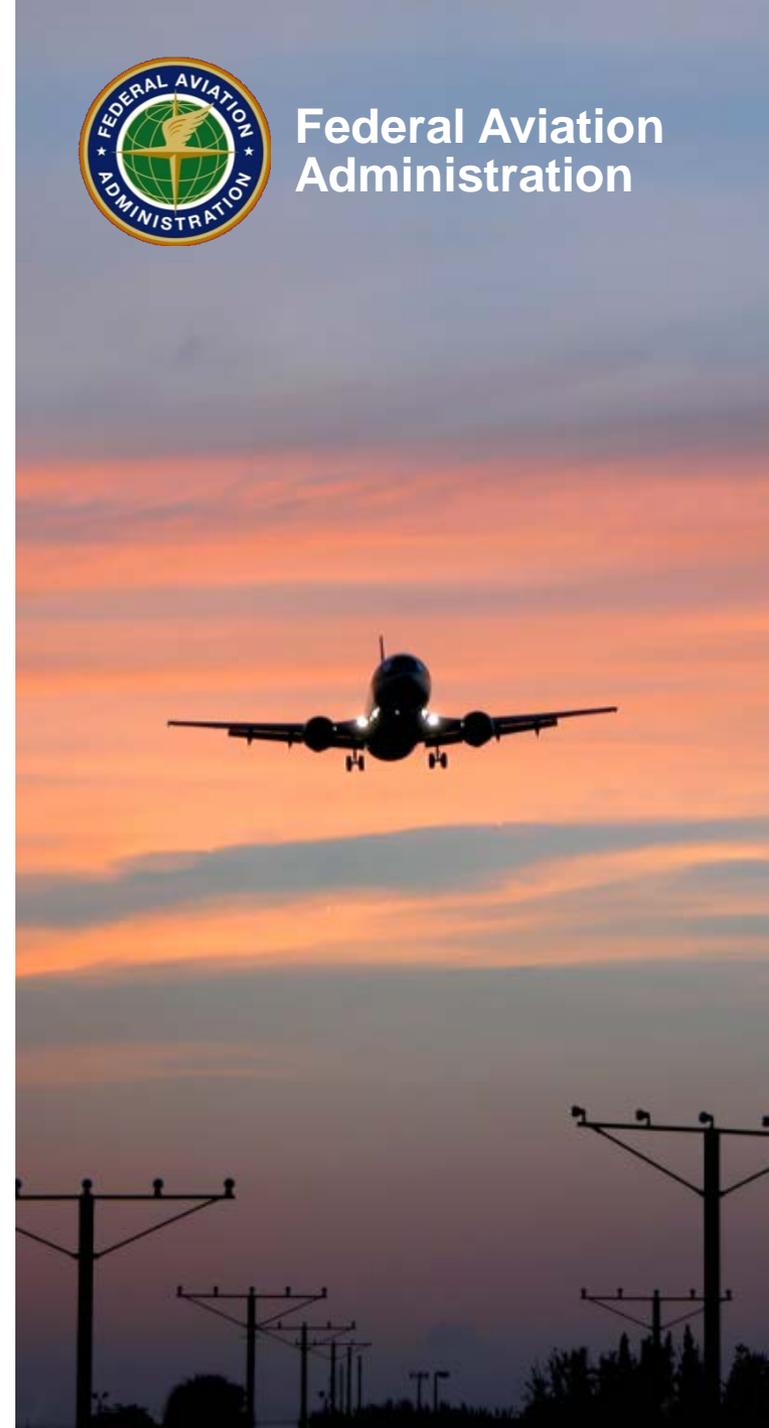


SWIM Users Forum – Session # 3



Federal Aviation
Administration

By: SWIM Program Office
To: SWIM Consumers
Date: April 9, 2015



User Forum Logistics

- **Date:**
 - April 9, 2:30 pm – 4:00pm
- **Location:**
 - Noblis Lakes Conference Rm – A&B
- **Go-to-Meeting:**
 - Please register for “SWIM Users Forum” at:
<https://global.gotowebinar.com/join/1646080322096121346/217482674>
- **User Forum briefing distributed via invitation & Webinar**

Agenda

- **User Forum Overview**
- **SWIM Program Overview – Joe Lahoud**
 - *Discussion*
- **SFDPS Update – Linda Chen**
 - *Discussion*
- **STDDS Update – Jeri Groce**
 - *Discussion*
- **SWIM 60 day Calendar – Jeri Groce**
- **Open Discussion - All**



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
-



SWIM Users Forum - Overview

- **Forum Participation:**

- NAS and non-NAS consumers

- Airlines, Industry service providers, research & development, FAA Programs, Airports
- Average 60 – 80 attendees: 1st two 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



System Wide Information Management (SWIM)

Program Overview and Status Update

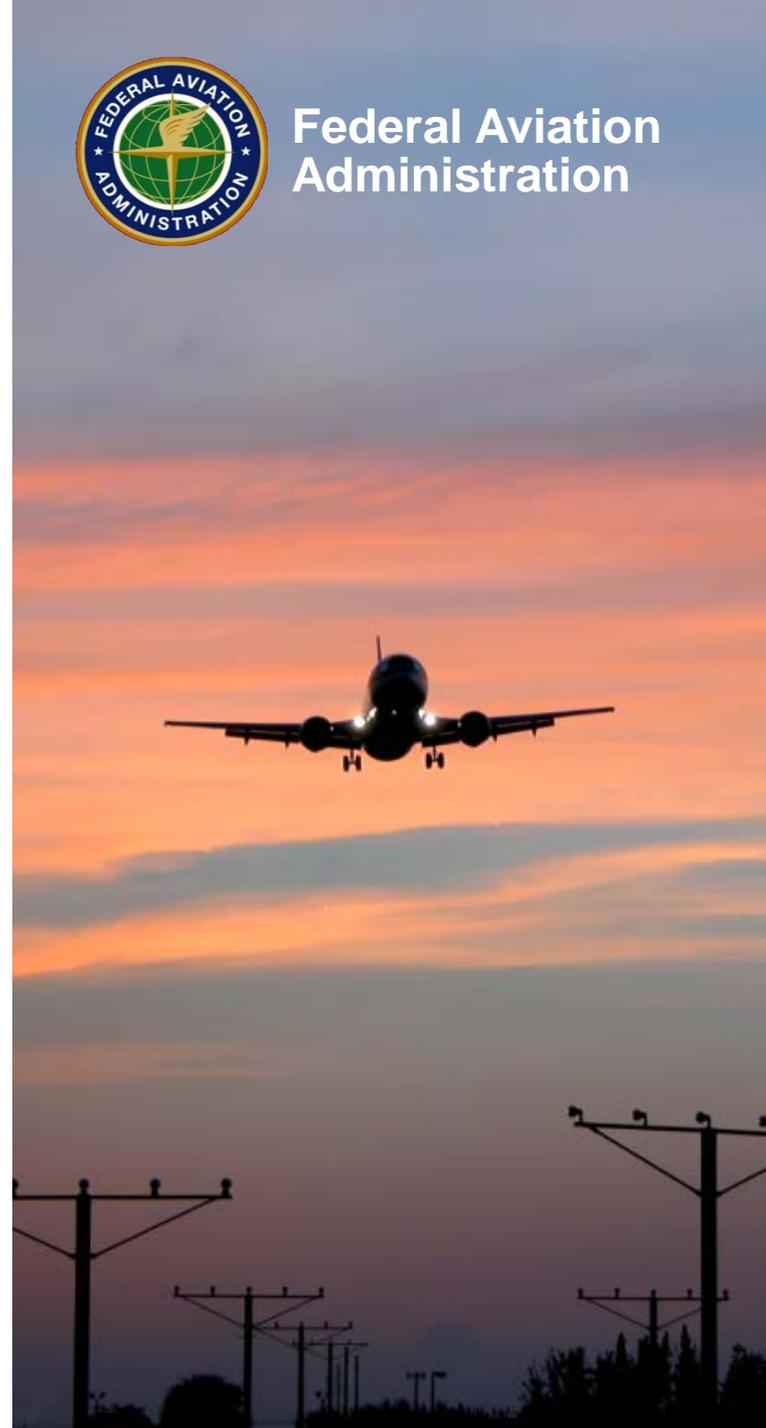
Presented to: SWIM User Forum

Presented by: Joe Lahoud

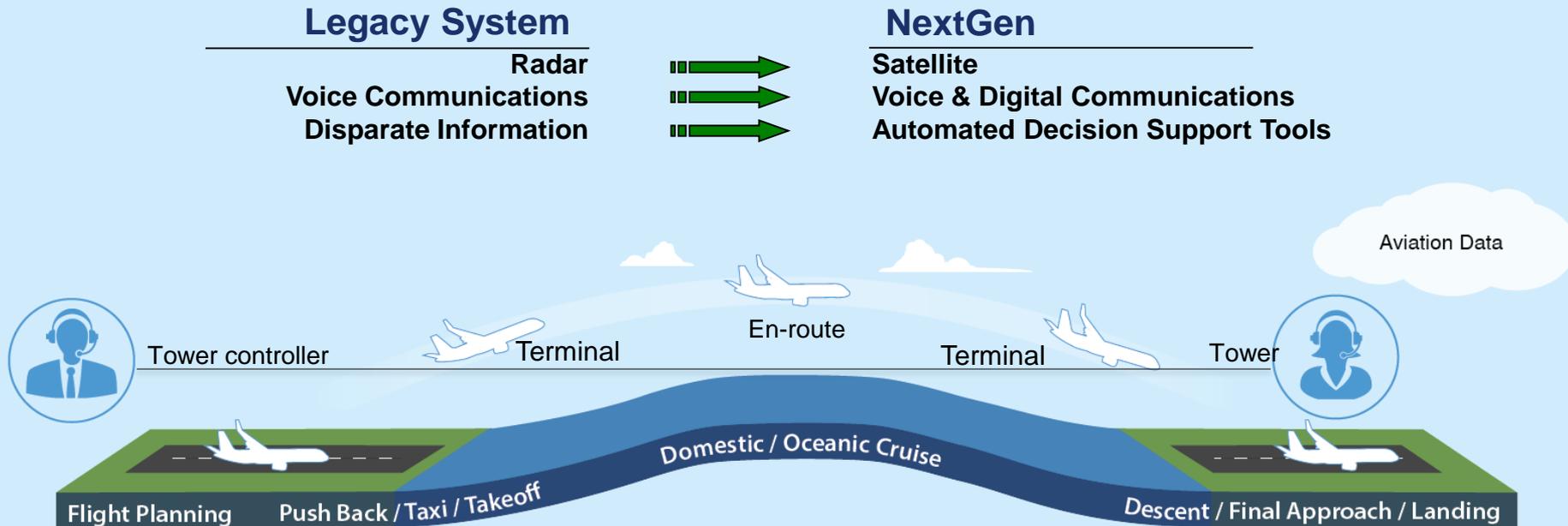
Date: April 2015



Federal Aviation
Administration



Delivering NextGen Major Investments



NextGen

Automatic Dependent Surveillance-Broadcast (ADS-B),
DataComm, National Airspace System (NAS) Voice System (NVS),
Terminal Flight Data Manager (TFDM), System-Wide Information Management (SWIM)

Foundational

En Route Automation Modernization (ERAM)
Terminal Automation Modernization/Replacement (TAMR)

WHAT IS SWIM?

System Wide Information Management (SWIM) is the infrastructure that allows members of the Aviation Community to access the information needed to facilitate an innovative and efficiently run National Airspace System (NAS).

What is SWIM doing for the Aviation community?

SWIM makes it possible to have access to real-time, relevant aeronautical, flight and weather information.



SWIM

Information Access to
Transform the Aviation
Community.



Enables new and cutting edge tools and applications.



Facilitates an innovative, efficiently run airspace.

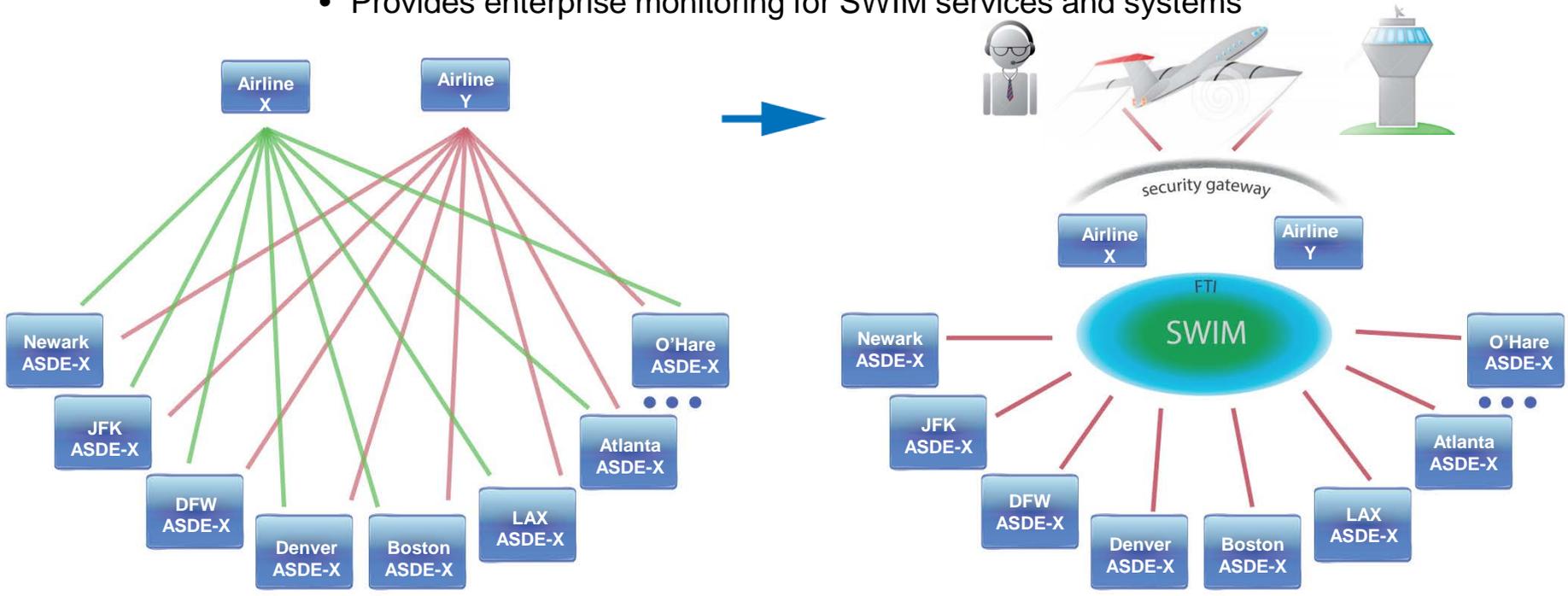


Saves operating and implementation costs.

- Replaces unique interfaces with modern standards-based data exchange
- Provides SWIM users access to information without directly connecting to another system
- Provides enterprise security for incoming and outgoing data

Producer/ Consumer Example: ASDE-X

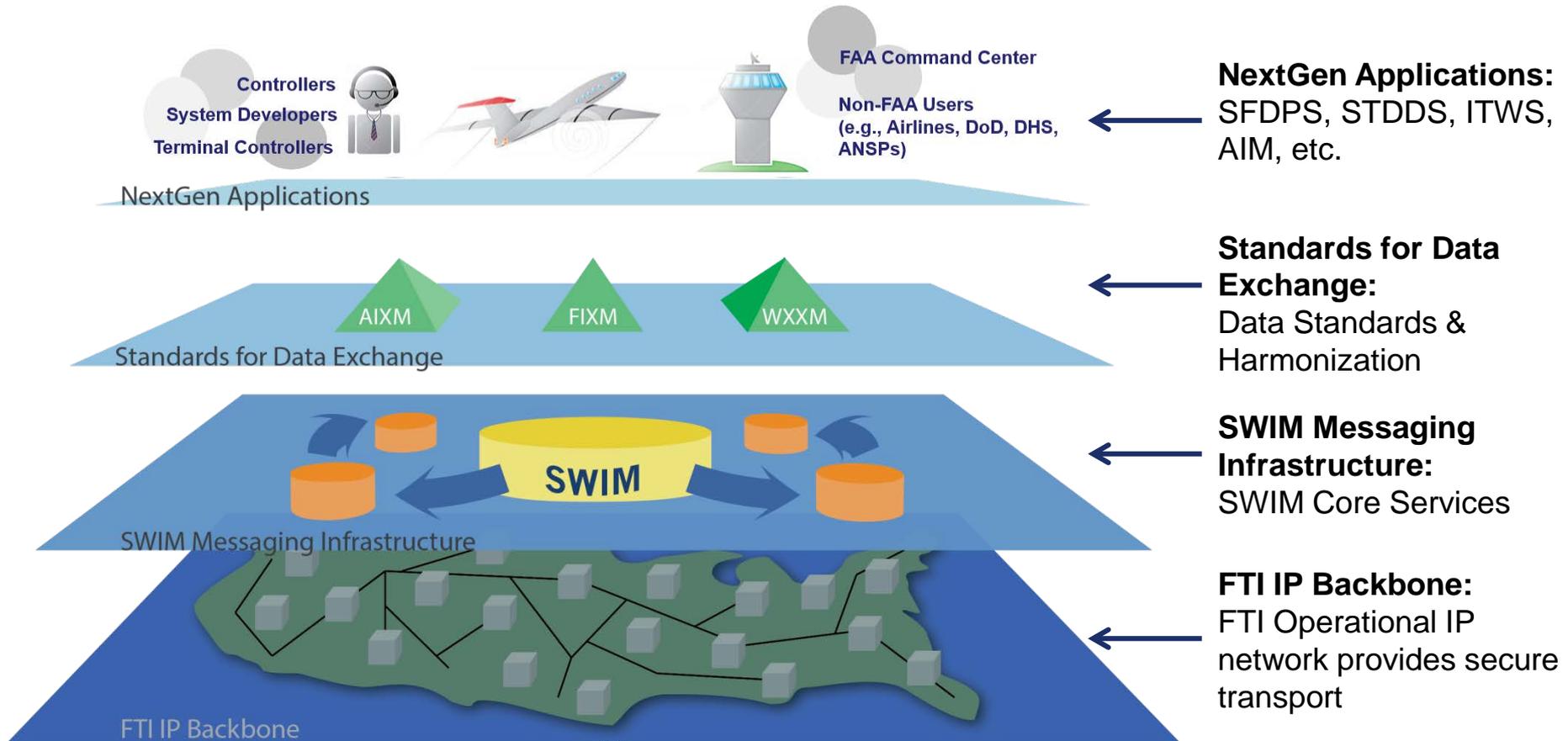
- Provides single access connection point for multiple published products
- Single SWIM organization contact for application to consume products
- SWIM publicized list of available FAA content products (NSRR)
- Single contact for support for access to multiple products
- Industry standard connection interfaces and jumpstart kit facilitates consumer stand-up
- Replaces unique interfaces with modern standards-based data exchange
- Scalable Services Oriented Architecture to effectively accommodate growth
- Provides enterprise security services for all consumers
- Provides enterprise monitoring for SWIM services and systems



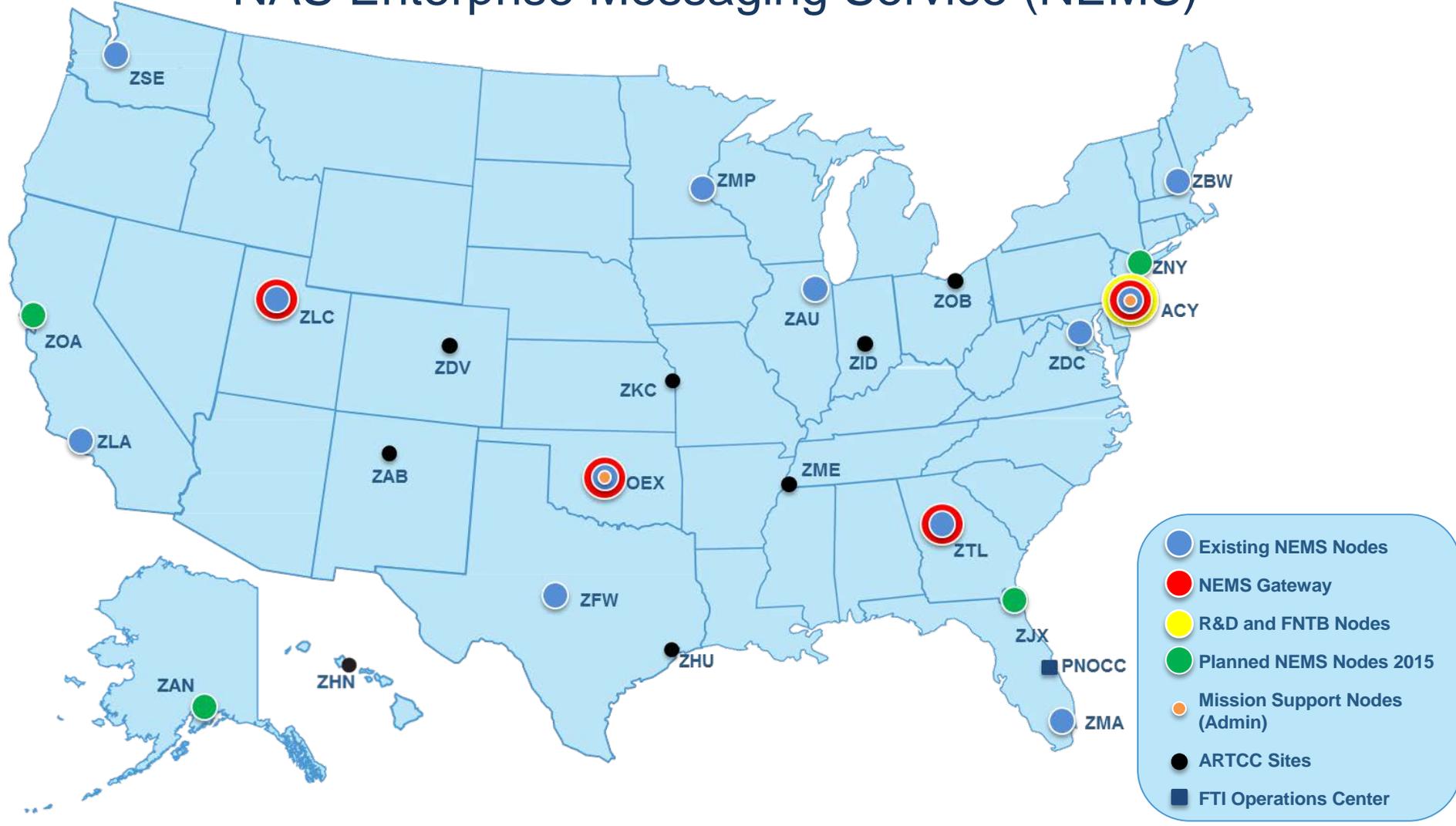
Before SWIM:
Point-to-point connections

With SWIM:
Data Exchange (Published once, consumed by many)

NextGen Information Sharing Architecture



SWIM Infrastructure Deployment NAS Enterprise Messaging Service (NEMS)



NEMS Services

Content On-Ramping Services Producers / Consumers

Basic

- U1: WS-C: Web Service - Consumer
- U2: WS-P: Web Service - Producer
- U3: JMS-C: JMS Subscription - Consumer
- U4: JMS-P: JMS Publishing- Producer

Enhanced

- E1: Mediation
- E2: Performance
- E4: SLAs
- E5: Security
- E7: Reports
- E8: Dynamic Subscriptions
- O1: OPS Publications to R&D, FNTB

System Level Capabilities

Basic

- B1: Run-time Subscription
- B2: Message Reliability QoS
- B3: Mediation
- B4: Availability & Performance
- B5: Security Services
- B6: Web Services
- B12: Dynamic Subscriptions

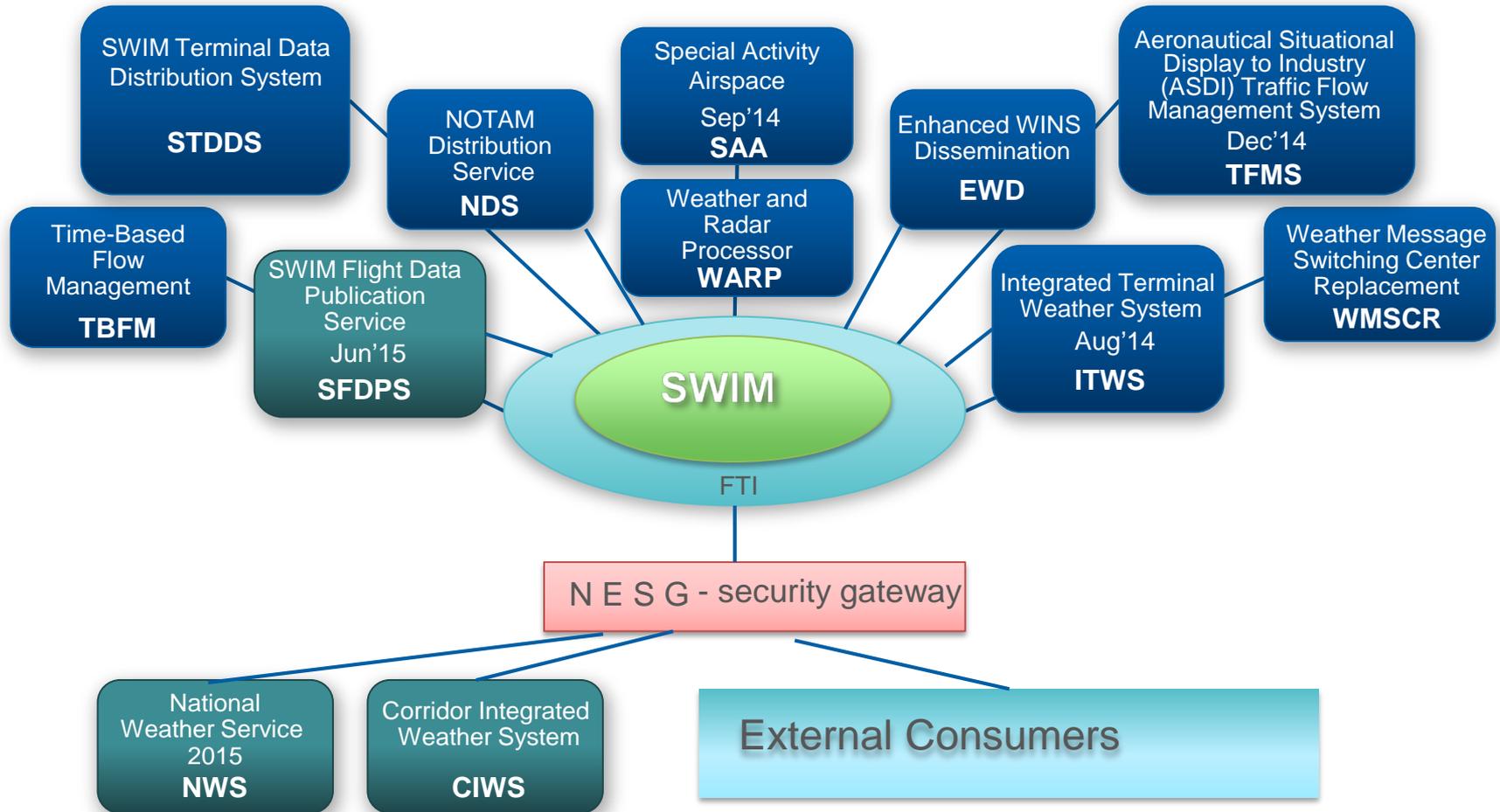
Enhanced

- B10: Producer/Consumer SLAs
- B13: Global Load Balancer
- B14: Local Load Balancers
- B15: Advanced Mediation

Infrastructure Services

- DMN, DAN, DSN, vDEX, NESGs, GLB, LLB

SWIM Data Exchange – Participating Programs



SWIM Product Portfolio

Aeronautical Data

Aeronautical Information Management (AIM) Special Use Airspace (SUA) Data Exchange: Provides notification and status regarding airspace

- ✓ SUA data, dynamically provided in the Aeronautical Information Exchange Model (AIXM) standard
- ✓ AIXM SUA definitions

Notices to Airmen (NOTAM) Distribution Service

- ✓ Digital NOTAMs AIXM 5.1

Flight and Flow Data

Time Based Flow Management (TBFM): Provides metering information

- ✓ Scheduled Time of Arrival (STAs)
- ✓ Estimated Time of Arrival (ETAs)
- ✓ Meter Reference Elements (MREs) Assignments
- ✓ Airport configuration information
- ✓ Satellite airport configurations

Traffic Flow Management System (TFMS) : Provides flight data and flow information

- ✓ Flow Constrained Area (FCA) / Flow Evaluation Area (FEA)
- ✓ Airspace Flow Program (AFP)
- ✓ Aeronautical Situational Display to Industry (ASDI)
- ✓ Ground Delay Program (GDP) / Unified Delay Program (UDP)
- ✓ Ground Stops (GS)
- ✓ Reroutes
- ✓ Advisories
- ✓ Collaborative Trajectory Options Program (CTOP)

SWIM Terminal Data Distribution Systems (STDDS): Collects and publishes data from 100+ airports

- ✓ Airport Surface Detection Equipment, Model X (ASDE-X) streaming data service and Runway visibility data
- ✓ Surface Movement Events (SME)
- ✓ Runway Visual Range (RVR) Data
- ✓ Tower Departure Events (TDE)

SWIM Flight Data Publication Service (SFDPS)*: Provides flight data and updates to clients for filed and active flight plans

- ✓ Flight Plan information
- ✓ Flight Amendment Information
- ✓ Converted Route Information
- ✓ Cancellation Information
- ✓ Departure Information
- ✓ Aircraft Identification Amendment Information
- ✓ Hold Information
- ✓ Progress Report Information
- ✓ Flight Arrival Information
- ✓ Flight Plan Update Information
- ✓ Expected Departure Time Information
- ✓ Position Update Information
- ✓ Tentative Flight Plan Information
- ✓ Tentative Aircraft identification Amendment Information
- ✓ Tentative Flight Plan Removal
- ✓ Tentative Flight Plan Amendment Information
- ✓ Track Information
- ✓ Drop Track Information
- ✓ Interim Altitude Information
- ✓ Automated Radar Terminal System (ARTS) Flow Control Track/Full Data Block Information
- ✓ Beacon Code Reassignment
- ✓ Beacon Code Restricted
- ✓ Flight Plan Data Bank (FDB) Fourth Line Information
- ✓ Point Out Information
- ✓ Inbound Point Out Information
- ✓ Handoff Status

Airspace Data Publication Service*: Published by SFDPS

- ✓ Sector Assignment Status
- ✓ Route Status
- ✓ Special Activities Airspace (SAA)
- ✓ Altimeter Setting

Operational Data Publication Service*: Published by SFDPS

- ✓ Traffic Count Adjustment
- ✓ Instrument Approach Count Adjustment
- ✓ Sign In Sign Out
- ✓ Beacon Code Utilization
- ✓ Geographic Beacon Code Utilization

General Information Message Publication Service*: Published by SFDPS

- ✓ General Information



SWIM Product Portfolio (cont.)

Weather Data

Integrated Terminal Weather System (ITWS) Data Publication: Provides specialized weather products in the terminal area

- | | |
|--|--|
| ✓ Configured Alerts | ✓ Tornado Detections Wind Profile |
| ✓ Forecast Accuracy | ✓ Anomalous Propagation (AP) Indicated Precipitation |
| ✓ Forecast Contour | ✓ AP Status |
| ✓ Forecast Image | ✓ Gust Front Estimated Time to Impact |
| ✓ Gust Front TRACON Map | ✓ Hazard Text 5nm |
| ✓ Microburst TRACON Map | ✓ Hazard Text Long Range |
| ✓ Precipitation 5nm | ✓ Hazard Text TRACON |
| ✓ Precipitation Long Range | ✓ ITWS Status Information |
| ✓ Precipitation TRACON | ✓ Microburst Automatic Terminal Information Service (ATIS) |
| ✓ Storm Motion (SM) Storm Extrapolated Positions (SEP) 5nm | ✓ Runway Configuration |
| ✓ SM SEP Long Range | ✓ Storm Motion 5NM |
| ✓ SM SEP TRACON | ✓ Storm Motion TRACON |
| ✓ Terminal Weather Text Normal | ✓ Terminal Weather Text Special |
| ✓ Tornado Alert | ✓ Wind Shear ATIS |

Corridor Integrated Weather System (CIWS) Data Publication*: Provides specialized 3D storm related weather information in the Enroute area

- | | |
|--|---------------------------------------|
| ✓ Vertically Integrated Liquid (VIL) Mosaic (1km resolution) | ✓ VIL Forecast Contours (Std. Mode) |
| ✓ VIL 2-hr. Forecast | ✓ VIL Forecast Contours (Winter Mode) |
| ✓ Echo Tops Mosaic (1 km resolution) | ✓ Echo Tops Forecast Contours |
| ✓ Echo Tops 2-hr. Forecast | ✓ Growth & Decay Contours |
| ✓ Satellite Mosaic | ✓ Forecast Accuracy: Echo Tops |
| ✓ Storm Info: Echo Top Tags | ✓ Forecast Accuracy: Std. Precip |
| ✓ Storm Info: Leading Edges | ✓ Forecast Accuracy: Winter Precip |
| ✓ Storm Info: Motion Vectors | |

Weather Message Switching Center Replacement (WMSCR)

Publications: Provides NWS textual aviation weather products

- | | |
|---|----------------------|
| ✓ Transmission of voice Pilot Reports (PIREPs) to WMSCR | ✓ Altimeter settings |
| ✓ Stored PIREPs | |

Enhanced Weather Information Network System

- | | |
|--|--|
| ✓ Current Icing Product (CIP) | ✓ National Convective Weather Forecast (NCWF) |
| ✓ Weather Research and Forecasting-Rapid Refresh (WRF-RR) Model Data | ✓ National Convective Weather Diagnostic (NCWD) |
| ✓ North American Mesoscale (NAM) Model Data | ✓ Aviation Routine Weather Report (METAR) |
| ✓ Global Forecast System (GFS) Model Data | ✓ Significant Meteorological Information (SIGMET) |
| ✓ Airmen's Meteorological Information (AIRMET) | ✓ Collaborative Convective Forecast Product (CCFP) |

Weather and Radar Processor (WARP) Publications

- | |
|--|
| ✓ Next Generation Weather Radar (NEXRAD) |
|--|

***Service in development or on-ramping process**



SWIM Service Planning

Program	Discovery	Architecture, Requirements	Qualification (Data Arch, Design, HSV test)	Operations Rollout / Cutover
Terminal Automation Modernization and Replacement (TAMR)	In Progress	In Progress	TBD	Sep'15
Data Comm Network Services (DCNS) Monitoring Service	In Progress	In Progress	TBD	2015
NAS Information Display System (NIDS) Consumer	In Progress	In Progress	TBD	2015
Aeronautical Information Management (AIM) Segment 2	In Progress	In Progress	TBD	2015+
Common Support Services – Weather (CSS-Wx)	In Progress	In Progress	TBD	2015+
Terminal Flight Data Manager (TFDM)	In Progress	In Progress	TBD	2015-16



Current SWIM Consumers

Consumer	Data Type / Subscription
Airlines	
American Airlines	ASDE-X / LGA, BOS, MIA
Delta Airlines	ASDE-X / LGA
FedEx	ASDE-X / MEM
JetBlue	ASDE-X / all airports
United Airlines	ASDE-X / all airports
USAIR	ASDE-X / PHX, DCA

Airports, FAA Facilities, & FAA Programs	
Atlanta Airport Authority	ASDE-X / all airports
San Francisco (SFO) Airport Authority	SFO Airport Surface Surveillance Capability (ASSC) data
Southern California TRACON	ASDE-X / San Diego, Los Angeles, Long Beach airport data
CIWS	WMSS NEXRAD /all radar sites
CRCT	ASDE-X / LGA, EWR, JFK
OASIS	HWDS / all products
WARP	Enhanced WINS

Consumer	Data Type / Subscription
Research & Development	
Kent State	CIWS / all products
MIT - Lincoln Labs	ASDE-X / all airports, WMSS NEXRAD
MITRE	ASDE-X / all airports
Volpe	ASDE-X / all airports

Industry	
Alliance	ASDE-X / MEM, ATL, JFK
ARINC	CIWS / all products
Lockheed Martin	ASDE-X/ ATL, CLT, MSP, DTW, BOS, IAD, LAS
MOSAIC ATM	ASDE-X / LGA, JFK, BOS, ATL, PHL, EWR, ORD, IAD, CLT; ITWS / all products
Passur	ASDE-X / all airports / STDDS
Rockwell Collins	CIWS / all products
Sabre	ASDE-X / all airports; ITWS / all products
Sensis	ASDE-X / ATL, JFK
Thales	TFMData
Veracity	ASDE-X / LGA

On-Ramping Process

1. Register for an account on the Access Agreement Portal and request access to the TFMData service. <https://data.faa.gov/data/home.jsf>
2. Send an email to Data-To-Industry@faa.gov with a request to be transitioned from ASDI to the new TFMData service. You will be contacted by one of the FAA's External Consumer On-Ramping team members who will coordinate a kick-off meeting to discuss next steps.
3. Register for an account on the NAS Service Registry Repository (NSRR) to access detailed information on the TFMData service, such as the Web Service Description Document (WSDD). – http://www.faa.gov/nextgen/programs/swim/nsrr_form
4. For general information on the SWIM program, please reference www.faa.gov/nextgen/swim/.
5. Additional information will be provided during the TFM Program monthly Webinars on the transition to SWIM. Contact Chris.Burdick@faa.gov to register for the Webinar.



Questions



Backup Slides



Time-Based Flow Management (TBFM) Information Sharing Service

TBFM optimizes the flow of aircraft into busy airspace. It was installed in all 20 En Route centers in July 2013 to meter aircraft through all phases of flight in order to deliver the correct number of aircraft to airspace sectors and down to the runway at the exact pace at which the aircraft can be accommodated.

JMS Publish/Subscribe connection of XML data to TBFM's Information Sharing provides this metering information.



Traffic Flow Management System (TFMS): TFMData Service

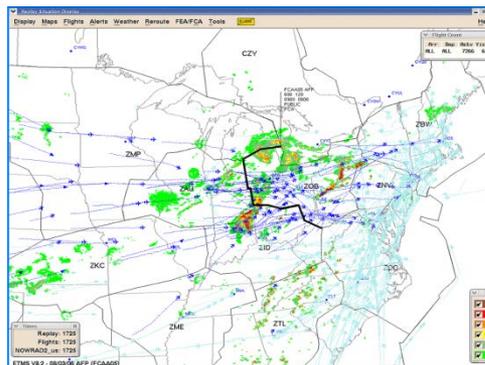
TFMS TFMData Service describes current and planned traffic flow initiatives in the NAS. This service will provide a means for information consumers to subscribe to traffic management data consisting of both Flight Data and Flow Information associated with the Traffic Flow Management domain.

Products include the following:

- Flow Constrained Area (FCA) / Flow Evaluation Area (FEA)
- Ground Delay Program (GDP) / Unified Delay Program (UDP)
- Airspace Flow Program (AFP)
- Collaborative Trajectory Options Program (CTOP)
- Route Availability Planning Tool (RAPT) time-line data
- ATCSCC Advisories
- Ground Stop (GS)
- Reroutes
- Airport runway config and rates
- Airport deicing
- Restrictions



Denver Reroute

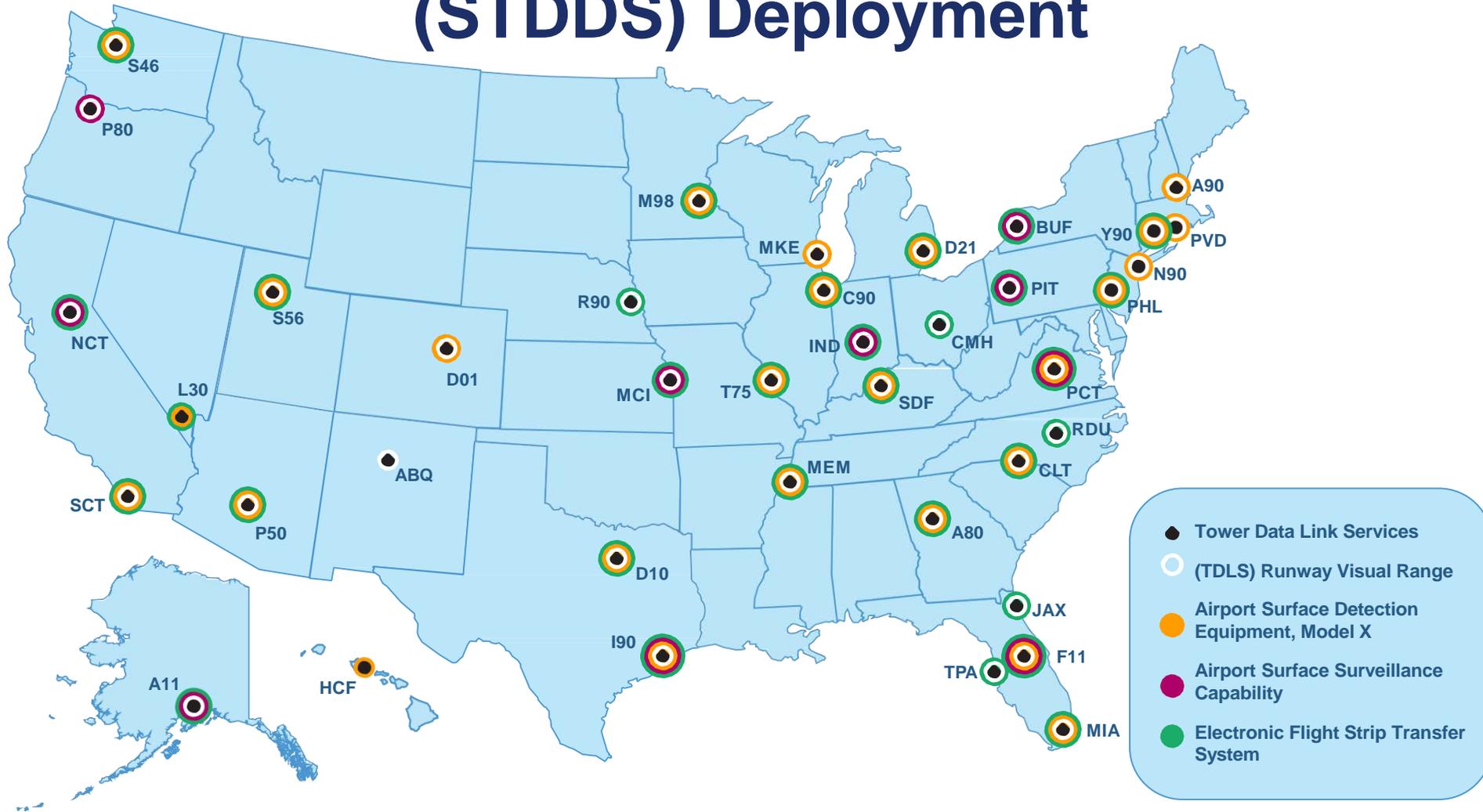


Airspace Flow Program (AFP)



FSM Ground Delay Tools components

SWIM Terminal Data Distribution Service (STDDS) Deployment



SWIM Terminal Data Distribution System (STDDS)

JMS Publish/Subscribe connection of XML data (Airport Surface Detection Equipment-Model X (ASDE-X), Airport Surface Surveillance Capability (ASSC), Electronic Flight Strip Transfer System (EFSTS), Tower Data Link Services (TDLS), and Runway Visual Range (RVR))

- **ASDE-X and ASSC**

- Event date/time for each flight:
 - Spot Out (departure aircraft crosses from ramp to surface movement area)
 - Spot In (arrival aircraft crosses from surface movement area to ramp)
 - Off (wheels up)
 - On (wheels down)
- Category 11 data and Generic Flight Plan data

- **Tower Departure Event Data**

- Aircraft parking gate and Departure runway
- Clearance delivery time (date/time at which clearance was issued)
- Taxi start time (date/time at which taxi start was issued)
- Takeoff time (date/time at which takeoff clearance was issued)

- **RVR Data**

- Visual range in hundreds of feet at touchdown, midpoint, and rollout
- Visibility trend (steady, increasing, decreasing) at touchdown/midpoint/rollout
- Runway edge light and center light setting intensity from 0 (off) to 5 (maximum)

Enhanced Weather Information Network Service (WINS) Dissemination (EWD)

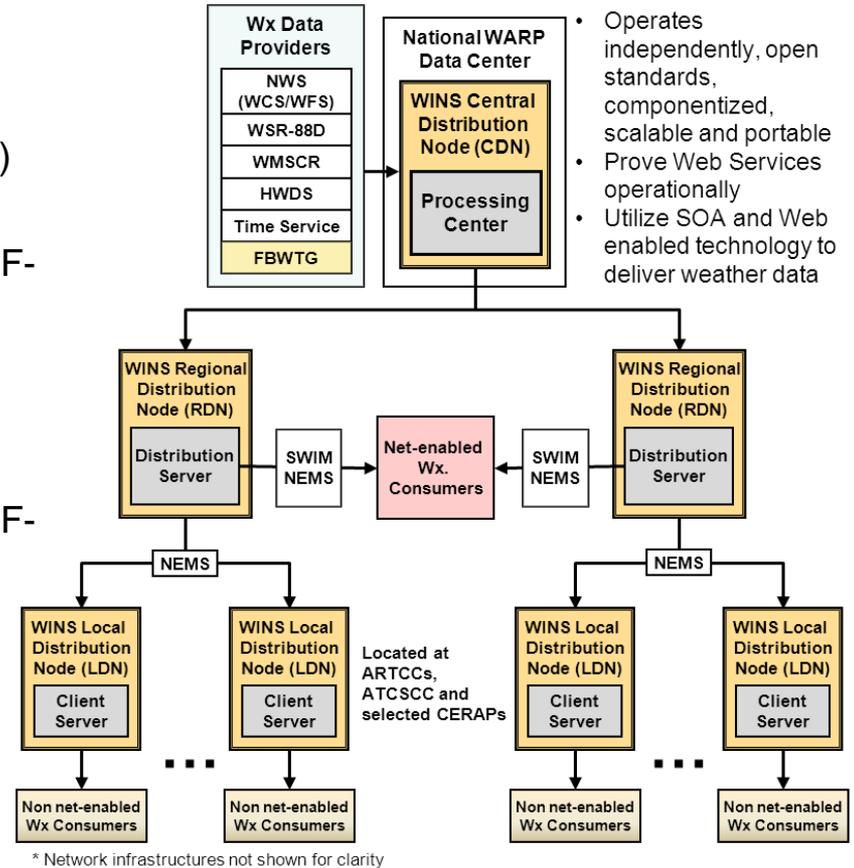
Web Service and JMS Publish/Subscribe connection to XML and binary data on adverse weather, forecasts and other meteorological advisories.

Current products:

- Harris Weather Data Service (HWDS)
- Weather Surveillance Radar – 1988 Doppler (WSR-88D)
- Aviation Routine Weather Report (METAR)
- Weather Research and Forecasting-Rapid Refresh (WRF-RR) 40km Resolution Model Data
- North American Mesoscale (NAM) Model Data
- Global Forecast System (GFS) Model Data

Planned products:

- Weather Research and Forecasting-Rapid Refresh (WRF-RR) 13km Resolution Model Data
- Current Icing Product (CIP)
- National Convective Weather Forecast (NCWF)
- National Convective Weather Diagnostic (NCWD)
- Significant Meteorological Information (SIGMET)
- Collaborative Convective Forecast Product (CCFP)
- Airmen's Meteorological Information (AIRMET)



Integrated Terminal Weather System (ITWS)

Publication of XML data (weather data products available to TRACONS and Tower Controllers) using SWIM compliant JMS Publish/Subscribe capabilities

ITWS provides data to consumers externally via SWIM in Industry Standard XML format

ITWS processing capability will be subsumed by NextGen Weather Processor (NWP) in 2017 timeframe

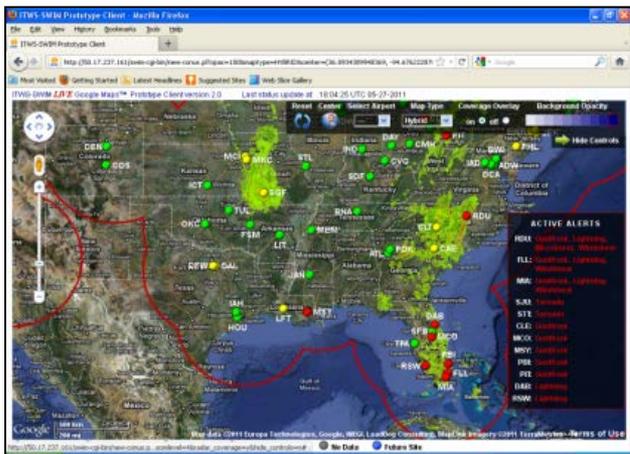
ITWS publishing capability will be subsumed by Common Support Services – Weather (CSS-Wx) in OGC formats in 2017 timeframe

Terminal Areas with ITWS:

Atlanta, ASO (ATL)	Indianapolis, AGL (IND)	Oklahoma City, ASW (OKC)
Boston, ANE (F90)	Kansas City, ACE (MCI)	Orlando, ASO (MCO)
Charlotte, ASO (CLT)	Las Vegas, AWP (LAS)	Philadelphia, AEA (PHL)
Chicago MCF, AGL (C90)	Louisville, ASO (SDF)	Phoenix, AWP (P50)
Cincinnati, ASO (CVG)	Memphis, ASO (MEM)	Pittsburgh, AEA (PIT)
Cleveland, AGL (CLE)	Miami, ASO (MIA)	Potomac, AEA (PCT)
Columbus, AGL (CMH)	Minneapolis/St. Paul, AGL (M98)	Raleigh-Durham, ASO (RDU)
Dallas/Fort Worth MCF ASW (D10)	Nashville, ASO (BNA)	Salt Lake City, ANM (S56)
Denver MCF, ANM (D01)	New Orleans, ASW (MSY)	San Juan, ASO (SJU)
Detroit/Wayne, AGL (DTW)	New York, AEA (N90)	St. Louis, ACE (T75)
Houston, ASW (I90)	Northern Cal, AWP (NCT)	Tulsa, ASW (TUL)
		Wichita, ACE (ICT)

ITWS Data Products:

Configured Alerts	Storm Motion (SM) Storm	Gust Front Estimated Time to Impact
Forecast Accuracy	Extrapolated Positions (SEP) 5nm	Hazard Text 5nm
Forecast Contour	SM SEP Long Range	Hazard Text Long Range
Forecast Image	SM SEP TRACON	Hazard Text TRACON
Gust Front TRACON Map	Terminal Weather Text Normal	ITWS Status Information
Microburst TRACON Map	Terminal Weather Text Special	Microburst Automatic Terminal Information Service (ATIS)
Precipitation 5nm	Terminal Weather Graphics	Runway Configuration
Precipitation Long Range	Tornado Alert	Storm Motion 5NM
Precipitation TRACON	Tornado Detections Wind Profile	Storm Motion TRACON
Anomalous Propagation (AP) Indicated	Precipitation	Wind Shear ATIS
	AP Status	

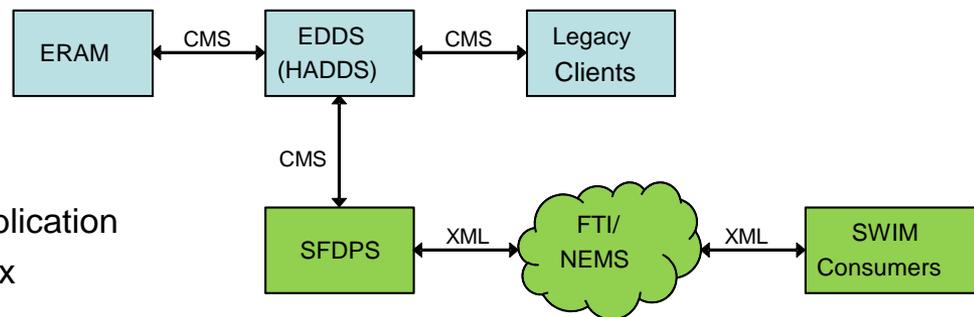


SWIM Flight Data Publication Service (SFDPS)

Phase 1 - operational in 2015 – flight data, airspace data, operational data, and general information messages

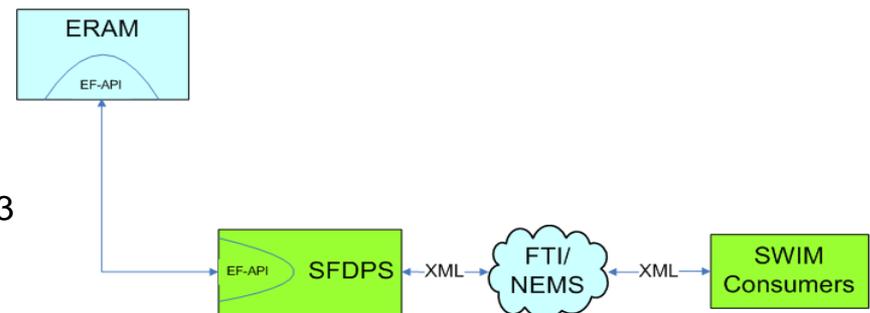
SFDPS Phase 1 Services include the following:

- En Route Flight Data Publication
- En Route Airspace Data Publication
- En Route Operational Data Publication
- En Route General Information Message Publication
- Services available using FIXM standard V1.x



SFDPS Phase 2 Services include the following:

- Flow Management Service
- Terminal Flight Data Manager (TFDM) Service
- Flight Data Service in FIXM standard (V2.0 & V3)
- Other services in XML V1.0 fifth edition



Corridor Integrated Weather System (CIWS) – Data Distribution Service (CDDS)

Web Service and JMS Publish/Subscribe connection to XML data (three-dimensional weather tracking system that focuses on high-volume “corridors” representing the combination of specific en route and terminal airspaces throughout the NAS)

CIWS will be subsumed by NWP in the 2017 time frame

CDDS will be subsumed by CSS-Wx in 2017 time frame

CIWS Products

Vertically Integrated Liquid (VIL) Mosaic (1km resolution)

VIL 2-hr. Forecast

Echo Tops Mosaic (1 km resolution)

Echo Tops 2-hr. Forecast

Satellite Mosaic

Storm Info: Echo Top Tags

Storm Info: Leading Edges

Storm Info: Motion Vectors

VIL Forecast Contours (Std. Mode)

VIL Forecast Contours (Winter Mode)

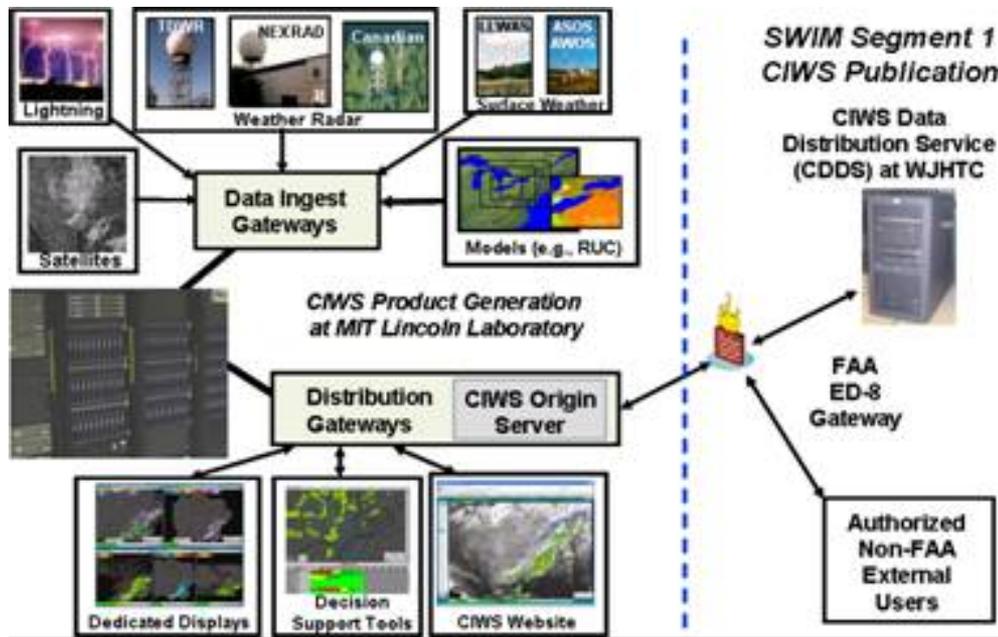
Echo Tops Forecast Contours

Growth & Decay Contours

Forecast Accuracy: Echo Tops

Forecast Accuracy: Std. Precip

Forecast Accuracy: Winter Precip

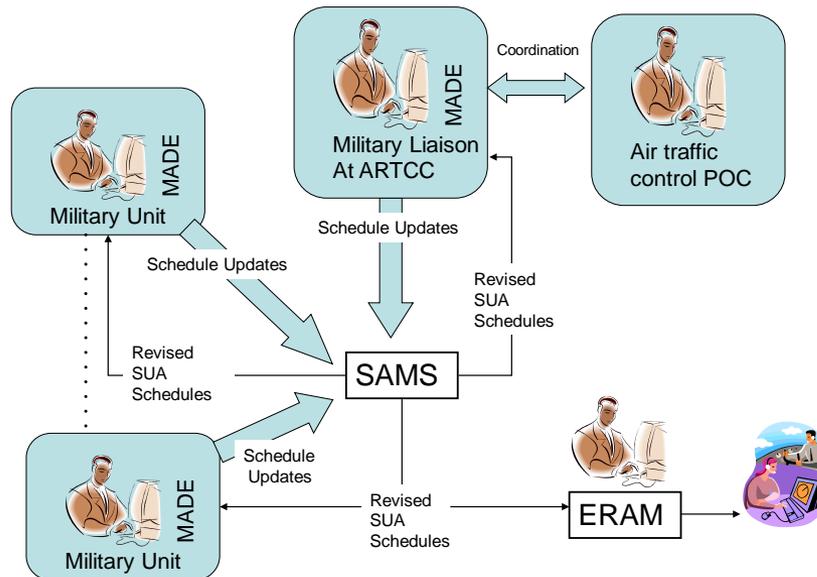


Aeronautical Information Management (AIM) Special Use Airspace (SUA) Automated Data Exchange

SUA is an area designated for operations such that limitations may be imposed on aircraft not participating in those operations.

AIM SUA Automated Data Exchange improves civilian access to current SUA schedules, and changes in SUA scheduling are captured and distributed in AIXM 5.0 compliant format as they are made.

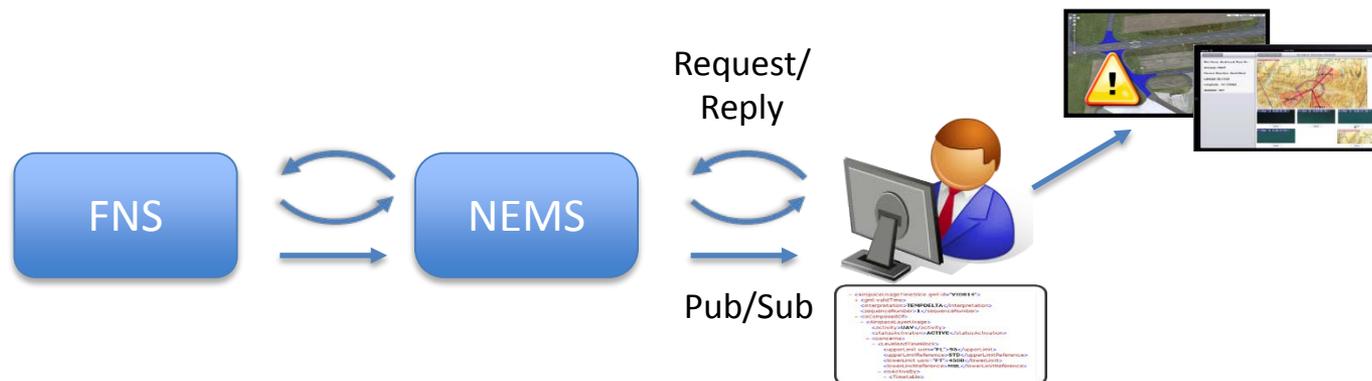
AIM Modernization improves SAA capabilities and includes Temporary Flight Restrictions, Altitude Reservations, and Military Training Routes and integrating SAA/SUA data with Notices to Airmen and airport data.



Federal NOTAM System – NOTAM Distribution Service Overview

Provides distribution of Notices to Airmen (NOTAMs)

- **Data feed that uses OGC WFS web-services**
 - Enables graphical NOTAM representation
- **Standards:** Aeronautical Information Exchange Model (AIXM) 5.1 format
- **ALL or Some:** Query and select types of data
- **External Market:** Enables 3rd party app development
- **Standards:** Include info needed for fusing data



Contact Information

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email: chris.pressler@faa.gov

Andy Isaksen, Enterprise Engineering Lead

email: andy.isaksen@faa.gov



SWIM Related Acronyms

ABRR: Airborne Reroute

ADS-B: Automatic Dependent Surveillance-Broadcast

AFP: Airspace Flow Program

AIM: Aeronautical Information Management

AIRMET: Airmen's Meteorological Information

AIXM: Aeronautical Information Exchange Model

ANSP: Air Navigation Service Provider

AP: Anomalous Propagation

APB: Acquisition Program Baseline

ARTCC: Air Route Traffic Control Centers

ARTS: Automated Radar Terminal System

ASDE-X: Airport Surface Detection Equipment-Model X

ASDI: Aeronautical Situational Display to Industry

ASSC: Airport Surface Surveillance Capability

ATIS: Automatic Terminal Information Service

CCFP: Collaborative Convective Forecast Product

CDDS: CIWS Data Distribution Service

CIP: Current Icing Product

CIWS: Corridor Integrated Weather System

CMS: Common Message Set

CRCT: Collaborative Routing Coordination Tools

CSS-Wx: Common Support Services – Weather

DCNS: Data Comm Network Services

DHS: Department of Homeland Security

DoD: Department of Defense

EDDS: En Route Data Distribution Service

EFSTS: Electronic Flight Strip Transfer System

ERAM: En Route Automation Modernization

ESB: Enterprise Service Bus

ESM: Enterprise Service Monitoring

ETAs: Estimated Time of Arrival

EWD: Enhanced WINS Dissemination

EWINS: Enhanced Weather Information Network Server

FCA: Flow Constrained Area

FDB: Flight Plan Data Bank

FDIO: Flight Data Input / Output

FIXM: Flight Information Exchange Model

FNTB: FAA Telecommunications Infrastructure (FTI) National Test Bed

FTI: FAA Telecommunications Infrastructure

GDP: Ground Delay Program

GFS: Global Forecast System

GSs: Ground Stops

HADDs: Host ATM (Air Traffic Management) Data Distribution System

SWIM Related Acronyms (cont.)

HP: Hewlett Packard

HWDS: Harris Weather Data Service

IAM: Identity and Access Management

ITWS: Integrated Terminal Weather Service

IP: Internet Protocol

JMS: Java Message Service

JRC: Joint Resources Council

METAR: Aviation Routine Weather Report

MREs: Meter Reference Elements

NAM: North American Mesoscale

NAS: National Airspace System

NCR: NAS Common Reference

NCWD: National Convective Weather Diagnostic

NCWF: National Convective Weather Forecast

NDS: NOTAM Distribution Service

NEMS: NAS Enterprise Messaging Service

NESG: NAS Enterprise Security Gateway

NEXRAD: Next Generation Weather Radar

NIDS: NAS Information Display System

NOTAMs: Notices to Airmen

NSRR: NAS Service Registry Repository

NVS: NAS Voice System

NWP: NextGen Weather Processor

NWS: National Weather Service

OASIS: Operational and Supportability Implementation System

OGC: Open Geospatial Consortium

OT&E: Operation Test and Evaluation

PDRR: Pre Departure Reroute

PIREP: Pilot report

R&D: Research and Development

RVR: Runway Visual Range

SAA: Special Activities Airspace

SEP: Storm Extrapolated Positions

SFDPS: SWIM Flight Data Publication Service

SIGMET: Significant Meteorological Information

SIP: SWIM Implementing Program

SOA: Service Oriented Architecture

SM: Storm Motion

SME: Surface Movement Events

STAs: Scheduled Time of Arrival

STDDS: SWIM Terminal Data Distribution System

SUA: Special Use Airspace

SVT: SWIM Visualization Tool

SWIM: System Wide Information Management

SWIM Related Acronyms (cont.)

TAMR: Terminal Automation Modernization and Replacement

TDE: Tower Departure Events

TBFM: Time-Based Flow Management

TDLS: Tower Data Link Services

TFDM: Terminal Flight Data Manager

TFMS: Traffic Flow Management System

TRACON: Terminal Radar Approach Control Facilities

VIL: Vertically Integrated Liquid

WARP: Weather and Radar Processor

WFS: Web Feature Service

WMSCR: Weather Message Switching Center Replacement

WMSS: WARP Maintenance and Sustainment Services

WRF-RR: Weather Research and Forecasting-Rapid Refresh

WSR-88D: Weather Surveillance Radar – 1988 Doppler

WXXM: Weather Information Exchange Model

XML: Extensible Markup Language



SWIM Terminal Data Distribution System (STDDS)

Deployed to 38 sites:

- Y90 (Yankee TRACON)
- MIA (Miami)
- SCT (Southern California TRACON)
- SLC (Salt Lake City TRACON)
- D10 (Dallas)
- N90 (New York TRACON)
- C90 (Chicago TRACON)
- T75 (St. Louis)
- PVD (Providence)
- NCT (Northern California TRACON)
- IND (Indianapolis)
- JAX (Jacksonville)
- PCT (Potomac)
- P50 (Phoenix)
- M98 (Minneapolis)
- MKE (Milwaukee)
- D21 (Detroit)
- MEM (Memphis)
- D01 (Denver TRACON)
- BUF (Buffalo/Niagara)
- MCO (Orlando)
- R90 (Omaha)
- PHL (Philadelphia)
- HCF (Honolulu)
- A90 (Boston)
- SDF (Louisville)
- 90 (Houston TRACON)
- MCI (Kansas City)
- S46 (Seattle TRACON)
- CLT (Charlotte)
- ABQ (Albuquerque)
- CMH (Columbus)
- PIT (Pittsburgh)
- P80 (Portland)
- TPA (Tampa)
- ANC (Anchorage)
- RDU (Raleigh/Durham)
- A80 (Atlanta)

Questions



System Wide Information Management (SWIM)- SFDPS

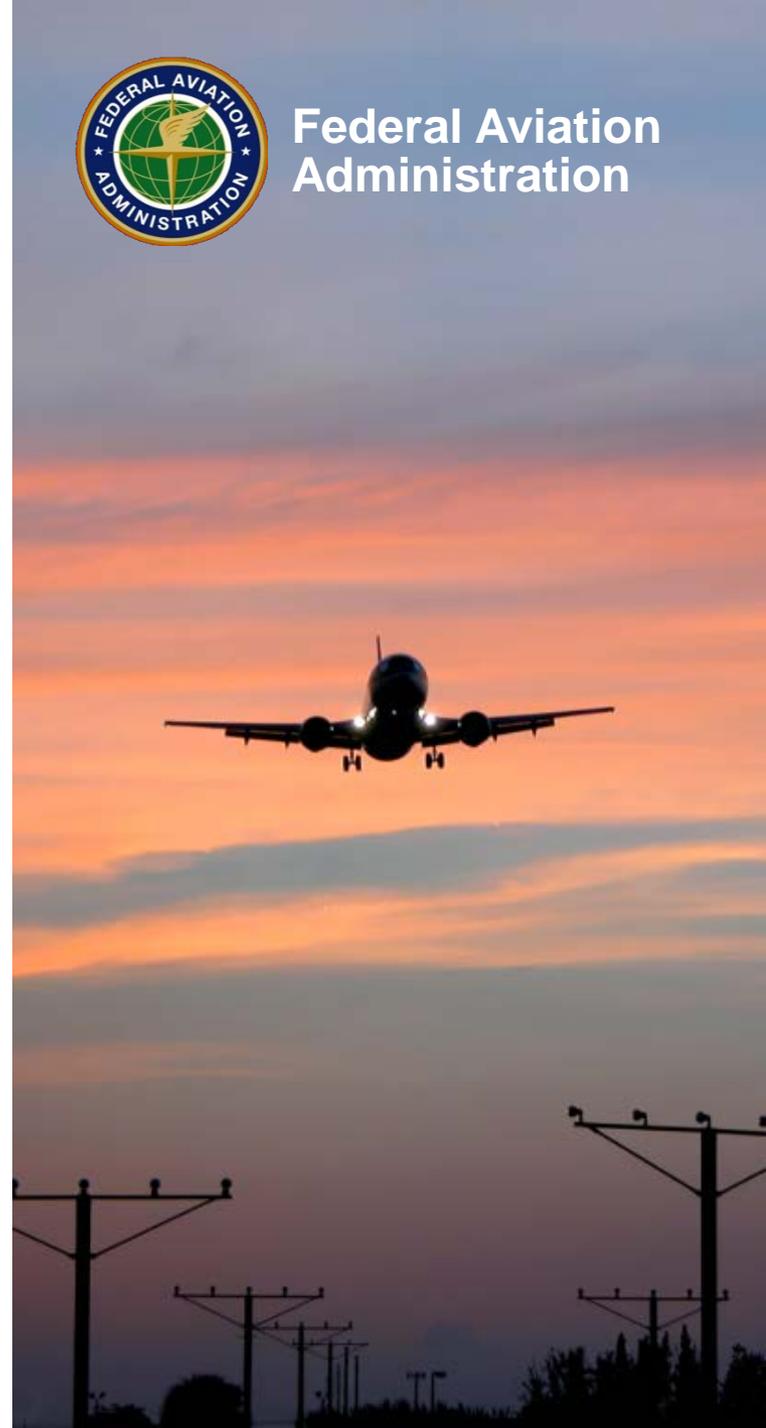
Presented to: SWIM User Forum

Presented by: Linda Chen

Date: April 9, 2015



Federal Aviation
Administration



What is SFDPS?

- **SWIM Flight Data Publication Service**
 - Publishes flight data and more
 - Flight and Track data, Sector configurations, Altimeter settings, Operational data, and General information
 - Early adopter of FIXM and AIXM standards
 - Built to add value and with reusable services
 - Flight Matching and GUF1 assignment
 - FIXM & AIXM translators
 - Database of current and historical data providing query capabilities
 - Leverages the FAA NAS Enterprise Messaging Service (NEMS) for connectivity

What is in SFDPS?

EN ROUTE FLIGHT DATA PUBLICATION SERVICE

➤ 26 Messages

Flight Plan Information	Tentative Flight Plan Removal
Flight Amendment Information	Tentative Flight Plan Amendment Information
Converted Route Information	Track Information
Cancellation Information	Drop Track Information
Departure Information	Interim Altitude Information
Aircraft Identification Amendment Information	Automated Radar Terminal System (ARTS) Flow Control Track/Full Data Block Information*
Hold Information	
Progress Report Information	Beacon Code Reassignment
Flight Arrival Information	Beacon Code Restricted
Flight Plan Update Information	FDB Fourth Line Information
Expected Departure Time Information	Point Out Information
Position Update Information	Inbound Point Out Information
Tentative Aircraft Identification Amendment Information	Handoff Status
	Tentative Flight Plan Information

What is in SFDPS? – Cont.

EN ROUTE AIRSPACE DATA PUBLICATION SERVICE

➤ 4 Messages

Sector Assignment Status

Route Status

Special Activities Airspace (SAA)

Altimeter Setting

What is in SFDPS? – Cont.

EN ROUTE OPERATIONAL DATA PUBLICATION SERVICE

➤ 5 Messages

Traffic Count Adjustment

Instrument Approach Count Adjustment

Sign In Sign Out

Beacon code Utilization

Geographic Beacon Code Utilization

What is in SFDPS? – Cont.

EN ROUTE GENERAL MESSAGE PUBLICATION SERVICE

➤ 5 Messages

General Information

Interim Altitude Status Information

Hold Status Information

ERAM Status Information

Unsuccessful Transmission Information

Why SFDPS?

- Standards-based flight data format
- Customizable feeds including
 - Flight Status
 - GUF
 - Airspace, Operational Status
- An enhanced feed eliminating redundant and conflicting data
- Flexible, ad-hoc query capabilities of current and historical data
 - For retrieval of information such as Flight Status and Sector Configuration
 - For fast user start-up with a snapshot of all currently active and planned flight data
- Loosely coupled services enabling simple integration, consumption and room for growth
- Redundancy in operations

Program Status

- Currently in deployment phase
- Scheduled to go operational in summer of 2015
- Future enhancements being planned



Questions



STDDS Update

- **ASDE-X Transition**

- Legacy feed was disconnected on April 1st

- **RVR DF Transition**

- Approximately 25 clients to transition
- FAA EES team is coordinating the transition
- Work has begun on the transition
- Completion date: November 2015
 - Legacy feed disconnection planned – Nov 2015

STDDS Update

- **Release 3.2 – Schedule is TBD pending internal discussions on Sensitive Flight Filtering process, outcome of SMES data quality solutions**
 - New & Improved:
 - (STARS) “TAIS”
 - (ASDE-X) “SMES”
 - (APDS) “RVR”
 - Release Notes: “Draft” Distributed via NSRR in May
 - Planning early R&D or FNTB access

Schedule – 90 days

