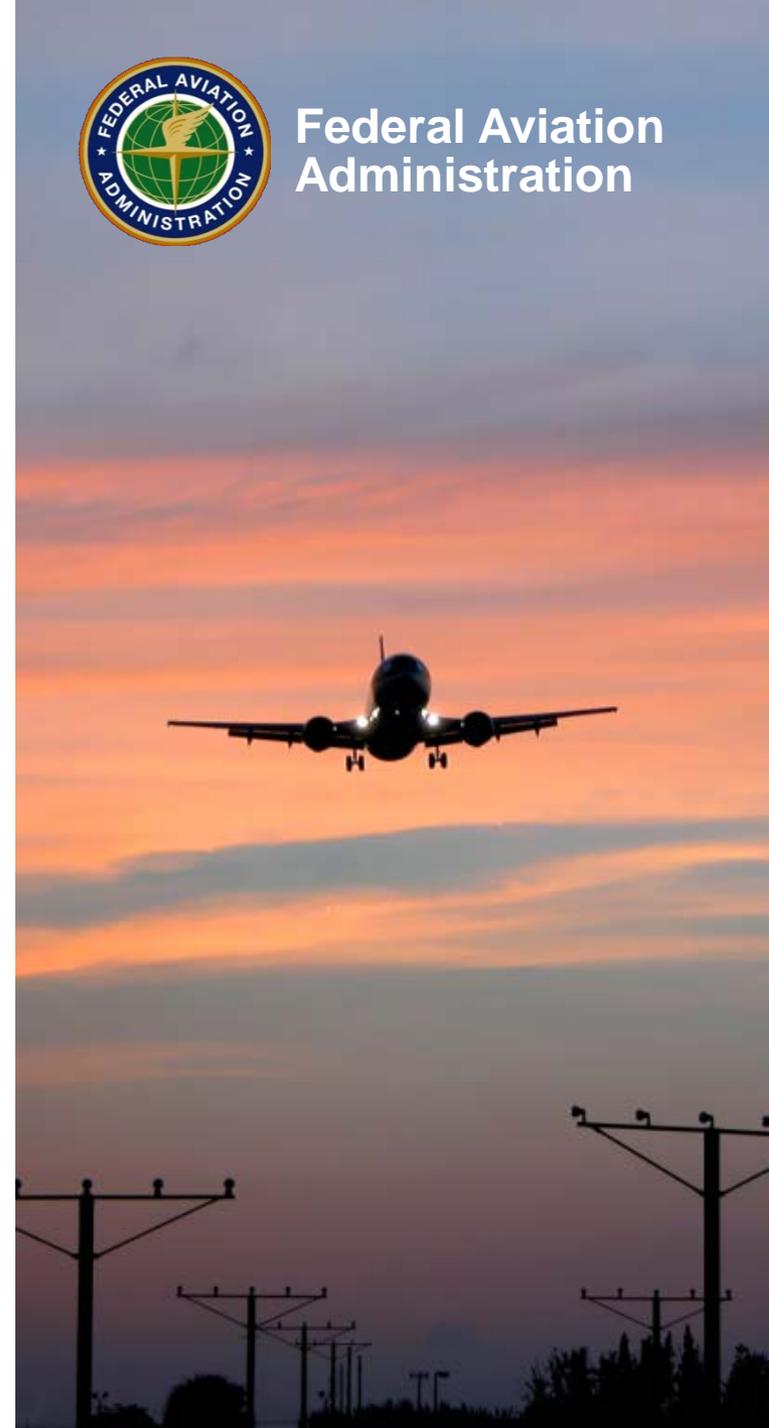# SWIM Users Forum – Session # 6

Federal Aviation Administration

By: SWIM Program Office

To: SWIM Consumers

Date: August 13, 2015

User Forum Logistics

- **Date:**
  - August 13, 2015 - 2:30 pm – 4:00pm

- **Location:**
  - Noblis Lakes Conference Rm – A&B

- **Go-to-Meeting: Please register for "SWIM Users Forum" at SWIM Website:**

- **http://www.faa.gov/nextgen/programs/swim/users_forum/, http://1.usa.gov/1HyD6SW**

- **User Forum briefing distributed via invitation & on SWIM website (www.faa.gov/nextgen/programs/swim/user-forum)**

Federal Aviation Administration

Agenda

- **User Forum Overview & Program Updates**
  - Joe Lahoud/Chris Pressler
- **Active MQ Update**
  - Chris Pressler
- **NSRR Refresher**
  - Brian Love
- **ASSC Waterfall Schedule**
  - Brian Love
- **TAIS Update**
  - Julia Korey
- **SWIM 90 day Calendar**
  - Joe Lahoud/Chris Pressler
- **Open Discussion – All**
  - Online survey link at the end of the briefing

SWIM Users Forum - Overview

- **Purpose:** Monthly forum for SWIM Users to obtain program updates, provide feedback, obtain answers to SWIM related questions or data concerns

- **Scope: SWIM Portfolio of Services**
  - Aeronautical Data
  - Flight and Flow Data
  - Weather Data

Federal Aviation Administration

SWIM Users Forum - Overview

- **Forum Participation:**
  - NAS and non-NAS consumers
    - Airlines, Industry service providers, research & development, FAA Programs, Airports
    - Average 70 – 90 attendees: 1st three sessions

- **SWIM Resources:**
    - SWIM website: http://www.faa.gov/nextgen/programs/swim/
    - NSRR: https://swimrep.faa.gov/soa
    - SWIM Help Desk:
      - **1-855-FAA-NEMC** (*855-322-6362*) Option #3, "Enterprise Services" for phone support
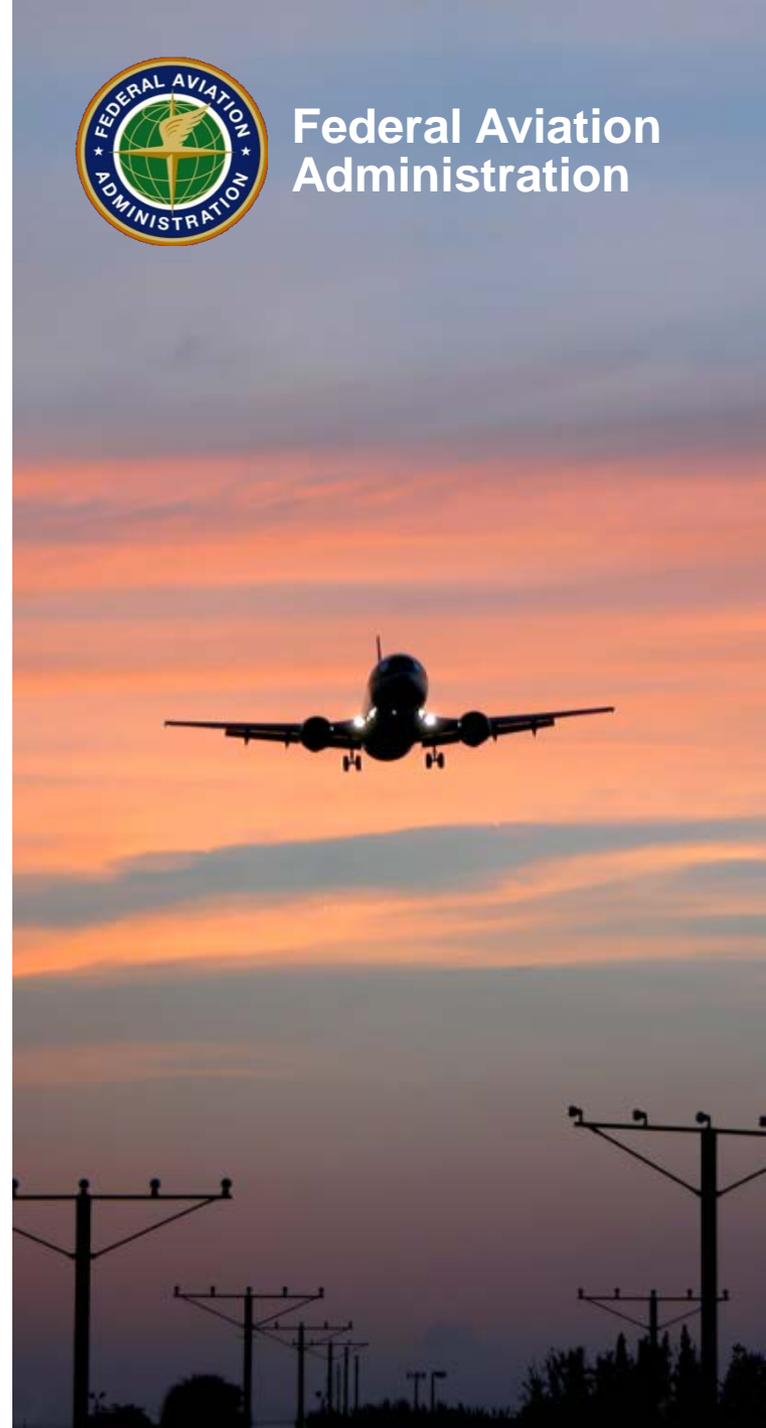   - **NEO-ES@faa.gov** for email support

Notice to External consumers of FAA data sets via SWIM

Federal Aviation Administration

Chris Pressler

Lead Engineer, SWIM Program

chris.pressler@faa.gov

Notice

- **The FAA has an approved list of JMS Client implementations versions for use by external consumers of FAA data sets via SWIM.**

- **The FAA will be notifying all *external consumers of FAA data sets via SWIM* to ensure that only that only an approved JMS Client implementation version is used to connect to SWIM.**

- **External consumers of FAA data sets via SWIM that do not comply with the notice will be disconnected from SWIM after a pre-determined time.**

Federal Aviation Administration

FAA approved JMS Client implementation versions

Vendor	JMS Client Implementation	Version
Oracle	WebLogic 11g	10.3.5.0
FuseSource	ActiveMQ	5.5.1
Solace	Solace	7.1.0.207

Notice (cont.)

- **External consumers of FAA data sets via SWIM may NOT change between JMS Client implementation vendors.**

- **There is no requirement to perform R&D testing or FNTB verification activities if the JMS Client implementation version is changed.**

- **External consumers of FAA data sets via SWIM may contact the FAA Enterprise Service Desk representatives or the assigned SWIM Point of Contact as described in the Notice.**

NSRR Update
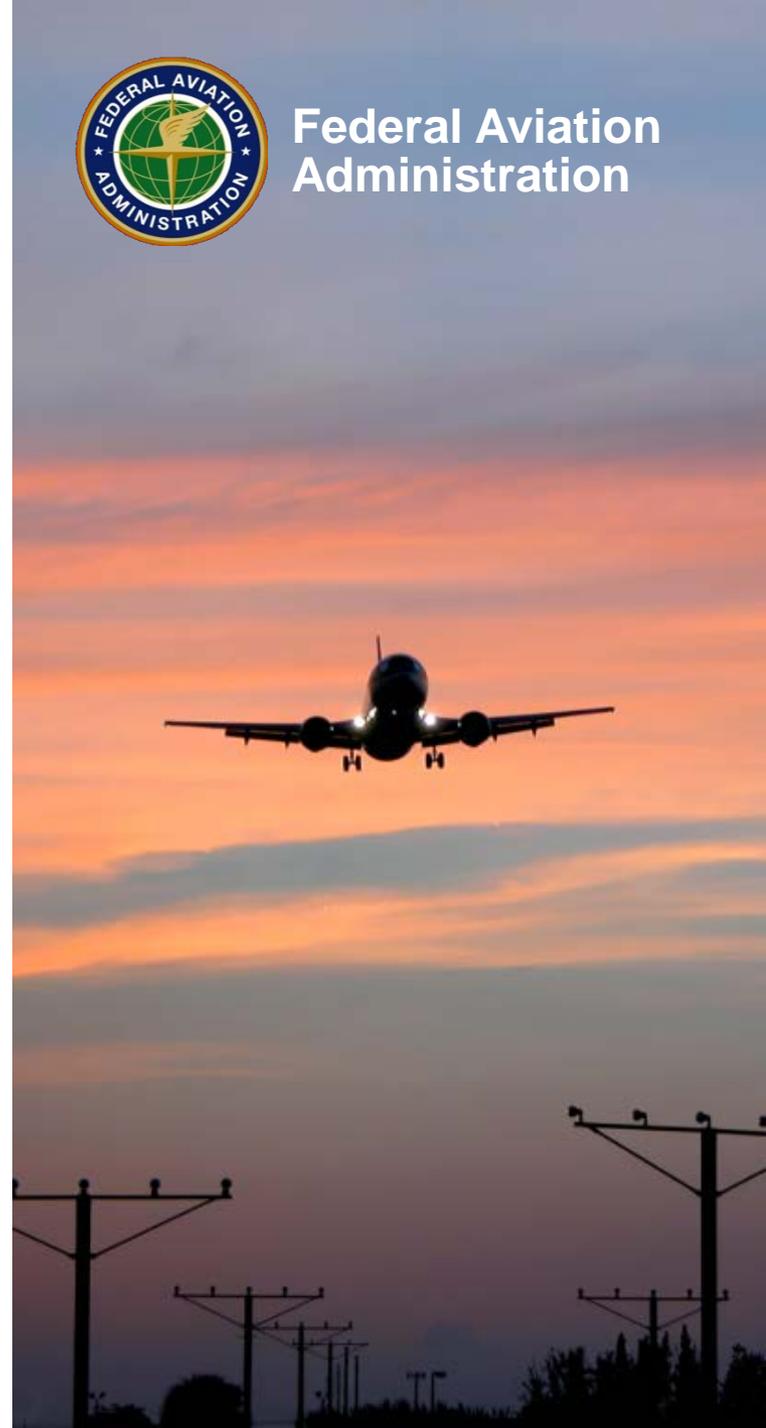
Brian Love

Engineer

Brian.Love@flatironssolutions.com

Federal Aviation
Administration

NSRR

- **NAS Service Registry/Repository**
- **URL: https://swimrep.faa.gov/soa**
- **Request an Account**
  - Affiliation:
    FAA Business Partner, FAA Contractor, FAA
  - Access Type:
    Read-Only, Provider, Consumer
- **Account created within 2 business days**

STDDS NSRR Demo Preview

- **NSRR Service Catalog Browser**
  - Filtering
  - Favorites
  - Lifecycle Stage
- **5 STDDS Service Catalogs**
  - STDDS Airport Data
  - STDDS Infrastructure System Monitor and Control
  - STDDS Surface Movement Event
  - STDDS Terminal Automation Information
  - STDDS Tower Departure Event

STDDS NSRR Demo

STDDS NSRR Demo (cont'd)

- **STDDS Services Documentation**
  - Generally the same for all 5 services
    - TAIS is still in Development stage
  - Currently about ~~13~~ 15 documents
  - Some oriented towards FAA needs/processes
  - Others oriented towards service consumers
- **General service documentation**
  - STDDS Site Data Availability.xls (updated)
    Table showing which airports supply which STDDS data
  - NEMSTopicClient_v1.02.tar.gz
    Sample client code

STDDS NSRR Demo (cont'd)

- **New STDDS R3.2 documentation:**
  - STDDS R3.2 Release Notes.docx
    Provides brief details on R3.2 changes
  - Draft-stdds-r3.2-schemas-20150511.zip
    All STDDS R3.2 XML message schemas (XSDs)
  - Draft <svc> JMSDD.docx
    Textual details of R3.2 messages
  - <svc> Sample Data R3.2.zip

STDDS NSRR Demo (cont'd)

- **Old STDDS R3.1 documentation:**
  - STDDS_WSDD_R3.1.docx
    Web Service Description Document, provides details of the XML messages and their data elements
  - STDDSExternalInterfaces.zip
    The XML message schemas (XSDs), for R3.1

ASSC Waterfall Schedule

ASSC Site	Target STDDS data publication
SFO	June 2014
CLE	October 2015
MCI	December 2016
CVG	April 2017
PIT	February 2018
PDX	March 2018
MSY	April 2018
ANC	November 2018
ADW	TBD

Federal Aviation Administration

TAIS Update

Julia Korey

Systems Engineer

Julia.Korey@flatironssolutions.com

Federal Aviation
Administration
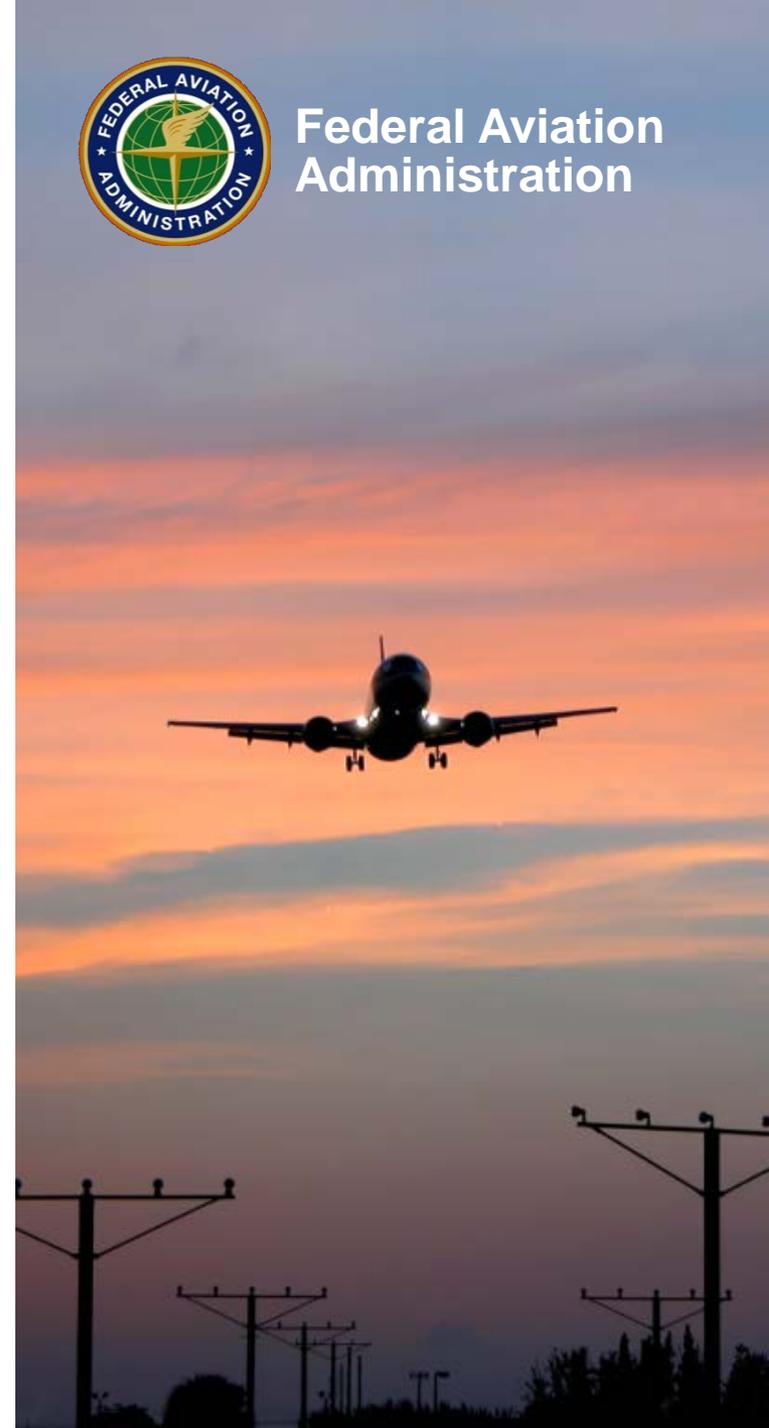
STDDS TAIS Overview

- **STDDS will subscribe to the GeNUS interface and receive all 7 AIG messages**
- **The STDDS Terminal Automation Information Service will publish STARS data in XML via NEMS/NESG**
- **All G4/ELITE STARS sites will be supported by STDDS**
  - G1/G2 sites will be temporarily supported until converted to G4/ELITE
  - ARTS sites will not be supported until they are upgraded to STARS
- **A total of 156 STARS sites will be supported**
  - 105 sites to be deployed FY16, in STDDS 3.2
- **First key site (Y90) is scheduled to be deployed in early January 2016; Second is NCT February 2016**
- **Waterfall deployment begins Summer 2016**

STDDS Context Diagram
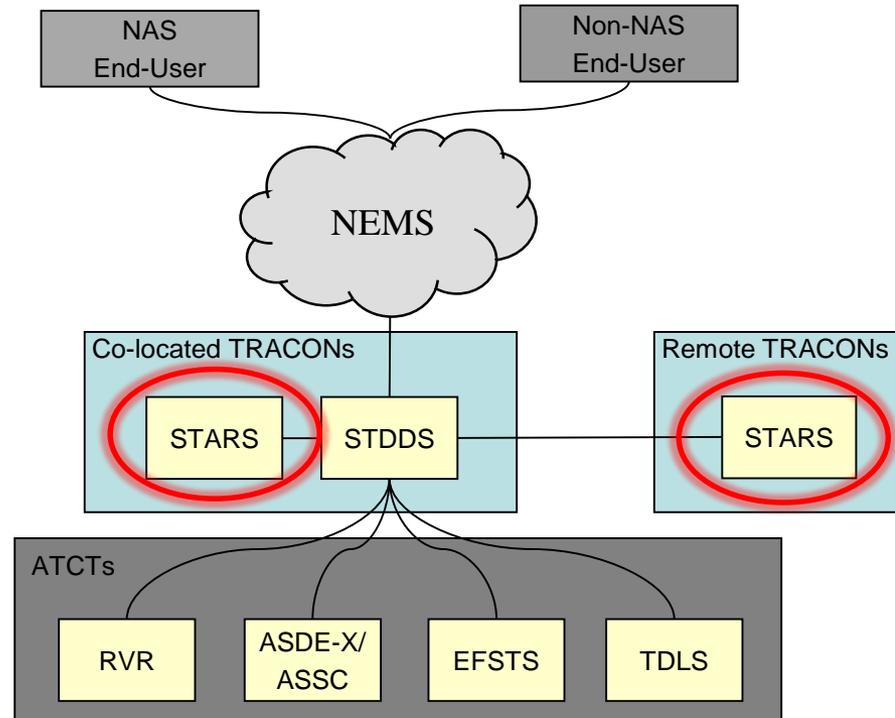
Acronyms:

ASDE-X	– Airport Surface Detection Equipment Model X	NEMS	– NAS Enterprise Messaging Service
ASSC	– Airport Surface Surveillance Capability	RVR	– Runway Visual Range
ATCT	– Air Traffic Control Tower	STARS	– Standard Terminal Automation Replacement System
EFSTS	– Electronic Flight Strip Transfer System	STDDS	– SWIM Terminal Data Distribution System
NAS	– National Airspace System	TDLS	– Tower Data Link Services
		TRACON	– Terminal Radar Approach Control

STDDS Data Flow

ASDE-X / ASSC

System Track Report
Generic Flight Plan
System Status
Heartbeat

RVR

RVR

EFSTS

Heartbeat
Scanner
Flight Plan Departure
Runway
Pre-Scan

TDLS

TDLS Status
Clearance
Delivered

STARS

STARS Status Message
STARS Track and Flight Plan Data Message
STARS Alert Data Message
STARS SISO Event Message
STARS IMC Status Message
STARS Traffic Count Message
STARS Performance Monitoring Message

STDDS

SMES

APDS

TDES

TAIS

ISMC

RVR Data Update

Reconstitute
Subscription To
Departure Data

Surface Movement Event
ASDE-X Position Report
ASDE-X Generic Flight Info
ASDE-X System Status

Tower Departure Event
Reconstitution Request Status
Tower Departure Event Reconstitution Start
Tower Departure Event Reconstitution Complete

Terminal Automation Status
Terminal Automation Track and Flight Plan Data
Terminal Automation Status Raw
Terminal Automation Track and Flight Plan Data Raw
Terminal Automation Alert Data Raw
Terminal Automation SISO Event Raw
Terminal Automation IMC Status Raw
Terminal Automation Traffic Count Raw
Terminal Automation Performance Monitoring Raw

APDS Status
SMES Status
TAIS Status
TDES Status

NEMS

NAS Users

Non-NAS Users

Key:
- XML/JMS – Data Not Sensitive
- XML/JMS – Sensitive Data
- Serial or IP

STARS to STDDS connections

Legend:
- Legacy connections
- New intra-region connections
- New cross-region connections

- STDDS sites (green)
- Remote sites (red)
- Soon to be consolidated sites (grey)
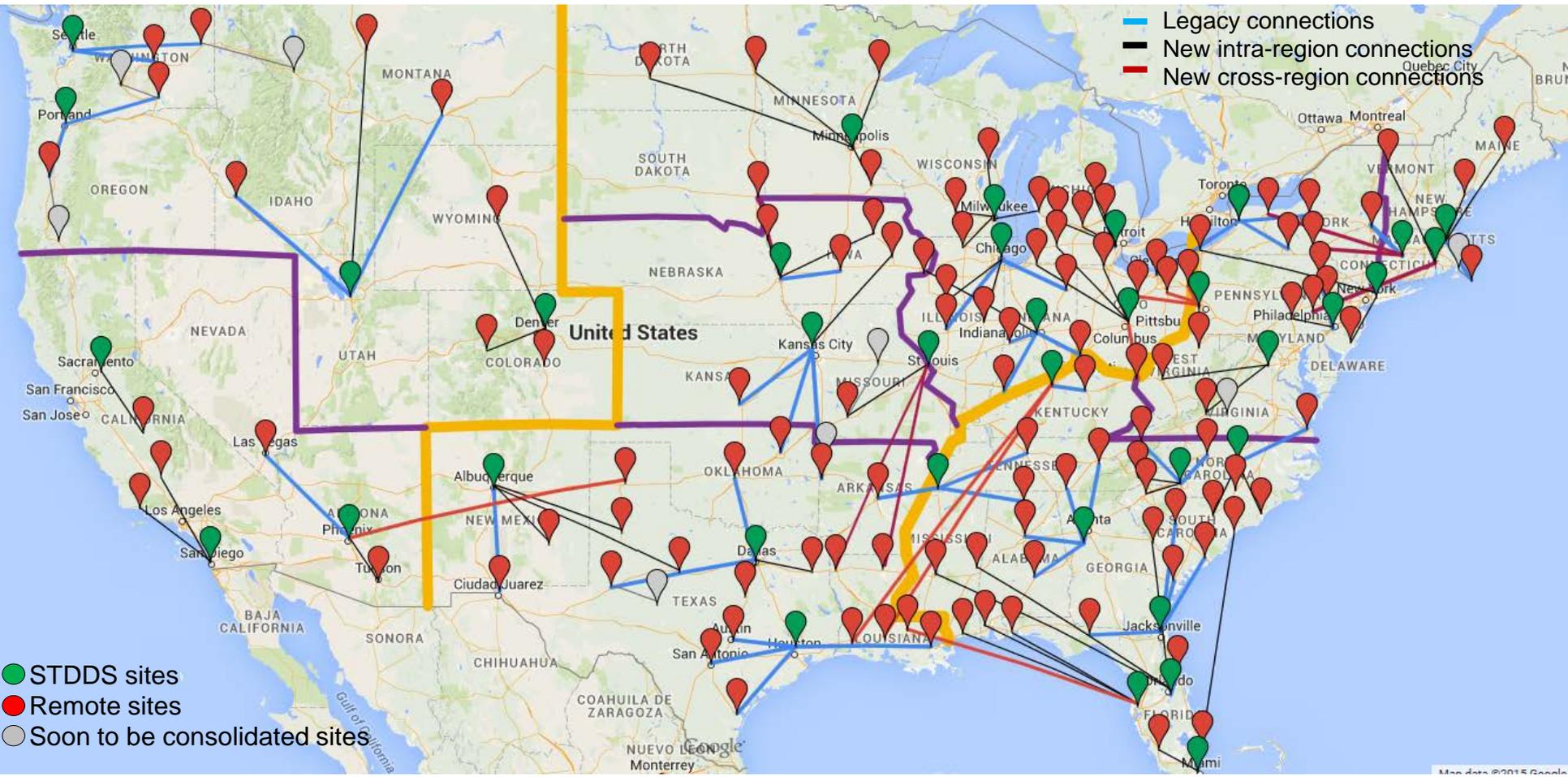
TAIS Message Format

- **All messages are in XML format and have a header and a body/payload.**

- **The header for all messages contains the following properties:**

Data Element	Description
Message Type	Defines the type of message.
Version	Version number of STDDS schema.
Timestamp	UTC date and time of STDDS message generation.
TRACON ID	FAA Location Identifier (three alphanumeric characters) of the STDDS producer.
Source TRACON ID	FAA Location Identifier (three alphanumeric characters) of the data source.
Send To	Authorization flag. Possible values: "authorized", "filtered", and "all".

TAIS Messages

AIG Message ID	Msg Type	Sensitive Data Classification	Resulting Published Message	Format
AIG100	ST	Not Sensitive	TerminalAutomationStatus	Parsed XML
AIG200	FP	Filtered	TerminalAutomationTrackAndFlightPlanData	Parsed XML
AIG300	AR	Sensitive	TerminalAutomationAlertDataRaw	XML wrapped binary
AIG500	SI	Sensitive	TerminalAutomationSISOEventRaw	XML wrapped binary
AIG502	IR	Not Sensitive	TerminalAutomationIMCStatusRaw	XML wrapped binary
AIG510	CR	Sensitive	TerminalAutomationTrafficCountRaw	XML wrapped binary
AIG700	PR	Sensitive	TerminalAutomationPerformanceMonitoringRaw	XML wrapped binary

Relevant STDDS Documentation

- **R3.2 TAIS JMSDD (NSRR, draft)**
- **R3.2 STDDS Schemas (NSRR)**
- **TAIS Sample data (NSRR)**
- **STDDS R3.2 Release notes (NSRR)**

AIG200: Track and Flight Plan Message

The AIG200 is in parsed XML format

Key Flight Plan Data

- Aircraft ID
- Aircraft type
- Entry/exit fix/airport
- Flight rules
- Flight status
- ARTCC computer ID
- Scratchpad data

Key Track Data

- Source TRACON
- Track number
- Aircraft address
- Aircraft position (x,y)
- Reported beacon code
- Reported altitude
- ADS-B/ICAO address (when avail)
- Handoff information

TAIS On-Ramping

- **Contact EES @ data-to-industry@faa.gov**
- **Test data expected on R&D network Fall 2015**
- **Deployment Summer 2016**
- **TAIS data is relatively large, average 380 Kbps, variable by site (275 Kbps – 2622 Kbps)**

Schedule – 90 days

DEVELOPMENT/UPDATE

2015

August	September	October

AGIFORS Symposium 8/24/2015 (Registration Closed)

ATIEC Conference 8/25-27/2015

SWIM Users Forum -2nd Thursday/Month 9/10/15

SWIM Interactive Developer Workshop 9/22-24/2015

SWIM Users Forum -2nd Thursday/Month 10/8/15
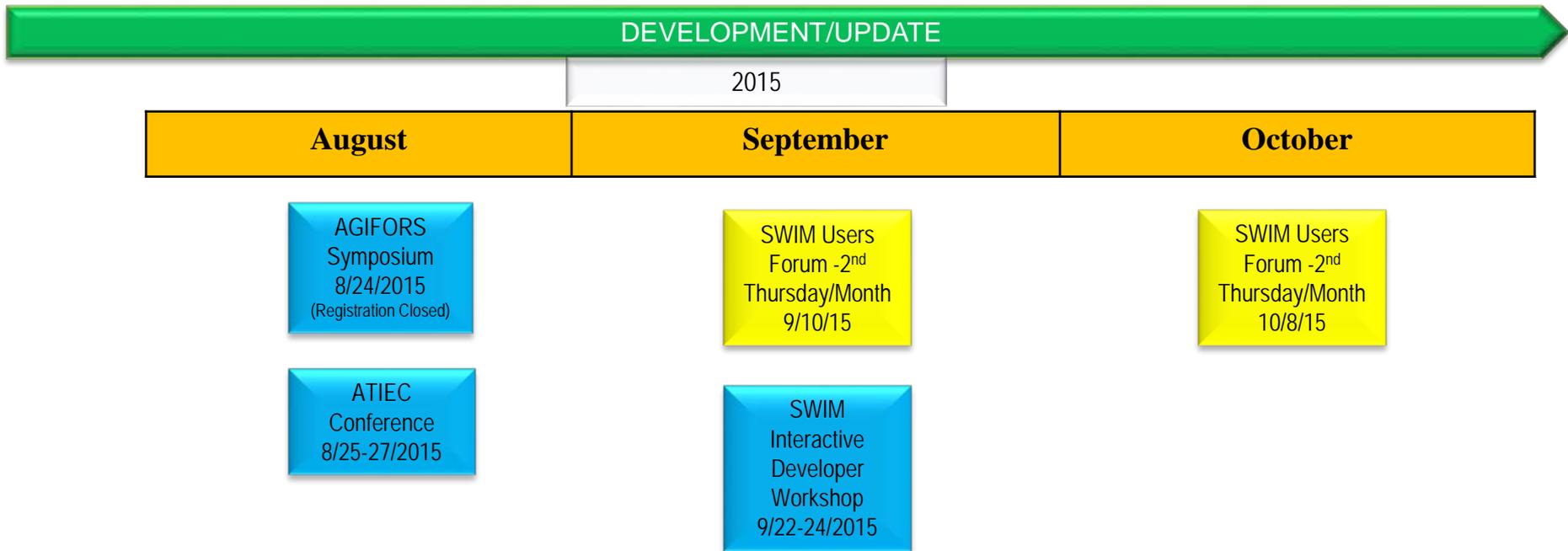
Thank you for joining us!

Please take this short survey to let us know how we're doing…

https://www.surveymonkey.com/r/JGTNVZK

Questions

Federal Aviation Administration

SWIM Data Exchange – Participating Programs

SWIM Terminal Data Distribution System
STDDS

NOTAM Distribution Service
NDS

Special Activity Airspace Sep'14
SAA

Enhanced WINS Dissemination
EWD

Aeronautical Situational Display to Industry (ASDI) Traffic Flow Management System Dec'14
TFMS

Time-Based Flow Management
TBFM

SWIM Flight Data Publication Service Jun'15
SFDPS

Weather and Radar Processor
WARP

Integrated Terminal Weather System Aug'14
ITWS

Weather Message Switching Center Replacement
WMSCR

SWIM

FTI

N E S G - security gateway

National Weather Service 2015
NWS

Corridor Integrated Weather System
CIWS

External Consumers