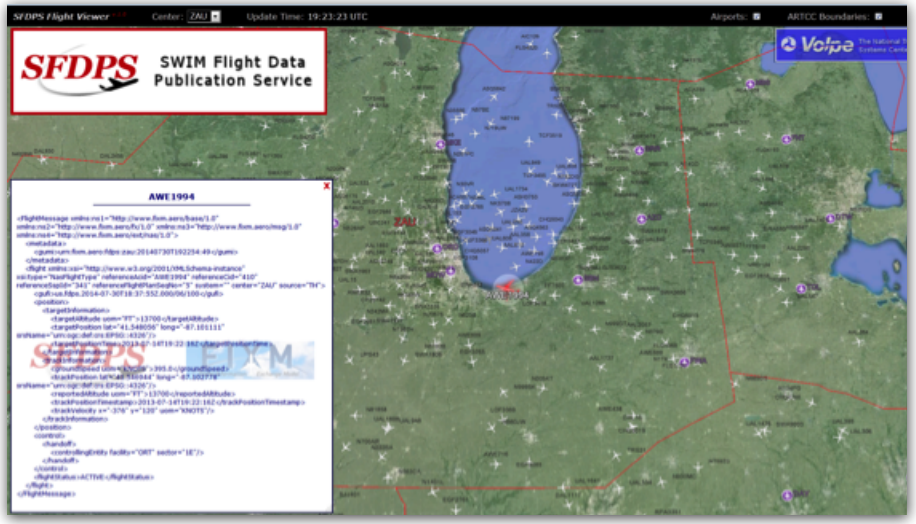
SWIM Flight Data Publication Service (SFDPS)

SWIM

System Wide Information Management (SWIM) is an infrastructure program that allows members of the Aviation Community to access the information they need to facilitate an innovative and efficiently run National Airspace System (NAS). The SWIM program is being implemented in segments. In each segment, a set of NAS services is being developed and integrated via SWIM. Enterprise infrastructure is added to support the implementation of capabilities associated with the segments. SWIM enterprise infrastructure will enable systems to request and receive information when they need it, subscribe for automatic receipt, and publish information as appropriate. This will provide for real-time information sharing among key decision makers in diverse systems.



Chicago Center (ZAU) Flight Data (FIXM format)

SFDPS

- First to publish En Route flight data via FAA SWIM
- Early adopter of Flight Information Exchange Model (FIXM) and Aeronautical Information Exchange Model (AIXM) standards
- Built with reusable services:
  - Flight matching & Global Unique Flight Identifier (GUFI)
  - FIXM and AIXM translators
  - Historical Database
- Current and historical databases provide snapshots and reconstitution
- Consumer customizable data feed
- Built on a mature, robust and scalable infrastructure
- Leverages the FAA NAS Enterprise Messaging Service (NEMS) for connectivity
- SFDPS is now operational in the NAS environment

SWIM connect 2015

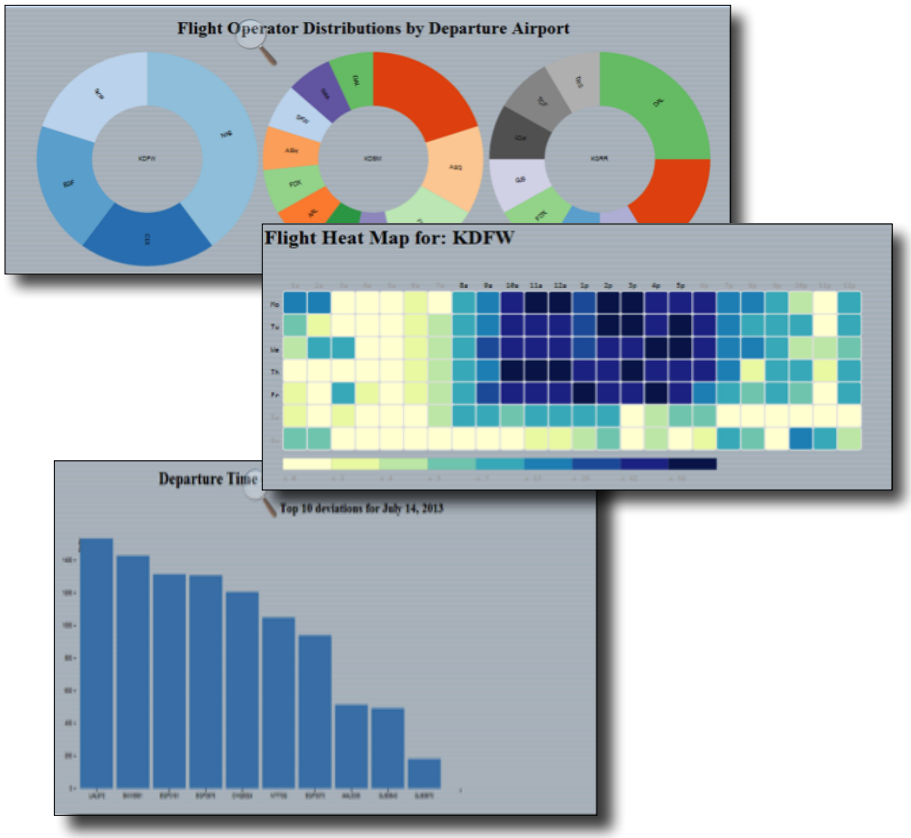
Information Access to Transform the Aviation Community

SFDPS Publish/Subscribe

- Consumer receives a stream of standardized Extensible Markup Language (XML) messages by connecting to a topic with any Java Message Service (JMS) client
- The system and infrastructure use industry standard protocols to make client development easy
- XML message formats make complex information accessible as easily understood data structures
- Flight data can easily be converted to Keyhole Markup Language (KML) to be viewed in any Geographic Information System (GIS) software (including Google Earth and Google Maps)
- Enhanced feed eliminates redundant and conflicting data

SFDPS Request/Response

- Consumer can use standard Simple Object Access Protocol (SOAP)-over-Hypertext Transfer Protocol (HTTP) clients to request a rich combination of SFDPS data
- Loosely coupled, scalable design supports a 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 fast performance
- Supports ad-hoc queries for current and historical data including Flight Status and Sector Configuration



SFDPS Database

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

For more information visit:
www.faa.gov/nextgen/programs/swim

Federal Aviation Administration