

Net Centric Demos/Prototypes Technical Interchange



Federal Aviation
Administration

SWIM Laboratory Activities

Presented to: TIM Participants

By: Bud Timoteo

Date: 3 June 2009

Agenda

- **Description**
- **Key Players**
- **Major Activities**
- **SWIM Resource Kit**
- **SWIM Lab FY09 Accomplishments**
- **Future Plans**



Description

- **The SWIM Laboratory purpose:**
 1. To provide all resources necessary to conduct the SWIM support activities. This includes hardware, software, staffing, and network environments.
 2. Provide an early opportunity to explore, quantify, validate, and define: requirements, standards, policies, performance parameters, and interoperability.
- **Lab consists of 2 facilities at WJHTC**
 - SWIM Prototype Facility (SPF)
 - SWIM Integration Facility (SIF)

SWIM Lab Facilities

- **The SWIM Prototype Facility (SPL) supports the SWIM prototyping and development activities. These activities include:**
 1. Architecture Impact Analysis
 2. QVL Evaluation
 3. SIR Evaluation
 4. Evaluation of the SWIM design-time Registry
 5. Prototyping
 6. Confluence Evaluation (SWIM Wiki)
- **The SWIM Integration Facility (SIF) support the SWIM activities that support the SWIM Implementing Programs (SIPs). Activities include:**
 1. Implementation and hosting of the SWIM COTS Products Repository to provide SWIM required software products and related components to SIPs for their use in the development of SWIM services.
 2. Validation and management of the IONA Fuse Service Container Products and dependent Java artifacts
 3. SWIM COTS Products Issue Tracker
 4. Product Compatibility verification
 5. Laboratory resource support to SIPs as requested in order to facilitate SIP training, testing, and development.

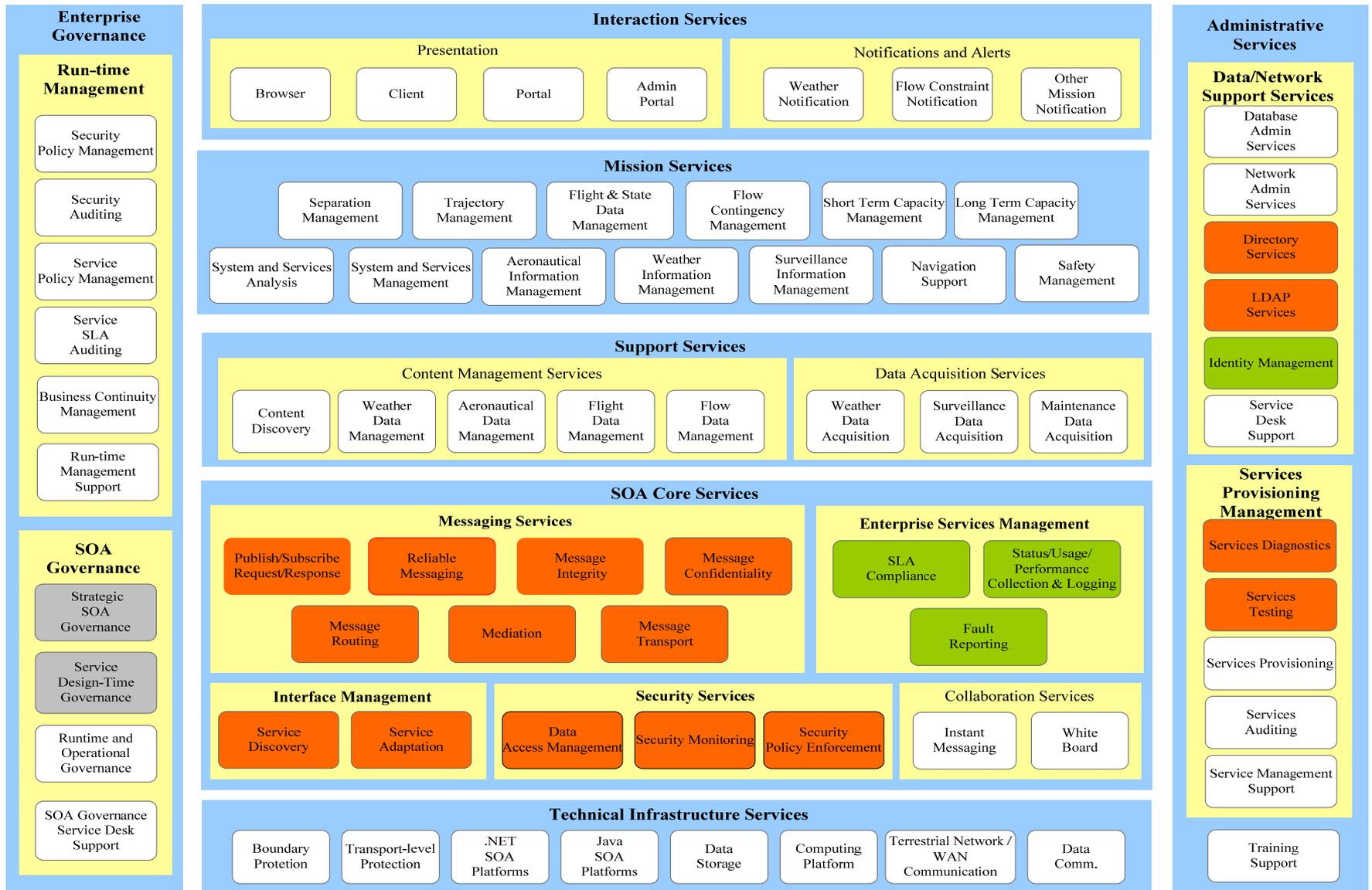


Key Players

- **Kelly Mesveskas, SWIM Prototype Facility Lead**
- **Bud Timoteo, SWIM Integration Facility Lead**
- **Ruben Bigio, SWIM Lab Administration**
- **Federal and Contract Staff**



NextGen NAS SV-4 Framework



Tech Center SWIM Lab Activities

Completed in 2008

Service Container Product Source Selection Evaluation

SWIM Wiki stand-up

Conducted in 2009

SWIM Resource Kit

XML-Gateway Qualified Vendor List

SWIM Design-Time Registry, Version 1 Implementation

SWIM Registry/Repository, Version 2 Evaluation & Procurement

SWIM COTS Products Repository Implementation & Management

SWIM Provided Guidance to Implementing Programs



SWIM Resource Kit

Purpose: To assist the SIP developers in:

1. Learning and utilizing the SWIM Core Services
2. Debugging COTS and related third party products
3. Obtaining and managing the resources required for development
4. Identifying the SWIM Service Container components required to implement their service.
5. Sharing Knowledge
6. SOA Development Testing



Resource Kit (Cont.)

- **SOA Tools**
 - WS-I Testing tools
 - iTKO LISA – SOA Test Tool and Virtual Service Emulation (VSE)
- **Qualified Vendor List (QVL)**
 - XML Gateway
- **SWIM Wiki**
- **Third Party References and Training Information**



Resource Kit (Cont.)

- **Guidance Documentation**

- Maven Guidance
- Developers Guide for Fuse ESB
 - Procedures for installing Eclipse, Fuse tools for Eclipse and Maven plug-ins
 - Build procedures
 - Debugging procedures
 - Examples
- WS-I Development Guide
- WS-Security with Fuse Services Framework Development Guide

Resource Kit (Cont.)

– SWIM Reference Model

- Description of Service container components and interfaces
- Maps Service Container components to Core Services

– Provides list of available Standards

- Core Service Standards
- Industry Standards

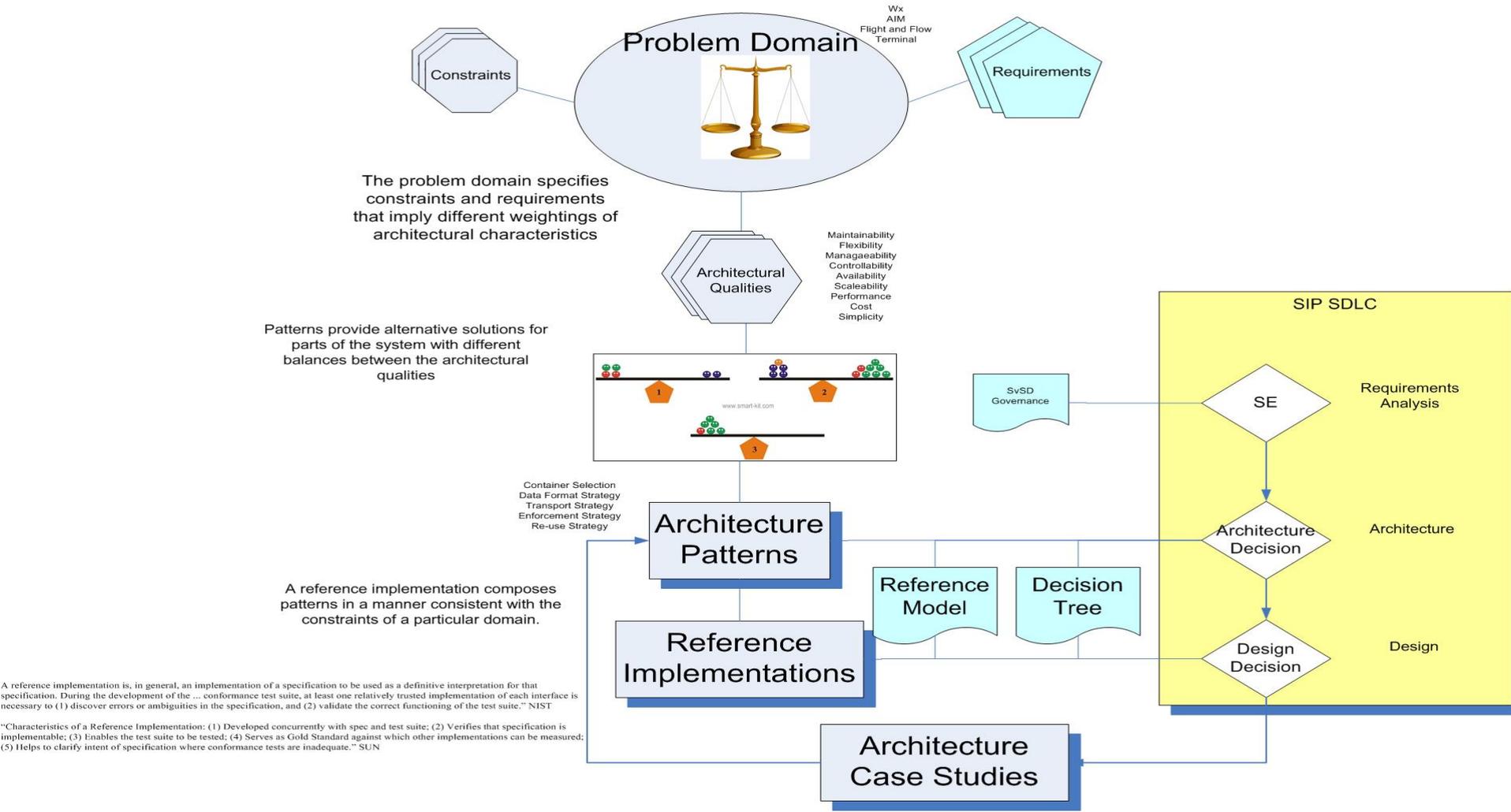


Resource Kit (Cont.)

– Architecture Guidance

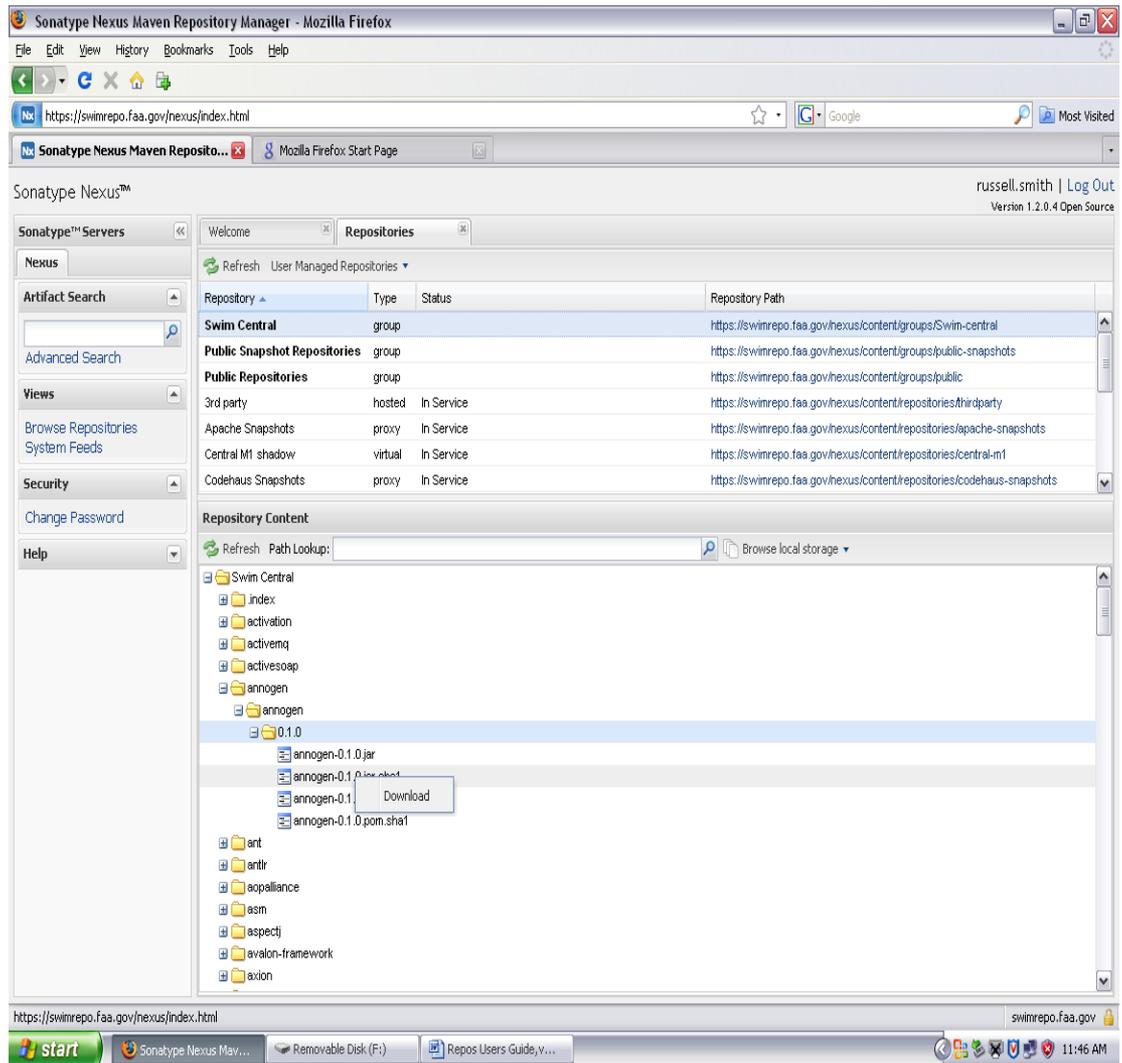
- Decision Tree for identifying which Service Container components and architecture are required to achieve particular operational needs
 - Architecture Principles: Framework Pattern, Modular and Extensible Components, Decoupling Deployment and Component Models
- Integration Principles
 - Architecture Patterns: Rest for SOA, Endpoint Management, Service Orchestration and Composition, Composite Message Pattern
 - Service Implementation: Legacy Services, Integrating non-SWIM Web Services, Binding Strategy, non-XML Payloads.

Architecture Guidance



SWIM COTS Products Repository

- The SWIM Laboratory has implemented a repository of the software products that the SWIM Program has purchased for use by implementers of SWIM services
- Goal - to manage and validate versions of the software products with their dependencies for provision to the implementers of SWIM services.
- Note: This is not the SWIM Registry/Repository



Collaborations

- **Architecture Working Group (AWG)**
 - The SWIM Architecture Working Group (AWG) is a collaborative vehicle that exists to identify, prioritize, coordinate, and communicate technical architecture activities that are shared between SIPs and the SWIM Implementation team.
 - Held monthly on 3rd Wednesday
- **Commercial Off The Shelf Working Group (COTSWG)**
 - An advisory group of FAA and contractor professionals to enhance the lifecycle support of SWIM
 - reviews status of and plans the SWIM COTS and Open Source product management according to the SWIM Commercial Product Management Plan and the needs of the SWIM Implementing Programs.
 - Artifacts: SWIM COTS Products Status Report, Issues list, Feature Demand List, and SWIM Product Roadmaps for vendor, SWIM & SIPs
 - Held monthly on 4th Wednesday

WJHTC FY09 Accomplishments

- **Stand-up SWIM Wiki on-line – completed (9/08)**
- **SWIM Architecture Guidance – (11/08)**
 - <https://swimwiki.tc.faa.gov/display/SWIM/Architecture+Guidance>
- **SWIM Architecture Decision Tree – (11/08)**
 - <https://swimwiki.tc.faa.gov/display/SWIM/Architectural+Decision+Tree>
- **Implementation of SWIM Service Registry v1 – (1/09)**
- **SWIM Commercial Products Management Plan (CPMP) – (2/09)**
- **Stand-up SWIM COTS Products Repository on-line – (2/09)**
- **Form Architecture WG & COTS WG (2/09)**
- **XML Gateway Qualified Vendor List – (2/09)**
- **Fuse Development Guides – all on SWIM Wiki at:**
 - <https://swimwiki.tc.faa.gov/display/SWIM/Developer+Resources>
 - Quick Reference Guide for Maven – (10/08)
 - Development Guide with Eclipse – (12/08)
 - SWIM WS-Interoperability Development Guide for Testing Tools – (3/09)
 - WS-Security with Fuse Services Framework Development Guide (5/09)

Future Plans

- **Registry, Version 1.1 w/SWIM taxonomies**
- **Registry/Repository, Version 2**
- **Additional Compatibility Studies**
 - Applications Servers w/FUSE
- **Assist SIPs with use of SOA test tools**
- **Redo of QVL for XML Gateway (annually)**
- **Maintain:**
 - CPMP & COTS Product Repository with input from SWIM COTSWG
 - SWIM Service Registry V1.1

