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# FAA SAA Dissemination Pilot

Presentation at Aviation DWG  
OGC TC meeting in Bonn, 2011

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# Outline

- Introduction
- Architecture
- AIXM SAA Extension
- Lessons Learned

# Introduction

- Sponsor: FAA
- Period of performance:
  - mid December 2010 – mid June 2011
- Pilot goal: improve dissemination of SAA data
  - automated
  - interoperable
- in support of Next Generation Air Transportation System (NextGen) activities

# What is Special Activity Airspace (SAA)?

- Activities within this airspace may pose a hazard or increased flight risk to non-participants.
- Rules and/or restrictions may be placed upon both participants and/or non-participants with regard to that specific airspace.
- Airspace status is published or broadcast to increase situational awareness for non-participants.
- Establishment of the airspace is coordinated between user and controlling agency.

# Special Activity Airspace

ATCAA

TFR

ALTRV

LAA

Other

## Special Use Airspace

MOA

NSA

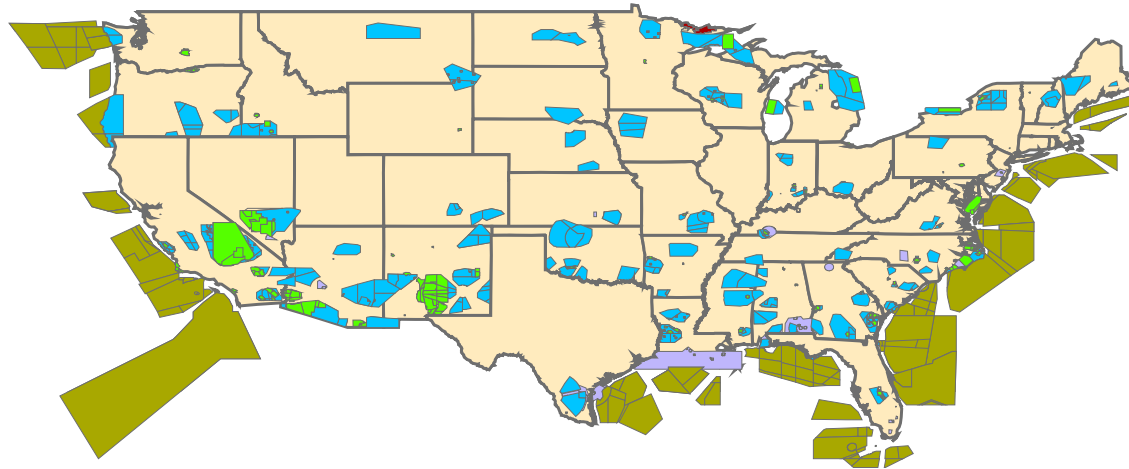
CFA

PA

RA

WA

AA



# The Challenge - Designing

- Current SUA design and approval
  - One system used for design
  - Paper charts used for approval
  - Another system/format used for SUA storage
  - Yet another used for display (charting)
- Need
  - Single system for design, review, and approval.
  - Single format (AIXM) for all users and consumers

# The Challenge - Scheduling

- No standardized means for submitting daily Special Activity Airspace schedules to FAA
  - Schedules arrive at FAA in several formats and across several different platforms



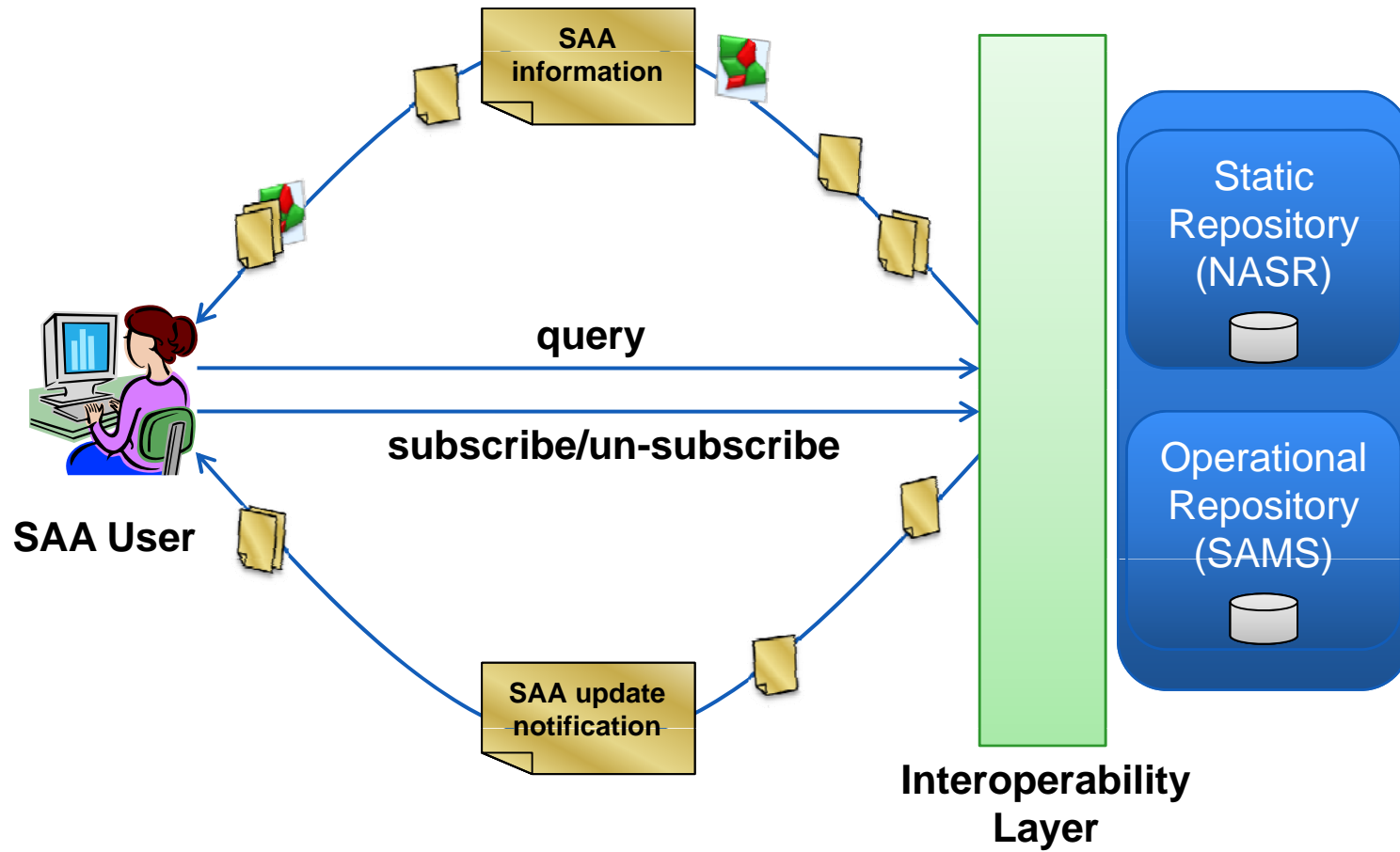
- Need
  - Automated, and efficient means for DoD-FAA coordination on SAA scheduling
  - Effective method for dissemination of schedules to non-participating stakeholders

# Pilot Scope

- goal:
  - extend the SAA SWIM Services to enable the dissemination of SAA information (including updates) to National Airspace System (NAS) stakeholders and other external users via OGC Web Services
    - Build on SAA SWIM Services leveraging the WFS, FPS, Event Service and AIXM
    - towards end-to-end automated information flow from the US Department of Defense (DoD) - originators of SAA activation requests - to airlines and other NAS stakeholders.
- out of scope – but possible in future activities:
  - Creation or edit of SAA features,
  - Process for proposing / approving / uploading / synchronizing / propagating SAA schedule changes, reservations, etc,
  - Interaction with or support for any other SWIM service.



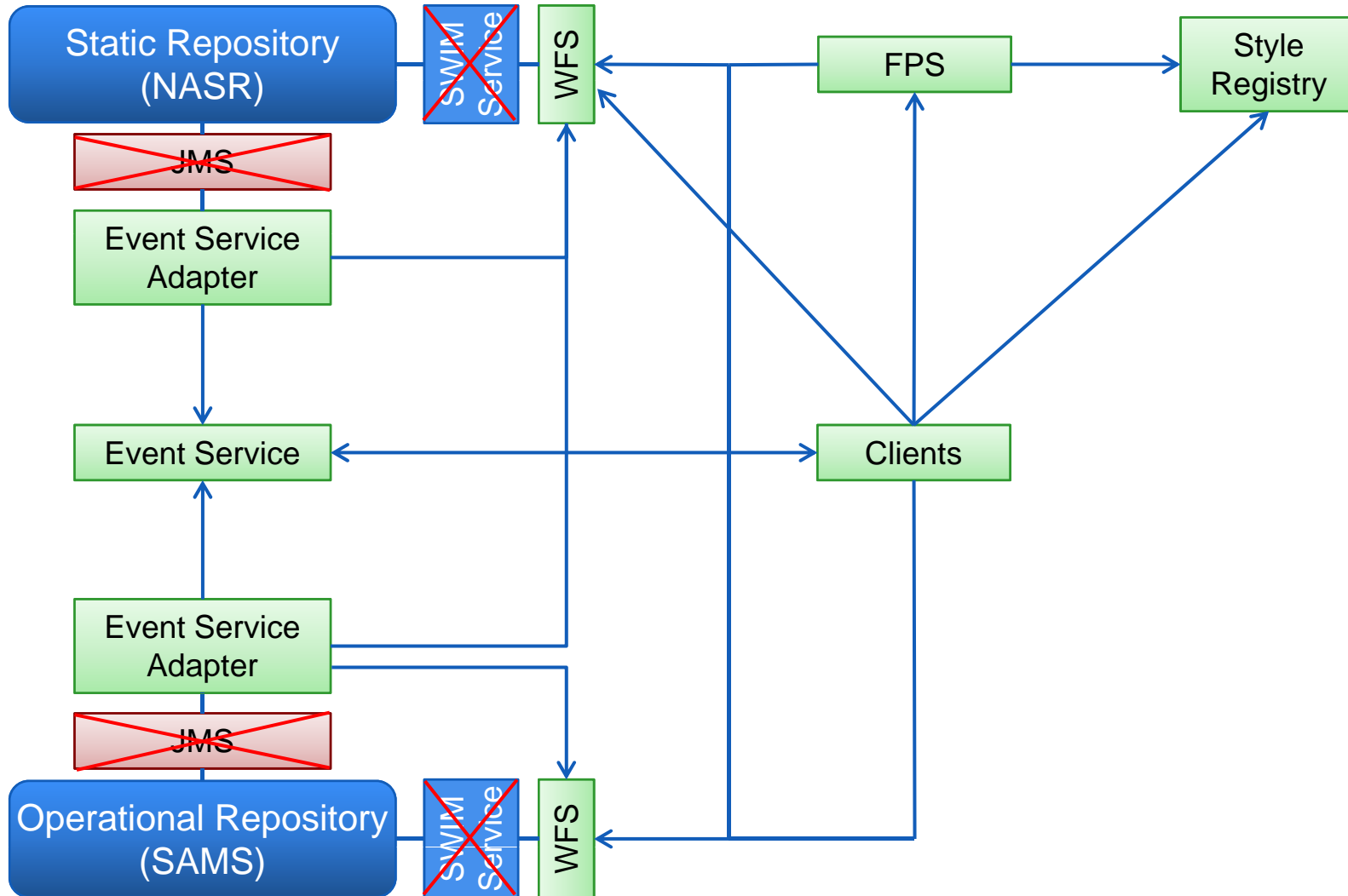
# Use Cases



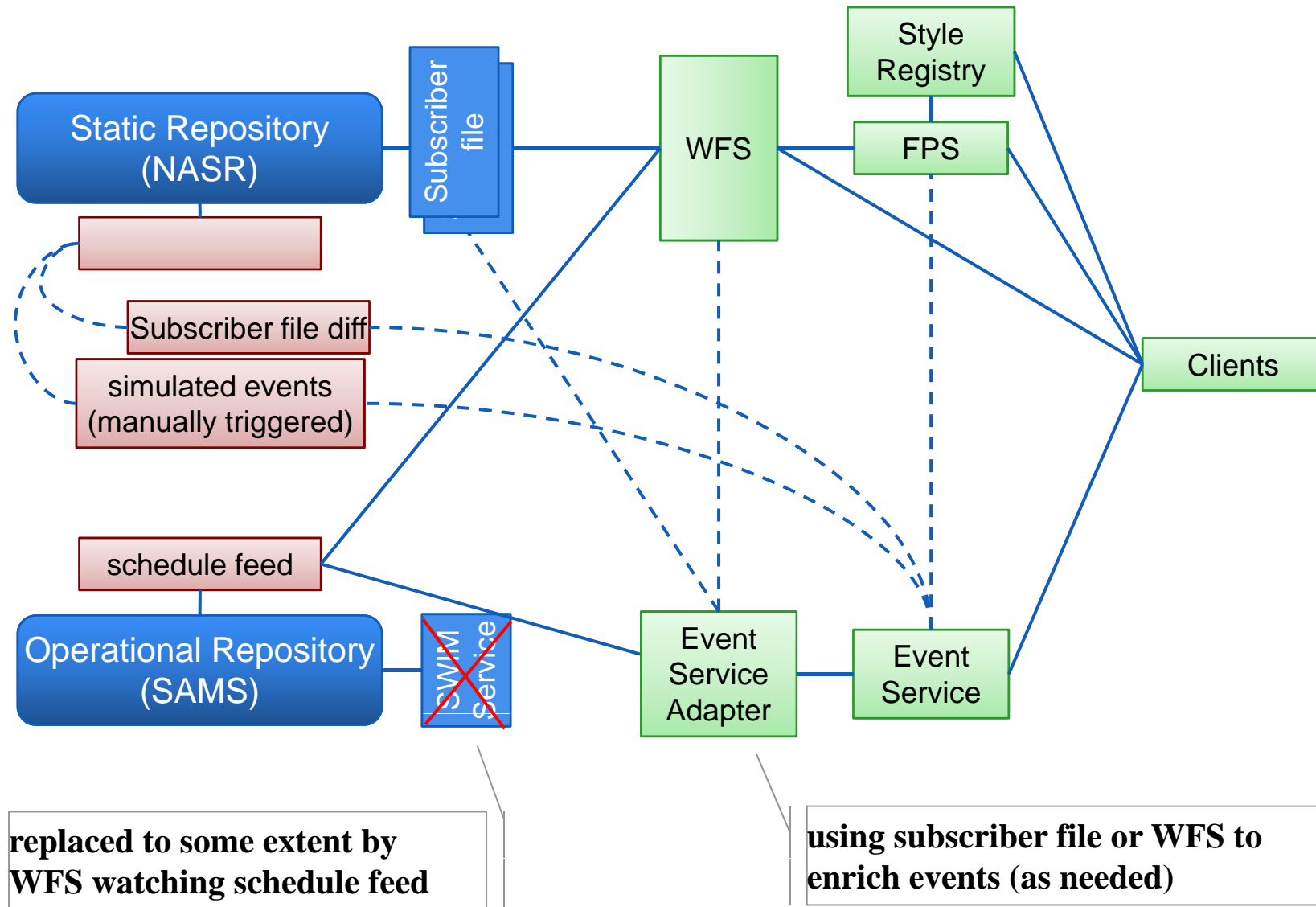
# Pilot Participants

Organization	Deliverables
Boeing/Jeppesen	Aviation Client
Concept Solutions	Engineering Report
Galdos-Envitia	Feature Portrayal Service / Registry
Institute of Geoinformatics – U of Muenster	Event Service/Adapter
Luciad	Web Feature Service/ Feature Portrayal Service / Aviation Client
Lufthansa Systems FlightNav	Aviation Client
Snowflake	Web Feature Service/ Event Service Adapter

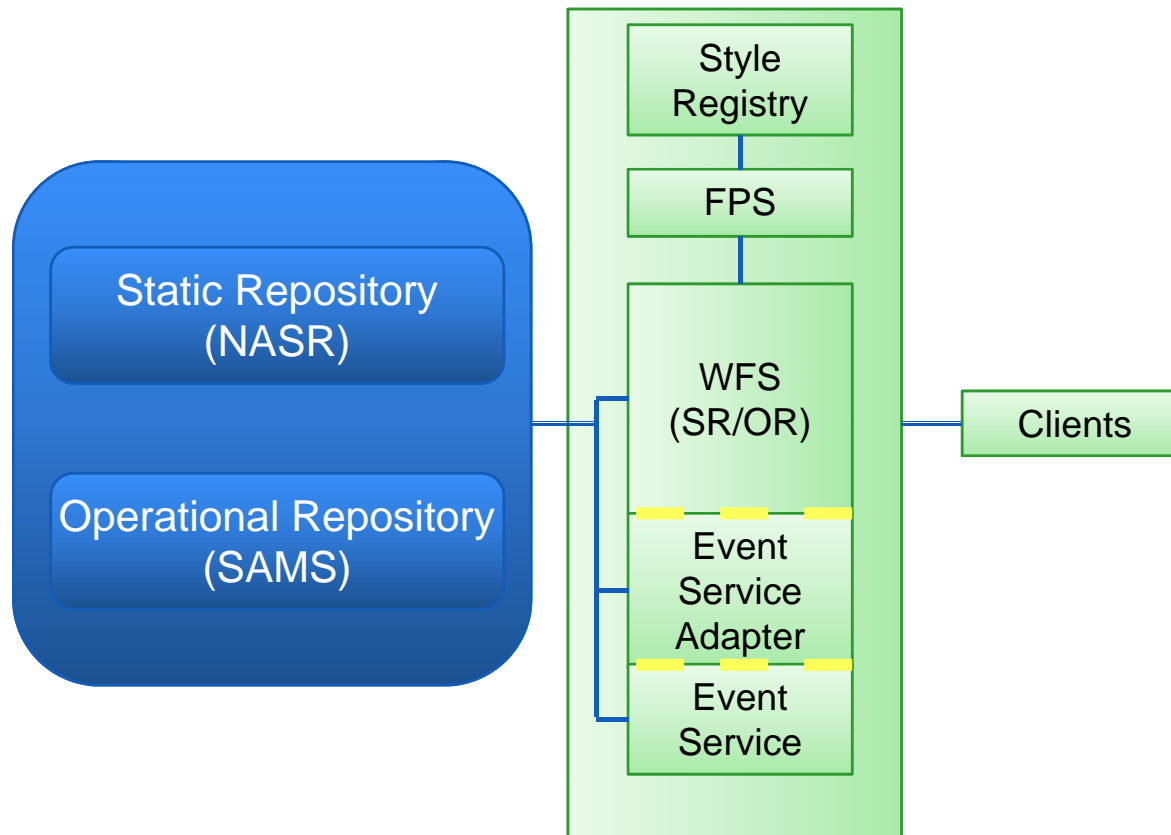
# Architecture - RFQ



# Architecture – Current Picture

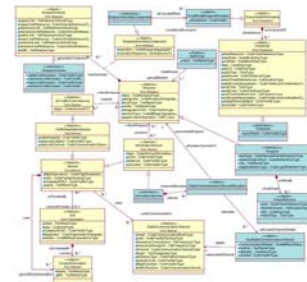
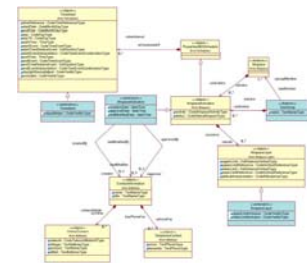
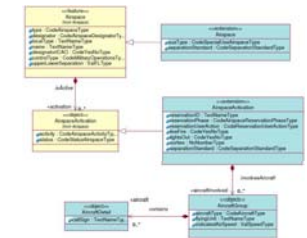


# Future Architecture



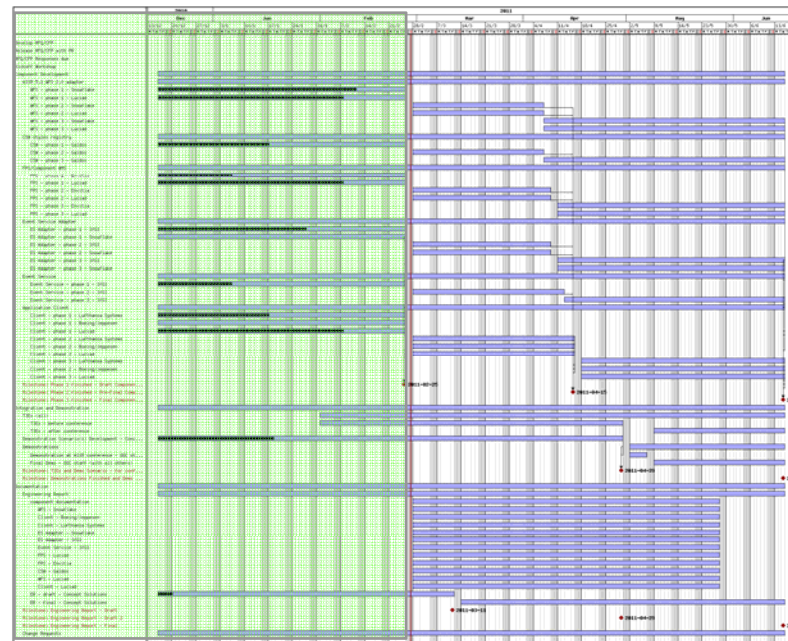
# AIXM SAA Extension

- Extended the core AIXM model to include:
  - New elements on existing features/objects:
    - Airspace, AirspaceActivation, AirspaceLayer, Timesheet, ...
  - New relationships:
    - RadioCommunicationChannelAllocation (relates airspaces and radio channels), ...
  - New features/objects:
    - SaaGroup, SaaMessage, ConditionalAirspaceExclusion, AircraftGroup, AircraftDetail ...
- AIXM 5.0 SAA → AIXM 5.1 SAA
- For detailed information, contact: Kevin Lew



# Current Status

- first half of Pilot almost completed
- component development phase #1 finished
- integration test phase started
- halfway through demo development
- documentation starts now



# Lessons Learned

- recommendations/changes to GML:
  - ArcByCenterPoint interpretation
- clarification of Filter Encoding 2.0 operators