

SWIM Connect 2014 Get Plugged In...

SWIM Flight Data Publication Service

By: George Curley
Volpe Center Development Lead

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SWIM Flight Data Publication Service (SFDPS)

- SFDPS is the SWIM interface for ERAM data
 - First to publish En Route flight data via FAA System Wide Information Management (SWIM)
- Early adopter of FIXM and AIXM standards
- Built with reusable services:
 - Flight Matching & GUF1
 - FIXM & AIXM translators
 - Historical database
- Leverages the FAA NAS Enterprise Messaging Service (NEMS) for connectivity

SFDPS Highlights

- Produces NAS flight data in SWIM compliant formats
- Makes using flight data easy in modern applications like Google Earth
- Supports a key element of NAS Enterprise Architecture
- Includes flight matching and GUF1
- Enhanced feed eliminates redundant and conflicting data
- Supports FIXM and AIXM standards
- Current and historical databases provide snapshots and reconstitution
- Consumer customizable data feed
- Publish/Subscribe and Request/Response
- Built on a modern and scalable infrastructure

SFDPS Benefits

- SFDPS is already available to users in NAS R&D environment (e.g. Mitre)
 - Feedback encouraged
- Publish/Subscribe provides constant timely stream of En Route messages
- Request/Response supports flight query snapshots and reconstitution
- Rich matched data set of available for Big Data Analytics

SFDPS Benefits

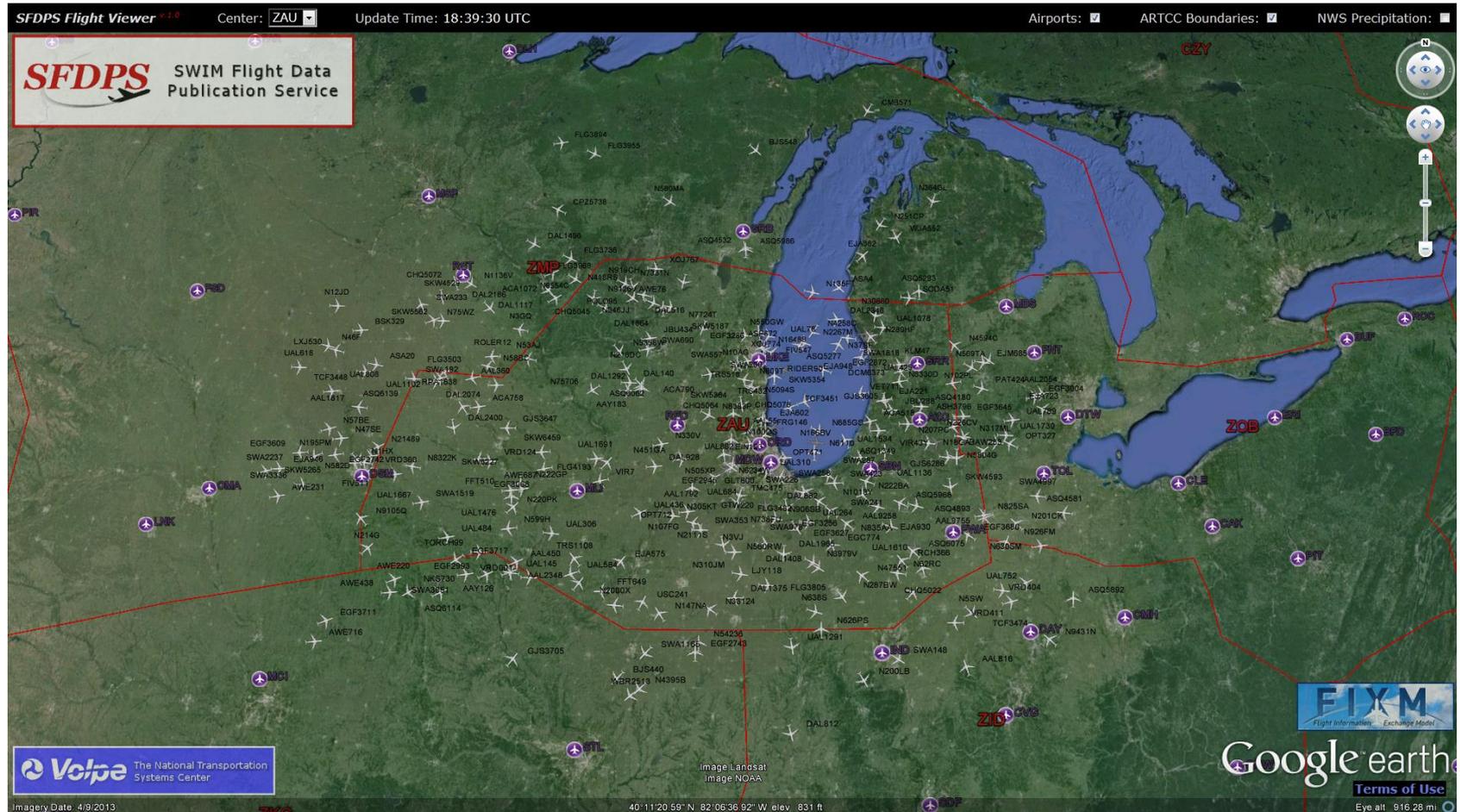
- Supports “Flavors” of feeds to support users transitioning to Standards (e.g. FIXM)
 - Basic XML feed contains all messages
 - FIXM feed allows users to prepare for the future.
 - Enhanced feed eliminates redundant conflicting and non-authoritative data.
- Consumer customizable data feed allows users to get only the data of interest to them.

SFDPS example use one

- The following slide shows a user registering to SFDPS's for customized data:
 - Pub/Sub data
 - Consumer receives a timely stream of XML messages by connecting to a topic
 - Chicago center flight position (TH messages)
 - FIXM format

Note : The user in this example selected Google earth to display the data

SFDPS Publish/Subscribe example



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What Value Does SFDPS Publish/Subscribe Bring to Users

- Standards-based data format
- Customizable feed including:
 - Flight Status
 - GUF
 - Airspace, Operational Status
- Enhanced feed eliminates redundant and conflicting data
- Loosely coupled services enable simple integration, consumption and reuse

SFDPS example use two

- The following slide illustrates an example of a user requesting customized data:
 - Supports User Queries
 - Flights departing ATL flying through ZAU
 - XML format

Note : The user in this example selected Google earth to display the data

SFDPS Request/Response

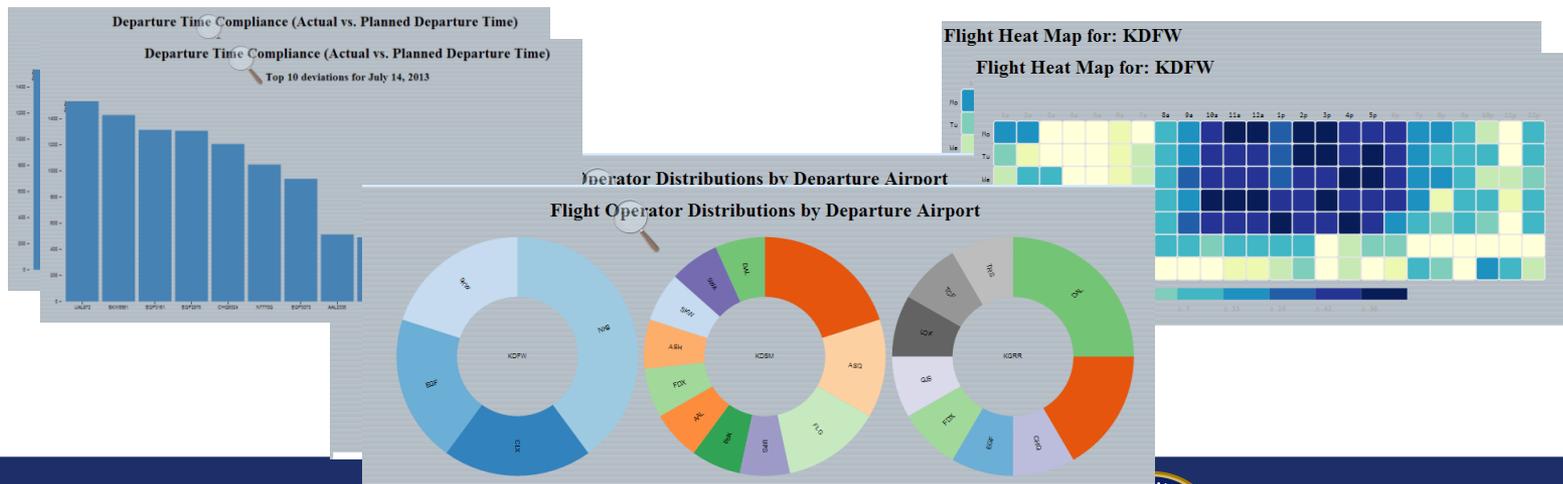
- Consumer can use standard SOAP-over-HTTP clients to request a rich combination of SFDPS data
- Loosely coupled scalable design supports wide variety of queries ranging from one flight to thousands of flights
- Common use cases (such as single flight history lookup) engineered to run with very fast performance

What Value Does SFDPS Request/Response Bring to Users

- Standards-based, flexible query capability
- Supports fast user start-up with a snapshot of all current active and planned flight data
- Supports ad-hoc queries for current and historical data including:
 - Flight Status
 - Sector Configuration

SFDPS Database

- Supports both current and historical data storage and retrieval
- Enables fast and accurate Flight Matching
- Built-in support for Big Data Analytics



What Value Does the SFDPS Database Bring to Users

- SFDPS flight matching (GUFI) makes it easy
 - Various Flight messages are already correlated
- Just a few data analysis examples:
 - Compare predicted vs actual departures times
 - Compare control times vs actual departure times
 - Determine the busiest departure and arrival fixes
 - Measure the busiest traffic areas

SFDPS Current Status

- Available for users in R&D environment now
- Currently in Operational Testing (OT)
- Scheduled for deployment in Summer 2015
- Future enhancements being finalized

Contact Information

- Visit: www.faa.gov/NextGen/SWIM
- Email requests to: 9-AJM-312-EnterpriseEngineeringServices@faa.gov