

System Wide Information Management Segment 1B

Final Investment Decision

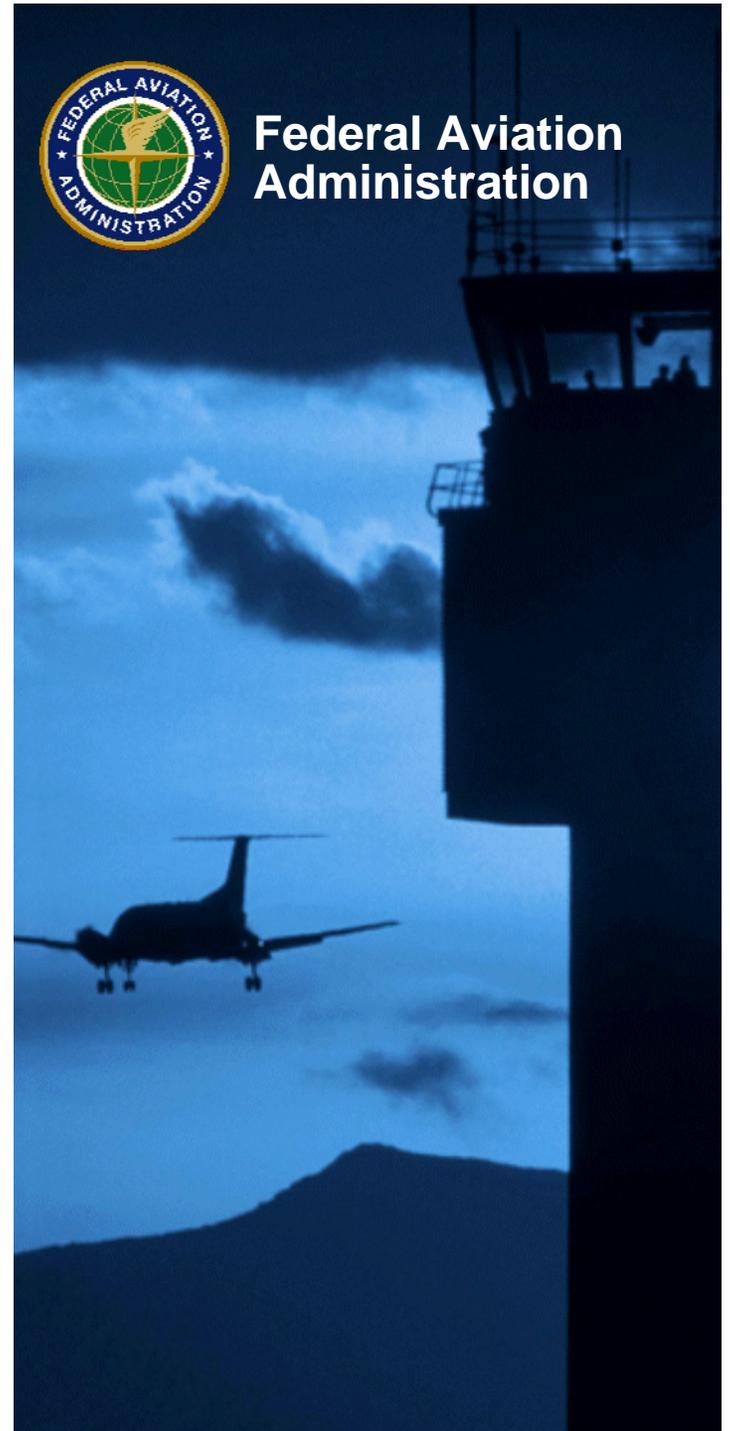
Presented to: Members of the JRC

By: Ahmad Usmani, SWIM Program Manager

Date: July 15, 2009



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Program Concept

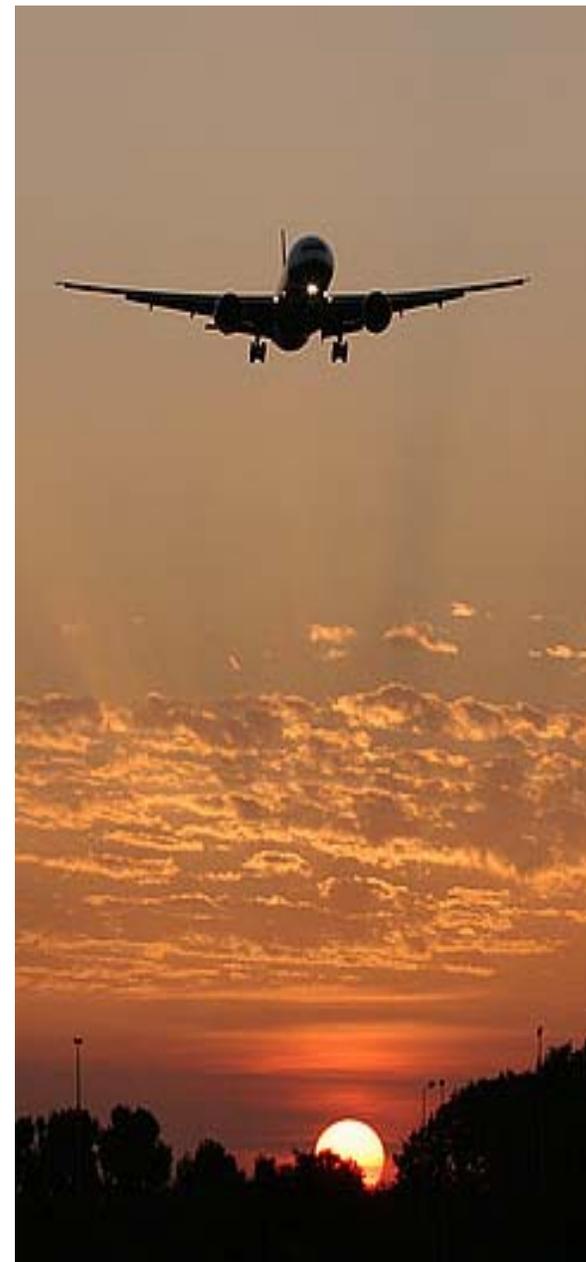
SWIM is an IT infrastructure program that will operate in the background to provide data to authorized users

SWIM will:

- Implement a **Service-Oriented Architecture (SOA)** in the NAS
- Allow the FAA to create new system interfaces more quickly and cheaper than is possible today
- Facilitate the data-sharing that is required for NextGen

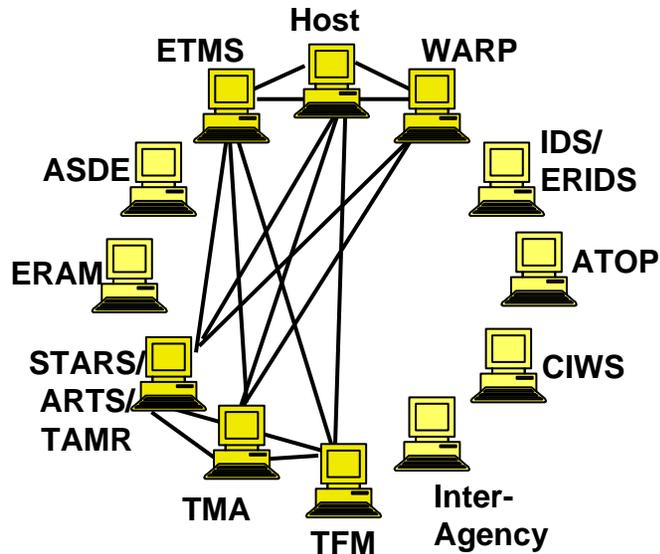
SWIM is *not*:

- A set of avionics equipment
- A substitute for NAS modernization programs
- An FTI replacement

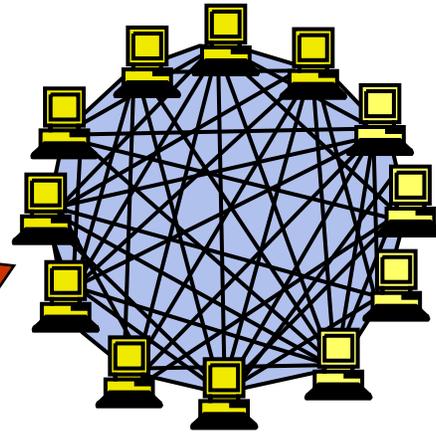


State of the System

Today



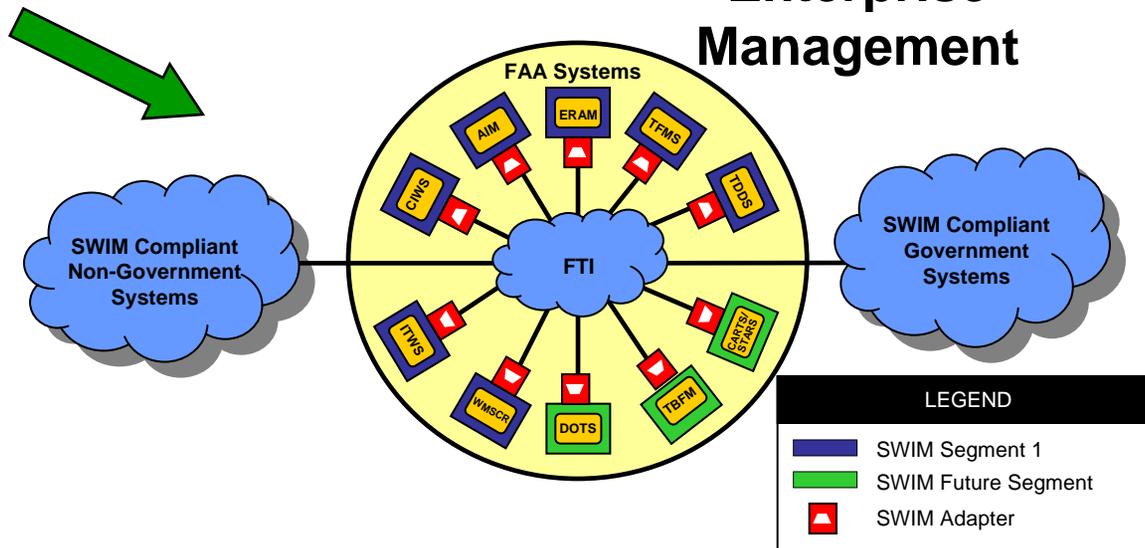
- Existing point-to-point hardwired NAS
- Unique interfaces, custom designs



Business as Usual

- More point-to-point unique interfaces
- Costly development, test, maintenance, CM
- New decisions linked to old data constructs
- Cumbersome data access outside the NAS

Enterprise Management



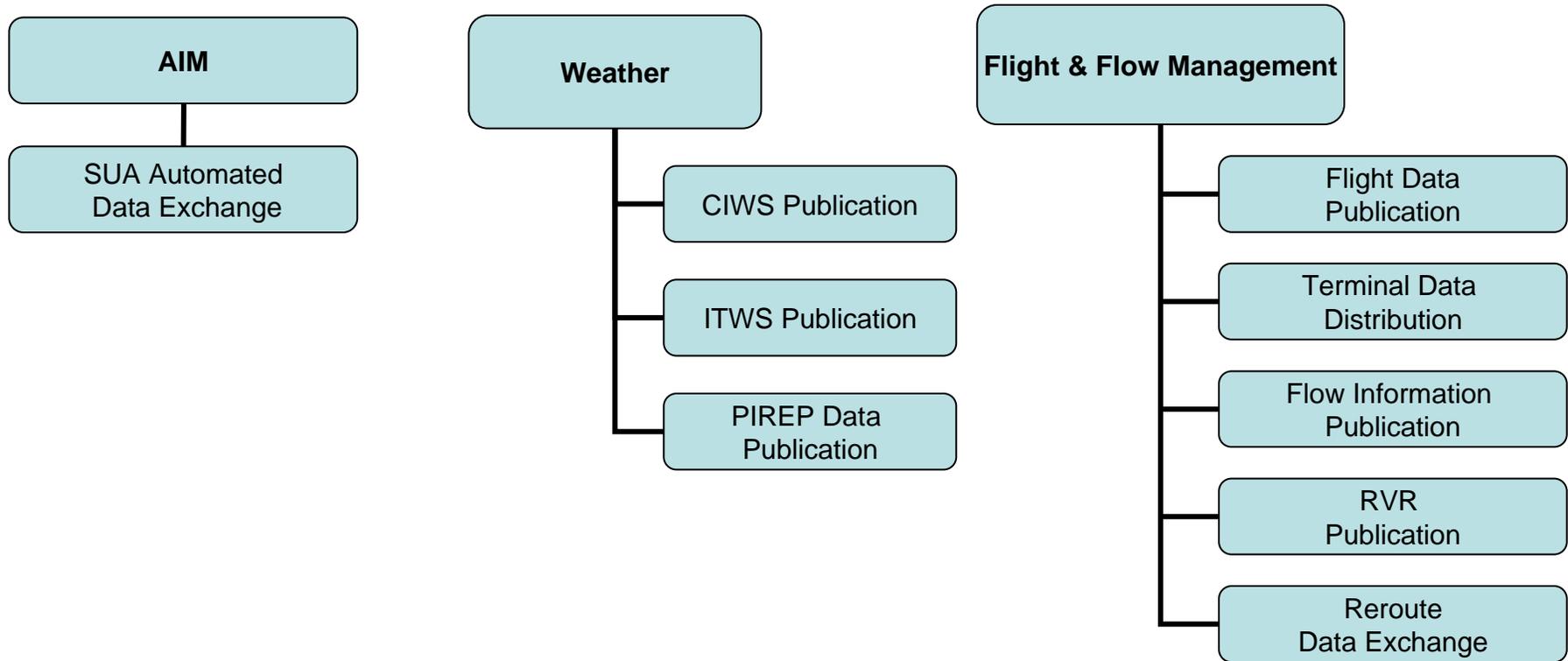
LEGEND	
	SWIM Segment 1
	SWIM Future Segment
	SWIM Adapter

Program Overview

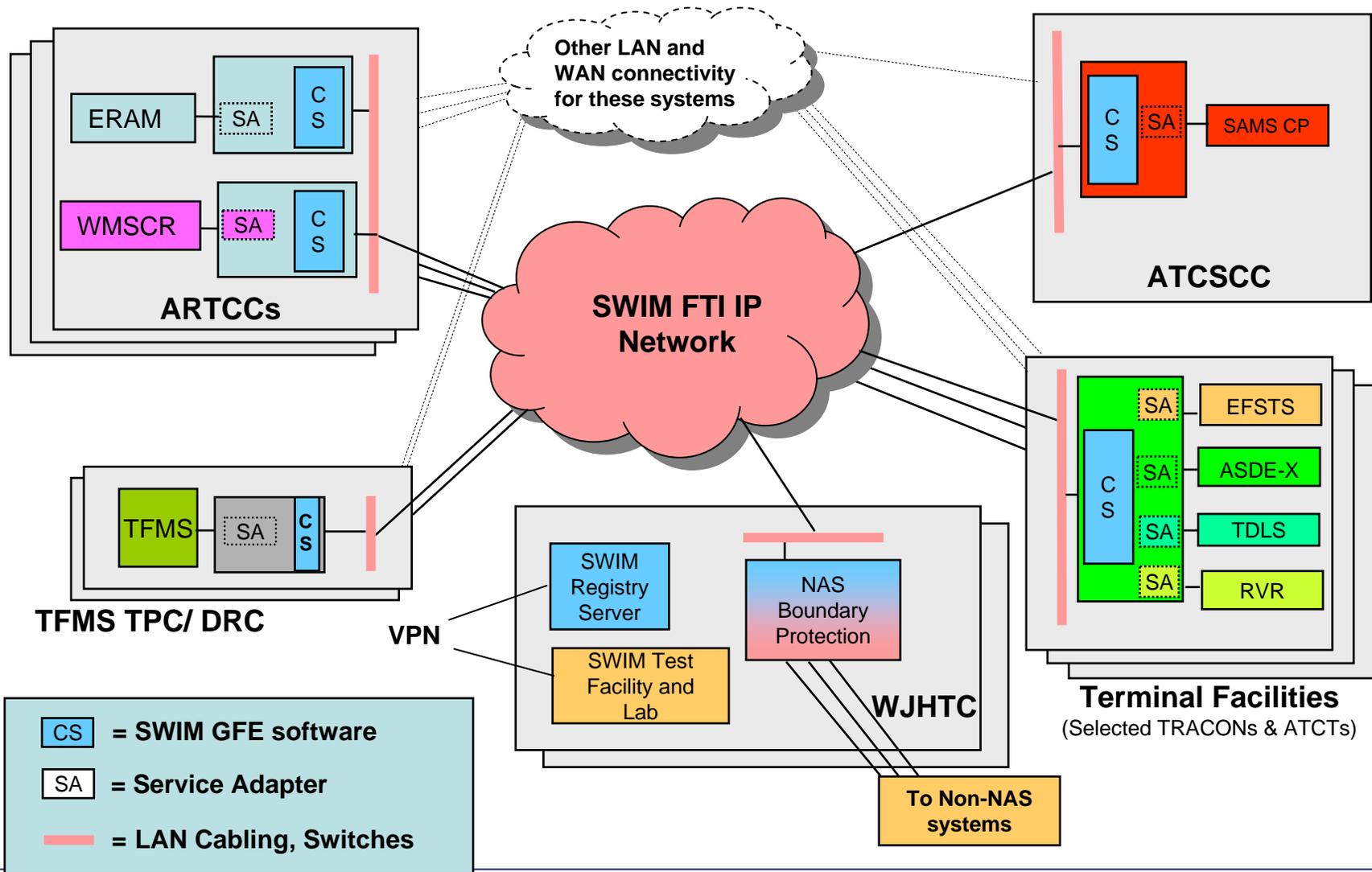
- IARD in September 2005, IID in July 2006
- Nine Segment 1 capabilities were derived from Communities of Interest, and a SWIM Business Case was presented to the JRC in June 2007
- SWIM received approval for FY09 and FY10 funding and associated activities at the June 2007 Final Investment Decision (FID)
- JRC direction to SWIM was to return in 2009 with refined cost estimates for review and approval by the JRC for the remaining years of SWIM Implementation.
 - Based on development contractor estimates
 - AJF recommends requesting funding for FY11 – FY15



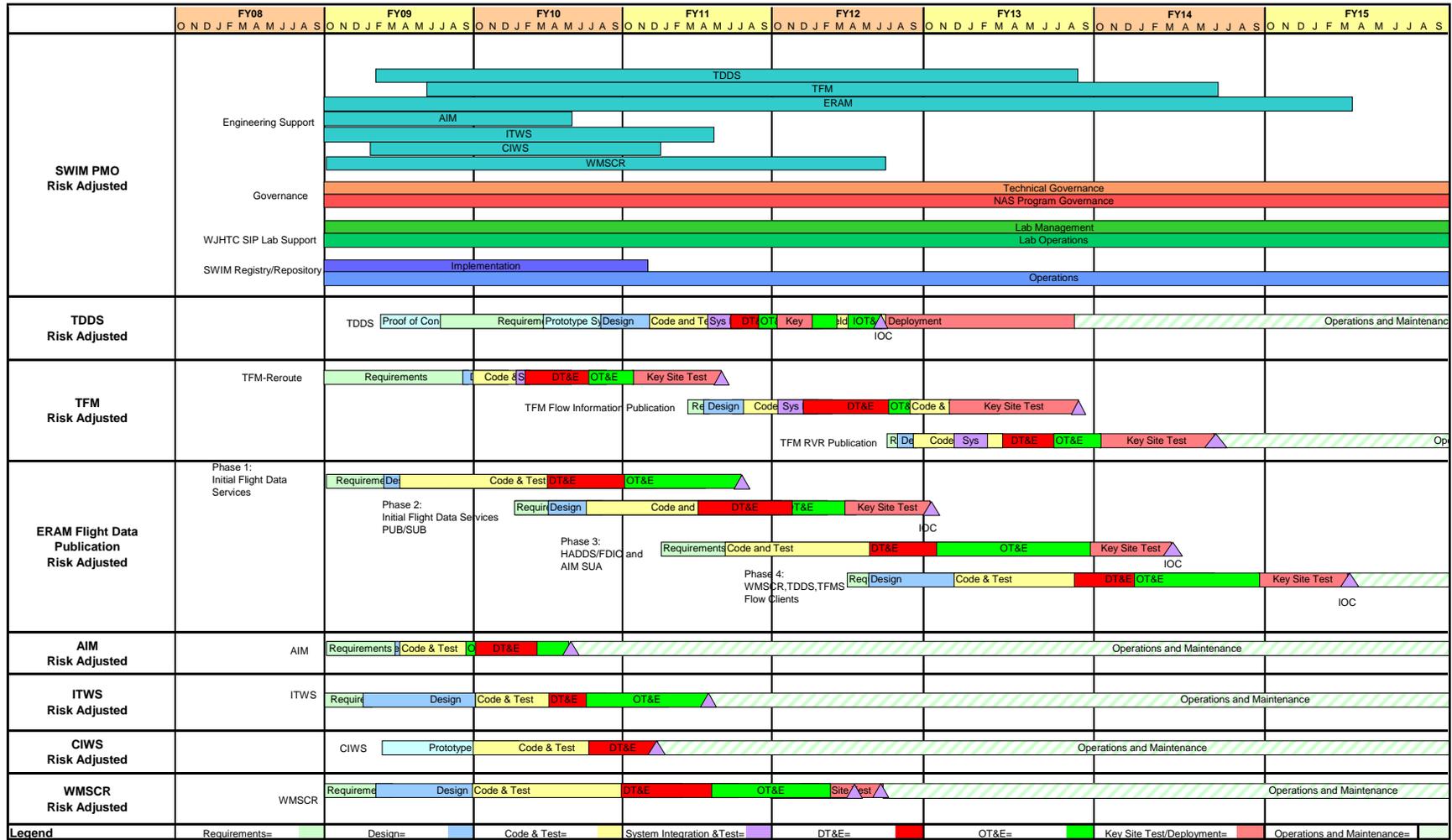
SWIM Segment 1 COI Capabilities



SWIM Architecture with Core Services



SWIM High-Level Program Schedule



Decision Requested

- **Approve Segment 1B baseline for FY11 – FY15**
 - Proceed with development and deployment of remaining Segment 1 SWIM capabilities by TFM, ERAM, TDDS, WMSCR, CIWS and ITWS
 - SWIM PMO to provide Governance to Segment 1 participants and oversight to SWIM Implementing Programs (SIPs) implementation of capabilities
- **In-service decisions are delegated to SIPs**
- **Request a single CIP line for both Segment 1A and Segment 1B**
- **Tech Refreshes needed after FY15 to be the responsibility of the SIPs**



Performance Gap / Justification

- **FAA Flight Plan: Organization Excellence**
 - Objective 2 – Improve Financial Management While Delivering Quality Customer Service
 - Reduce costs to deliver data services via external gateway
 - Reduce application-to-application development costs
 - Provide shared situational awareness through Flight Data Publication
 - Improve collaborative decision making
- **ATO Five-Year Strategy Goals**
 - 4.1.3 Achieve adaptability and affordability through a common automation platform
- **ATO SMP: Pathway 2 – Enhance Financial Discipline**
 - P2.4 Reduce unit cost and improve value of operations
 - Automation of manual processes for capturing weather reports and updating SUA status
 - Cost avoidance by enabling early retirement of HADDS and FDIO



Metrics and Associated Milestones

(Section I.C. Table 2 of Exhibit 300 Report)

Fiscal Year	Measurement Area	Measurement Category	Measurement Indicator	Baseline	Planned Improvements to the Baseline	Actual Results
FY07 - FY14	Customer Results	Customer Impact or Burden	Cost of developing an application-to-application I/F	Initial baseline in FY07, refined baseline in FY08, FY09	Reduce by 5% in FY10, 10% in FY11, 15% in FY12	Cost to develop interface is \$1.63M - \$22.2M depending on complexity of interface and number of sites needing adaptation
FY10 - FY14	Processes and Activities	Cycle Time	Frequency of SUA Management Status updates.	Measure initial baseline in FY10	Reduce cycle time by 10% over original baseline by FY11	N/A
FY09 - FY14	Technology	Accessibility	Number of data products provided via SWIM	No products in FY08.	10% increase over FY10 baseline	Four products in FY09
FY09 - FY14	Mission and Business Results	Information Security	Number of users connected to secure gateway	Establish baseline in FY09; refine in FY10	Increase FY10 baseline by 25% in FY14	Currently one user

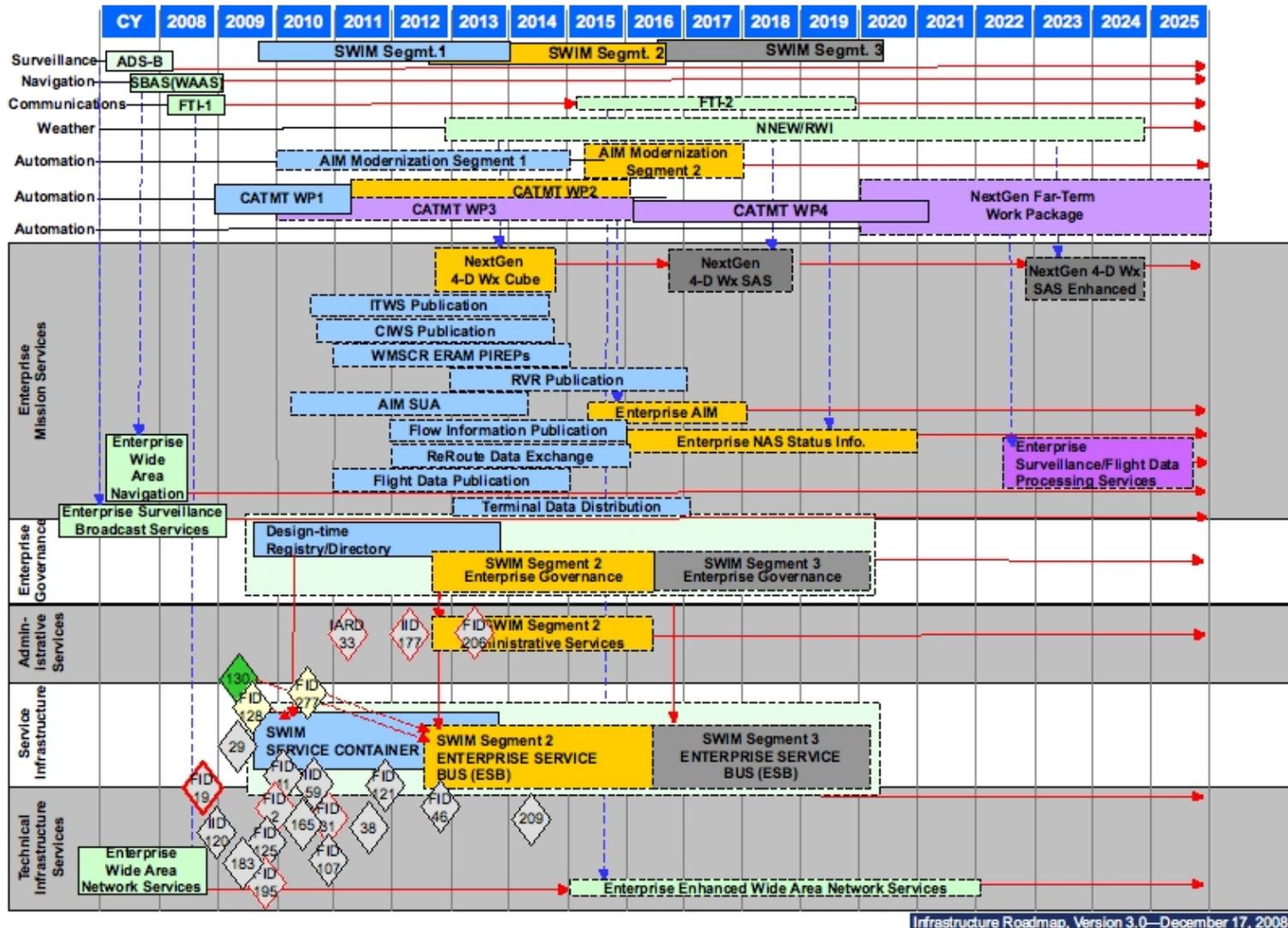


SWIM Program Management Overview

- **SWIM PO is responsible for:**
 - Overall Program Cost and Schedule
 - SWIM System Engineering and Requirements Management
 - Definition and Maintenance of Program Level Agreements (PLAs) with implementing programs
 - Governance of Segment 1 participants
- **SIPs are responsible for:**
 - Managing the development and deployment of allocated SWIM requirements per the SWIM Final Program Requirements Document and in accordance with the SWIM Program Schedule
 - Reporting progress against schedule, providing monthly EVM information to SWIM PO per PLAs



NAS Enterprise Services Roadmap



Infrastructure Roadmap, Version 3.0—December 17, 2008

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System Interdependencies

- **SWIM Segment 1 has interdependencies with the following systems:**
 - CIWS
 - ERAM
 - ITWS
 - AIM (NASR,SAMS)
 - TDDS (FDIO, TDLS/PDC, NGRVR, EFSTS, ASDE-X)
 - TFMS
 - WMSCR
 - FTI



Risk Management

Description of Risk	Risk Rating	Strategy for Mitigation	Current Status
Unspecified / Changing Segment 1 requirements	Medium	Develop use cases for every anticipated application	Engineering prototype at WJHTC was used in requirements validation process; use cases completed
External Pressure	Medium	Frequent coordination and communication with DOT, OMB and industry helps manage expectations and achieves early buy-in	Coordination and communication with DOT, OMB and industry is on-going
Interface integration: staggered interface implementation	Medium	Service Oriented Architecture (SOA) is very flexible, allows adding of interfaces without affecting other interfaces. Interface Requirement Documents (IRDs) will define interfaces	SWIM is working with SIPs to identify interface scheduling issues and the SWIM Implementation Team is supporting early development of IRDs by SIPs
Security implementation	High	Working with security to identify security requirements, and specifically, which ones are allocated to SWIM	Security concept being developed by ATO-P; current security requirements are flowed to SIPs
Contract management	Medium	Internal and external reviews are being held with the SIP contractors to ensure compliance with functional requirements and production and deployment schedule	A SWIM implementation plan has been developed with strategies to mitigate this risk
Design coordination needed across SIPs for interface standards	Medium	Design for threads across domains will be coordinated early with SIPs by SWIM PMO	IRDs are under development; SWIM Implementation team is coordinating and overseeing review
Cost estimate may understate true costs	Medium	Perform risk adjustment and coordinate with a risk adjusted schedule; establish reasonable risk ranges for all WBS elements	Cost estimate reflects these factors
Schedule estimate may be incorrect	Medium	Conduct schedule analysis; establish a risk adjusted schedule program implementation; consolidate contractor and government activities and plans	Schedule risk adjustment reflects these risk factors
Software maintenance (more software fixes than planned may be required)	Medium	Increase the modularity of the software; decouple the information management software from the application software; use open systems software whenever possible	SWIM Implementation team is overseeing design and specifications as they are developed
Scope/Requirements creep of program	Medium	Ensure that the baseline requirements document is complete; follow change management guidelines to ensure that scope changes are minimized	SWIM CM is in place; requirements documents have change control mechanism in place
Complexity of implementation	Medium	Internal and external reviews will be held with SIPs to ensure compliance with functional requirements and production and deployment schedule	An implementation plan has been developed with strategies to mitigate this risk. SWIM has attended Design Reviews for AIM, CIWS, ITWS, and WMSCR.



Issues

- **Commitment by SIP PMOs to make SWIM a priority when there are competing demands for resources**
 - Cultural changes associated with Portfolio Management



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