



Design-Time Environment

SWIM Segment 1 COIs:
 - Airspace Information Management
 - Flight and Flow Management
 - Weather
 William J. Hughes Technical Center:
 - Test Facility
 - SWIM Support Lab

Run-Time Environment

SWIM Segment 1 COIs:
 - Airspace Information Management
 - Flight and Flow Management
 - Weather

Service Developer (Producer/Consumer)

Service Reviewer

ASDE-X
 CIWS
 EFSTS
 ERAM
 FDIO
 ITWS
 NASR
 RVR
 SAMS
 TDDS
 TDLS
 TFMS
 WMSCR

GFE SW

SWIM Segment 1 Producing Service Platforms



ERAM
 NASR
 SAMS
 TDDS
 TFM DRC
 TFMS
 WMSCR

GFE SW

SWIM Segment 1 Consuming Service Platforms



CORE CAPABILITIES

- Interface Management
- Messaging
- Security
- Enterprise Service Management

HIGH-LEVEL OPERATIONAL CONCEPT GRAPHIC (OV-1) EXECUTIVE SUMMARY FOR SYSTEM WIDE INFORMATION MANAGEMENT SYSTEM (SWIM) SEGMENT 1

Mission

The mission of SWIM is to provide an information management and sharing architecture for NAS operational data.

Goals

Goals of SWIM are to provide an open, flexible, modular, manageable, and secure architecture for NAS operational data. SWIM moves NAS applications toward a loosely coupled, open distributed processing environment based upon information sharing. These open architecture principles add value by reducing costs, reducing risks, enabling new services, and extending existing services.

Graphic Overview

The SWIM program provides Government Furnished Equipment (GFE) Core Capabilities software to the Segment 1 NAS implementing programs. The implementing programs, En Route Automation Modernization (ERAM); Terminal Data Distribution System (TDDS); Traffic Flow Management System (TFMS); Airspace Information Management (AIM), Corridor Integrated Weather System (CIWS); Weather Message Switching Center Replacement (WMSCR); and Integrated Terminal Weather System (ITWS), provide the hardware to host the GFE Core Capabilities software. The implementing programs also provide configuration management, life cycle support, safety, and security for the SWIM GFE Core Capabilities as part of their planned releases.

SWIM Core Capabilities expose a Service (Information or Application Service) and make information about that Service available to known and potential users at service development time. Service Consumers in turn use the Core Capabilities to locate and download information about the exposed services to generate interface codes to consume and reuse the desired Service. Service development is preceded by Service Providers and Service Consumers resolving requirements and architectural issues through their COIs. Each development is required to comply with SWIM Policy and Guidelines.

When development of a SWIM Service is complete, the service is deployed and monitored on a NAS System platform in the Run-time environment. During service execution, the approved platform provides the services using the SWIM-provided GFE software. A Service Provider exposes a service that is ready for use through the SWIM Registry. In turn, the Registry enables searches (by service category) allowing a Service Consumer to discover the service. In the Run-time environment, a Service Consumer invokes a Service Provider using the pre-compiled interface codes. SWIM Core Capabilities separate information technology concerns from business concerns, promote the re-use of existing services, and encapsulate the infrastructure. This generates cost savings, mitigates integration technology risk, and provides a point of control for implementing enterprise-level guidance. The SWIM Segment 1 Core Capabilities include: Interface Management, Messaging, Security, and Enterprise Service Management.

SWIM Governance defines activities to architect, design, develop, test and implement services. It also defines the methods employed to perform those activities, roles and responsibilities, and metrics to characterize success and adherence to policies. SWIM Governance defines the content for Interface Control Documentation (ICD) that depicts physical, functional, and test interface characteristics between the service consumer and service provider. SWIM will also provide an ICD for the SWIM provided core services software package, which each implementing program may modify to document their specific business service implementation.