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# ***SWIM Alliance: Integrated Laboratories, Comprehensive Capabilities & The Possibilities***

Presented to: Demonstration and Prototyping  
Information Exchange Briefing

By: SWIM Alliance Partners

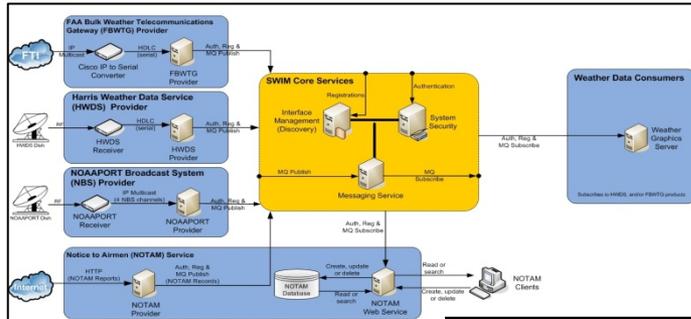
Date: November 04, 2009



# SWIM Alliance Integrated Labs: Applications – Functional View



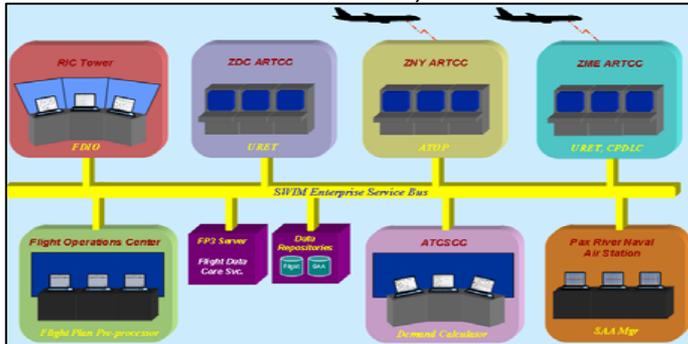
Harris – Melbourne, FL



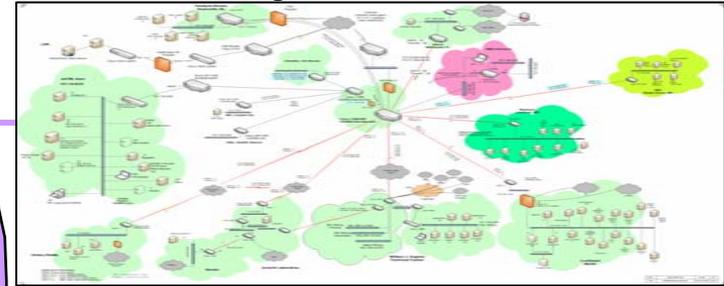
FTI Dev NOCC



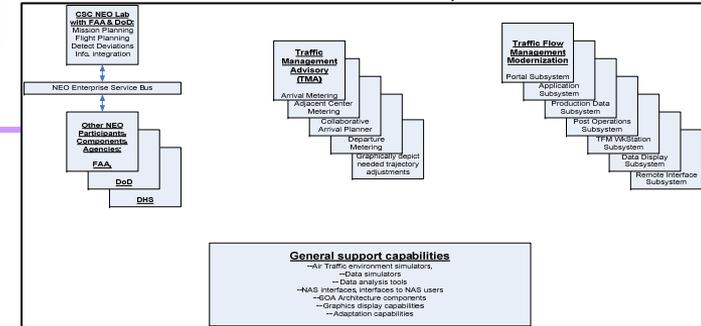
LM – Rockville, MD



Boeing – Herndon, VA



CSC – Rockville, MD



Alliance Network

Integrated Airport

Daytona Airport

SDP

- FTI SWIM Services
- Application Services

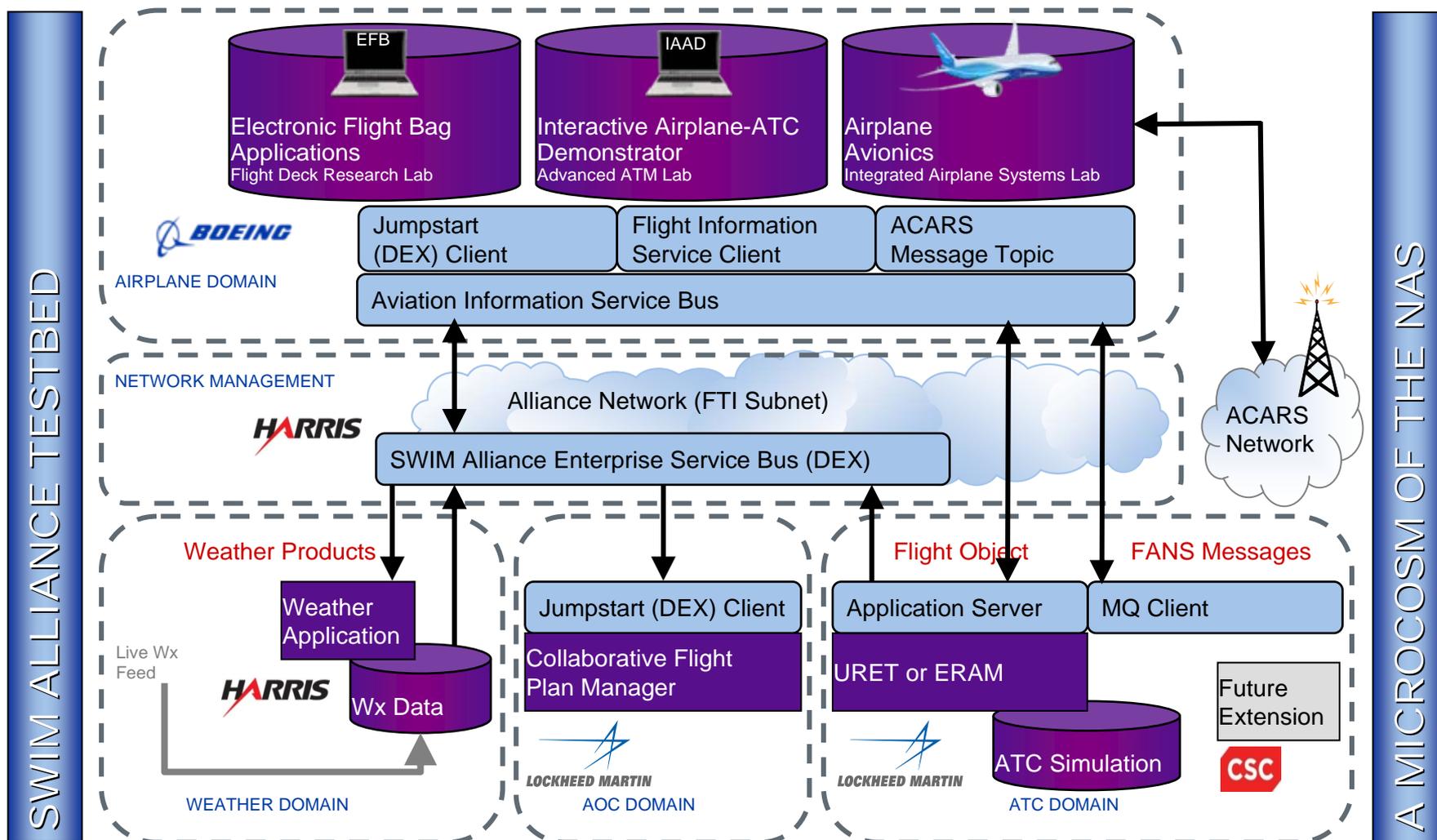
# *Integrated Alliance Labs Network - Status*

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- *Connectivity established between Harris, Boeing & Lockheed labs*
- *Net-centric Core Service Infrastructure installed & integrated utilizing FTI EDX image*
- *Functional integration between these facilities is complete*
  - *LM ERAM publishing FDO directly through ERAM FIS (Federated)*
    - *LM ERAM publishing FDO to the centralized defined topic tree in the DEX (Consolidated)*
  - *Boeing subscribing to FDO and METARS*
  - *Harris subscribing to FDO for graphical weather display*
  - *Harris publishing METARS*
  - *LM AOC subscribing to the METAR data*
  - *Boeing publishing and subscribing to CPDLC messages for use in airplane and flight deck simulations*
- *Demonstrated at ATCA 2009*

# SWIM Alliance Testbed ATCA Demonstration Message Flow



# *Integrated Alliance Labs Network - Status*

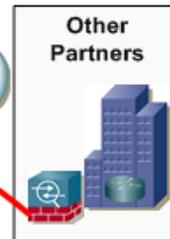
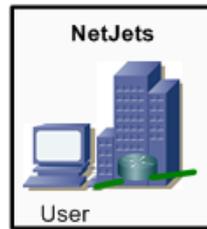
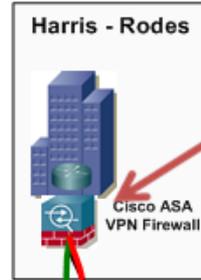
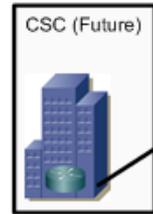
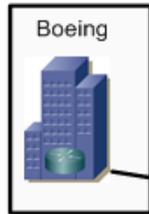
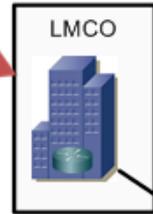
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- **Collaboration with NetJets - working prototype for Collaborative Flight Planning and Monitoring (CFPM)**
  - *LM in process of recruiting 1 or 2 'traditional' airline partners to participate in this activity*
  - *LM completed identified changes to CFPM*
  - *Established communications link between NetJets and SWIM Alliance Network*
  - *Installed CFPM client at NetJets*
  - *NetJets accessing SWIM Alliance network via Harris DEX*
  - *Conduct prototype testing to verify value to users and identify necessary changes*
    - *In Progress*
  - *Demonstrated at ATCA 2009*
    - *Live data submittal across internet to SWIM Alliance Network*
    - *Virtually immediate response back to ATCA based client*

## FTI SWIM ALLIANCE LAB NETWORK

4) CFPM Server in Rockville evaluates submitted Flight Plans



— Remote Access VPN  
— Site-to-Site VPN

3) Secure Virtual Private Network (VPN) established into the SWIM Alliance Lab Network – an FTI-like communication network

2) CFPM client uses Internet Connection to the SWIM Alliance Router in Melbourne

1) CFPM client Internet Connection submits trial Flight Plans

— Remote Access VPN  
— Site-to-Site VPN



# *Integrated Alliance Labs Network*

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- **Benefits:**

- Alliance combined NAS expertise spans key NAS capabilities
- Integrated labs leverage Alliance combined capabilities
  - “Microcosm of the NAS” offers end-to-end flight management
    - Flight Deck, Airport, Terminal & En-route systems exchanging data with Net-centric Core Services

- **Value Proposition:**

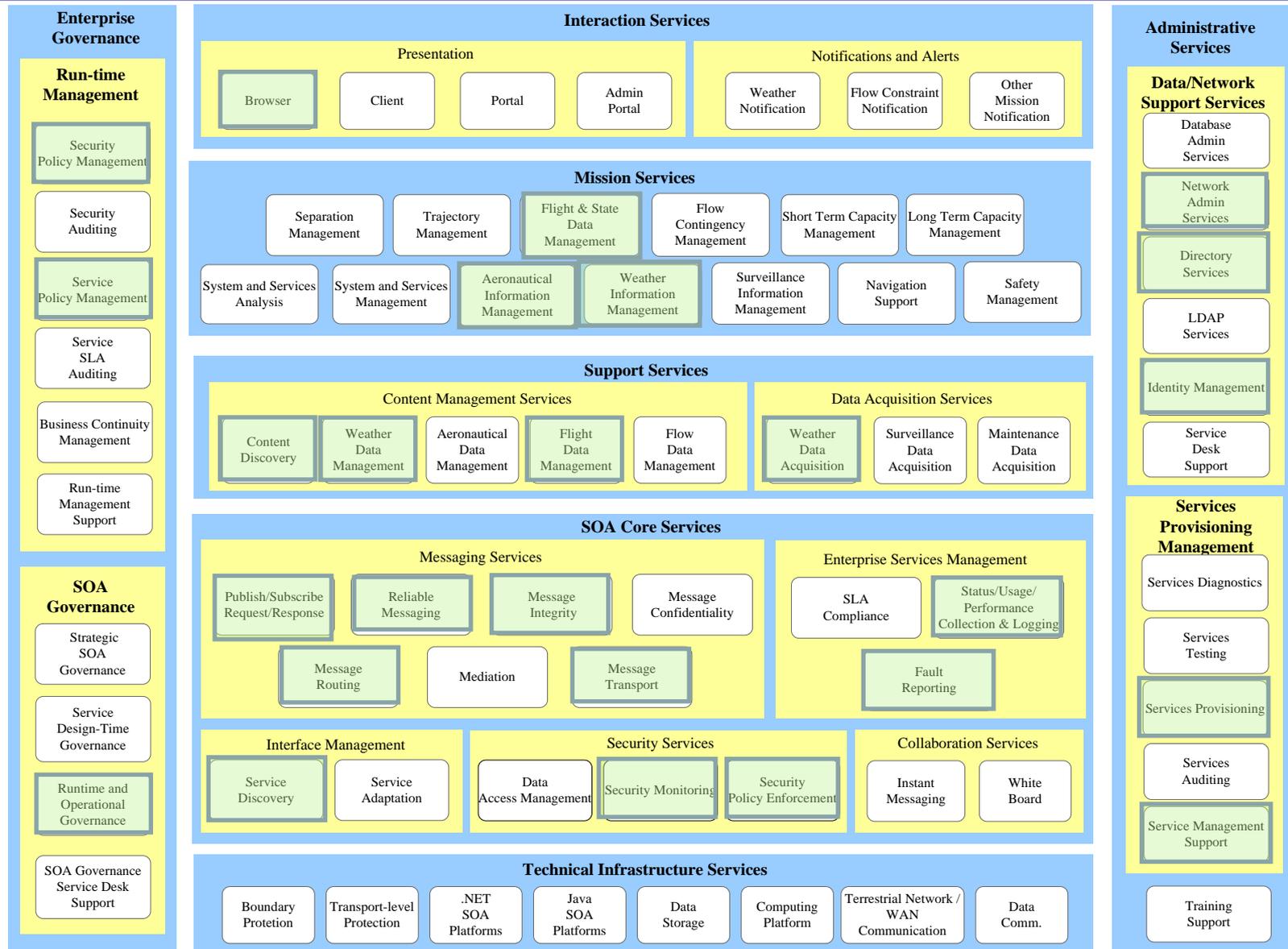
- Combined competencies bring together largest NAS systems in an integrated environment
  - Breadth of the environment lends itself for prototyping use cases and demonstrations
- Ability to demonstrate provisioning of net-centric core services
  - Enables prototyping for both publish/subscribe & web services capabilities for enterprise and localized core services
  - Applications avoid cost/complexity of core services development & concentrate on the service they provide or consume

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*End Presentation*

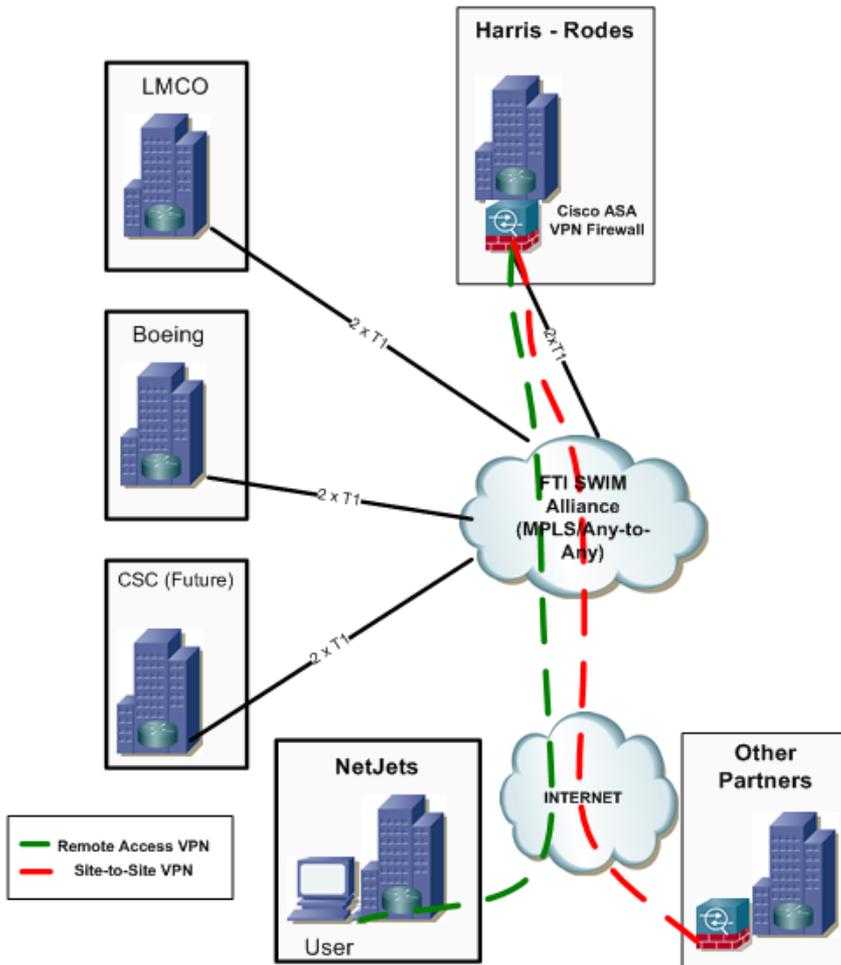


# NextGen NAS SV-4 Framework



# SWIM Alliance – NetJets Collaboration

## FTI SWIM ALLIANCE LAB NETWORK



- Use Case: AOC Dispatcher is able to trial flight plans before filing, gain insight into the status of the NAS thru SWIM services. TFMS obtains early intent information from operators. AOC Dispatcher receives dynamic updates affecting route of flight both pre-departure and post-departure.
- Value Proposition to Stakeholders:
  - Operators
    - More detailed understanding of how the NAS will process flight plan requests resulting in flight plan submittal which optimizes for their business rules
  - FAA
    - TFMS gains early insight into traffic demands resulting in better strategic planning and more efficient NAS operations