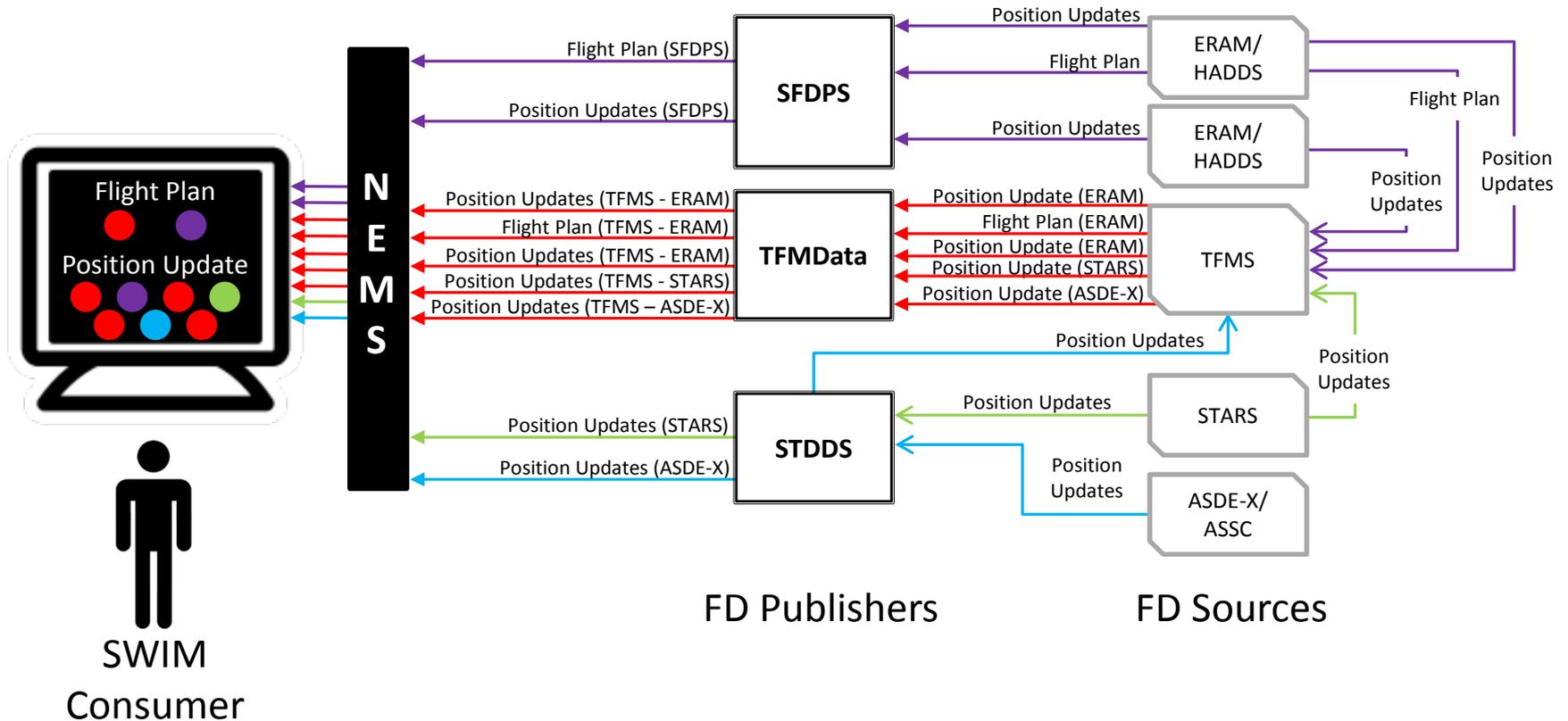
CSS-FD Concept Overview



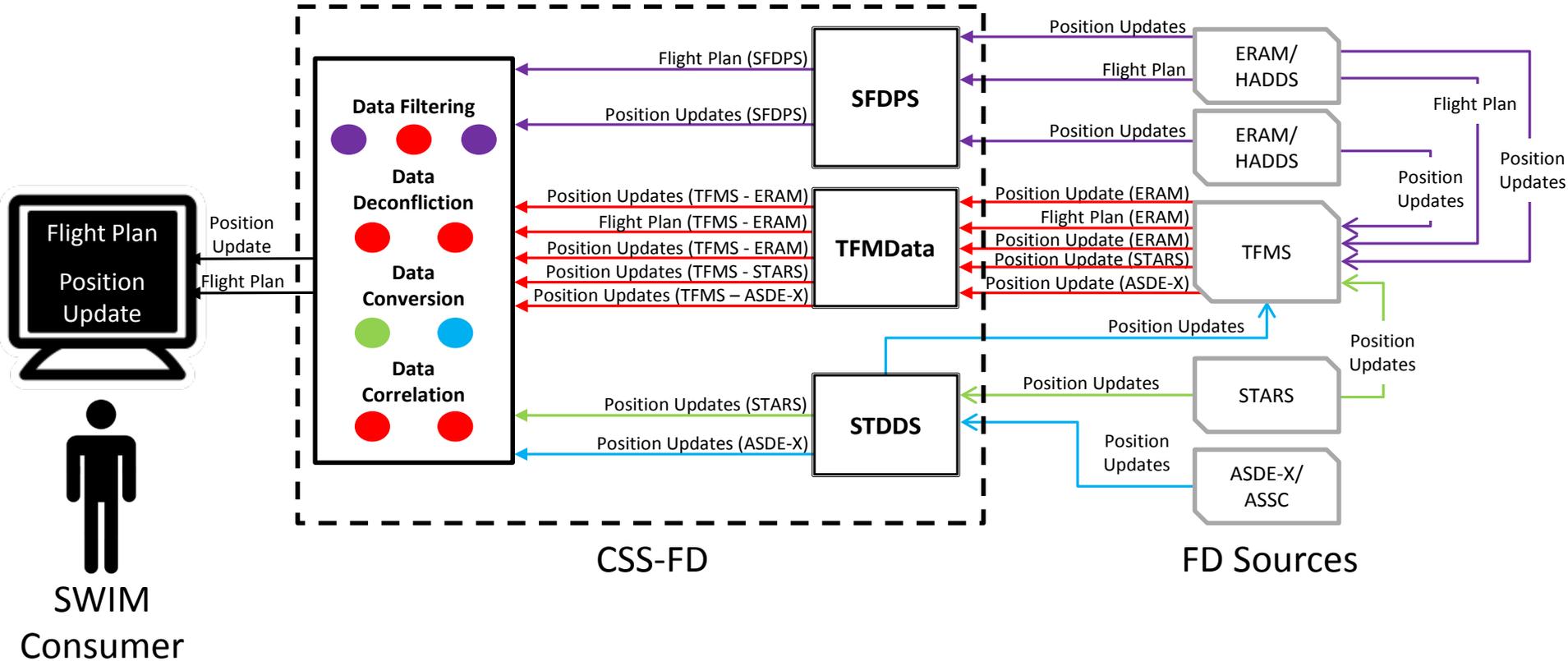
Rev. 12/01/2016



Data Publication Today



Data Publication with CSS-FD



CSS-FD Schedule and Plans

- Final Investment Decision (FID) is planned for late 2019
- Implementation targeted for completion no later than 2023
- **Currently developing the Concept of Operations, and you can play a role in shaping it!**



Ways to Help Shape CSS-FD

- Current SWIM consumers of flight data (that's you!) have the first-hand experience of both the benefits and challenges of using these services
- This is your organization's opportunity to help drive the requirements for an enhanced flight data sharing infrastructure
- How?
 - On-line survey : <https://goo.gl/wRStnr>
 - Direct contact via email: Jon Cunningham, jcunningham@mosaicatm.com



Sample Survey Questions

- What SWIM or non-SWIM flight data do you currently or plan to subscribe to?
- What type of data processing does your business perform for each flight data source you utilize?
- How do you currently reconcile overlapping, and maybe conflicting data, across data sources?
- Describe any filters that are applied to the flight data that you consume.
- When your flight data feeds are missed due to feed interruptions or network connectivity problems, what impact can this have on your operation?



Questions?

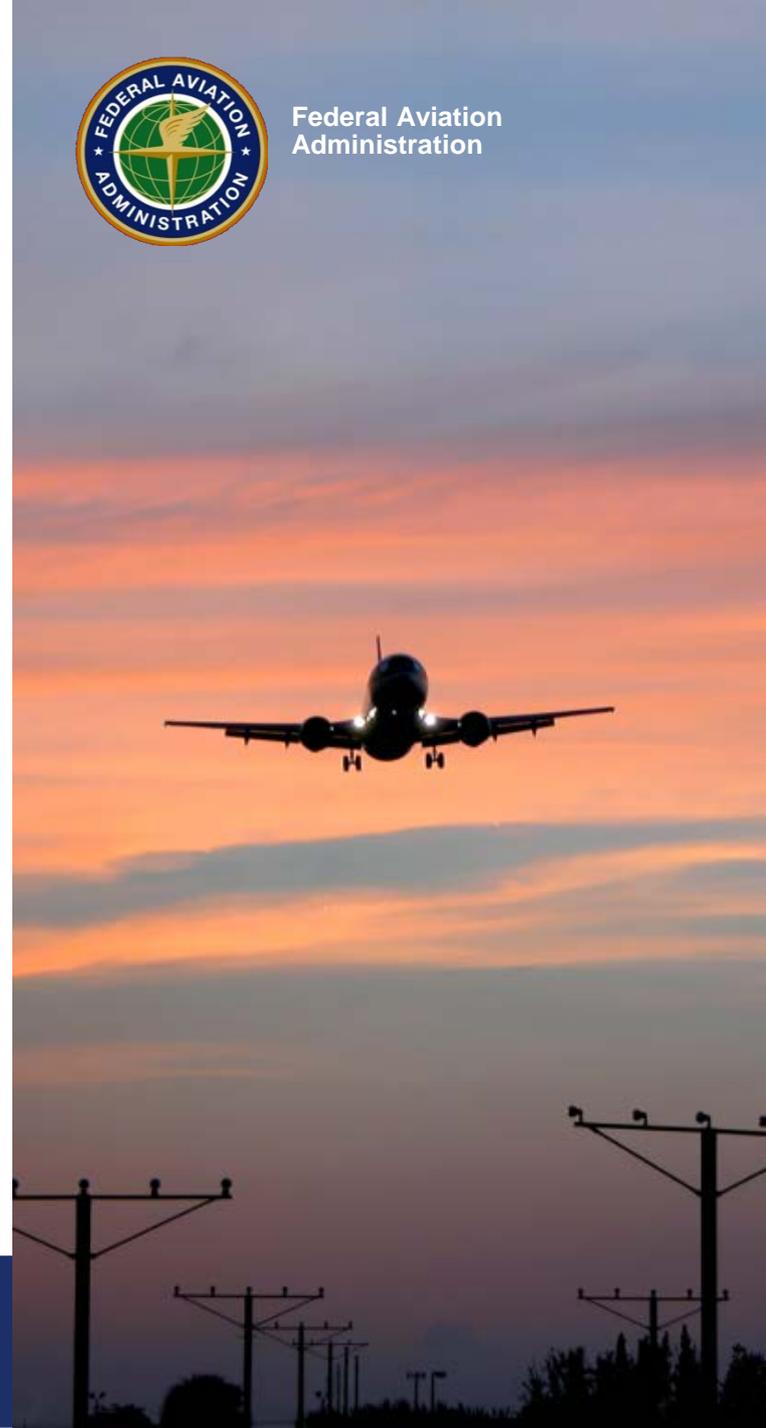


NEMS Availability

December 8, 2016



Federal Aviation
Administration

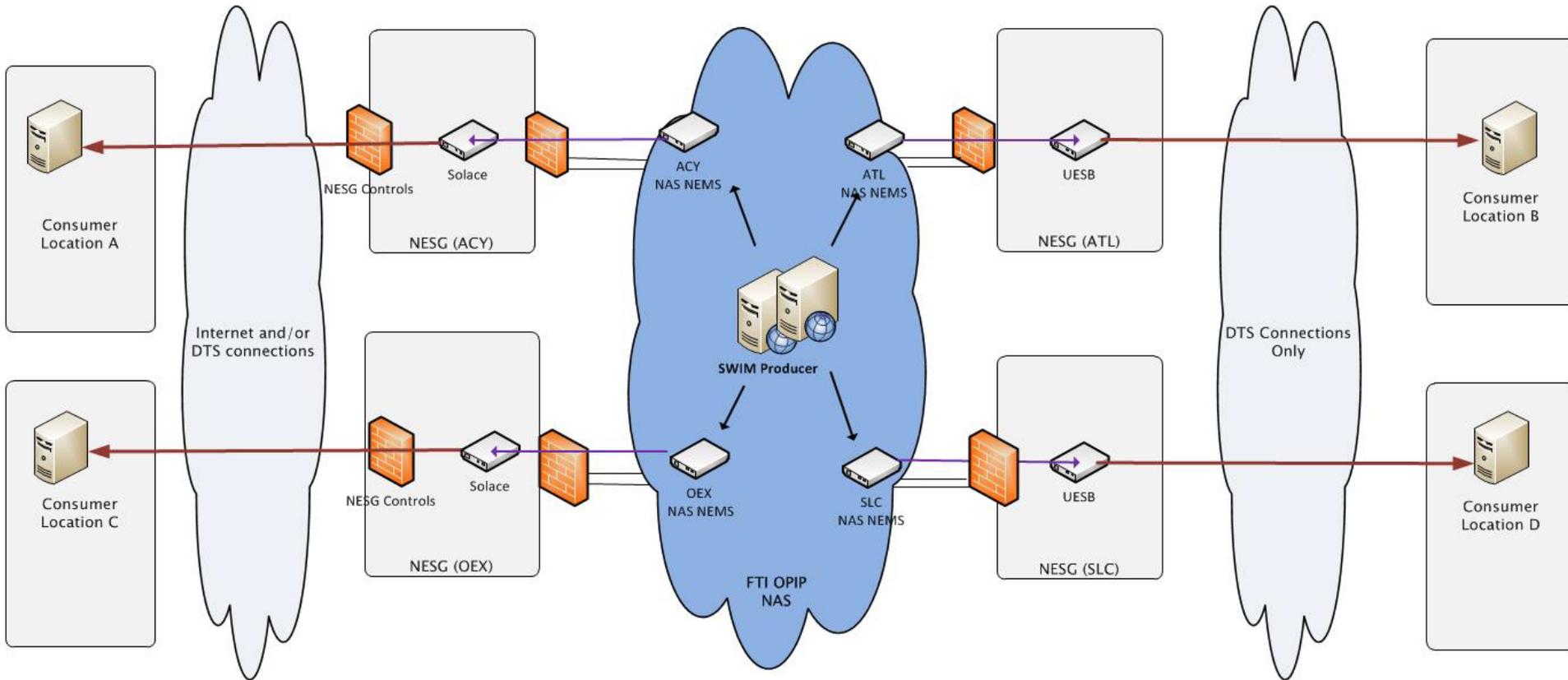


NEMS Availability

- **Strongly recommend multiple connections to SWIM via multiple NESGs**
 - Strong preference is at least one dedicated telecom service (DTS) connection with sufficient bandwidth to support consumer's critical FAA data needs
- **Consumer is responsible for determining whether manual or automated failure will be implemented in their network and/or SWIM consumer infrastructure**
- **All data available via JMS is available at each of the four NESG locations w/following caveat**
 - High volume services such as SFDPS and TAIS that require Solace must be accessed via ACY and/or OEX NESG and SWIM Solace
- **AIM FNS data via Web Services is available as follows:**
 - Primary location = Oklahoma City, connection must be via OEX NESG
 - DR/Business Continuity location = Atlantic city, connection must be via ACY NESG



SWIM Connectivity Options



SWIM Availability Planned Improvements

- **Short Term**

- AIM FNS developing improved Disaster Recovery / Business Continuity Plan in conjunction with SWIM

- **Medium Term**

- SWIM developing best practice documentation for SWIM consumer failover

- **Long Term**

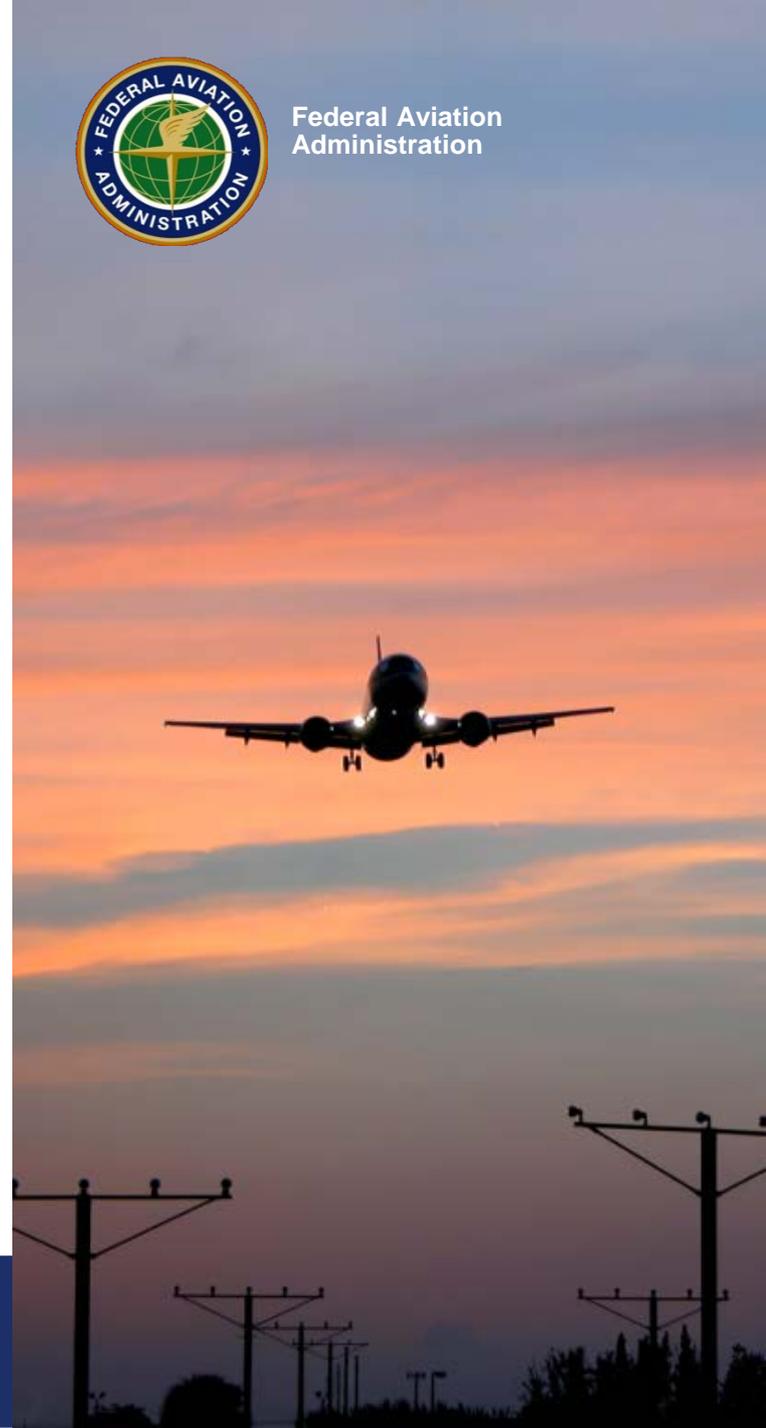
- SWIM exploring options for providing notifications via JMS (Advanced Monitoring) to alert consumers to planned maintenances, producer outages, etc.

Q&A and News

December 8, 2016



Federal Aviation
Administration



Before we go...

- **1-1 Airline Stakeholder Meetings**
- **Internal FAA NAS Program Stakeholder Meeting**

- **Call for presentations from our Users**
 - How has your organization leveraged SWIM data?
 - Would you like to share your experience at a future Users Forum?
 - If you're interested (with corporate approval), contact swim@faa.gov

- **The next Users Forum: March 9, 2017**

- **Any questions, comments, or suggestions for future Users Forums, please contact us: swim@faa.gov**



Thank you for joining us!

Happy
Holidays!

See you in 2017!