



# ***SWIM – Industry Potential***

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# ***SWIM Implementation in the NAS***

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- ***Adding System Wide Information Management capabilities to the NAS enables significant benefits for ATC, TFM, and Airspace Users***
- ***SWIM can be implemented within existing NAS systems, accelerating the implementation and providing earlier benefits***
- ***The NextGen Enterprise Architecture is dependent on the SWIM architecture***
- ***Its all about the information***
  - *Stakeholders can identify needed information that they are not getting today*
  - *Once information is made available, new decision support tools can be developed to enable even more user benefits*



# Key Benefits of SWIM

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- **Ease of introduction of new capabilities into the NAS**
  - Shortened development and deployment times
  - Reduces the cost of implementing new functions
    - Loose coupling of complex interfaces
    - Reduced maintenance costs
  - Future NextGen capabilities are dependent on SWIM
- **Provides access to information not normally available to stakeholders**
  - Anticipated wide spectrum of benefits
  - Enables increased productivity for stakeholders
  - Creates opportunities for innovative engineering, promoting new decision support tools

# Technology is not the Issue

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- **Commercial products in existence**
  - *SOA is a mature concept, embraced by industry*
  - *Widely available developer toolkits*
- **Governance, security and data normalization are the keys to success**
  - *Governance*
    - *New policies must be created*
    - *Coordination across the FAA*
    - *Must address both design time and run time policies*
  - *Security*
    - *Should be defined in the beginning*
    - *Incorporated widely*
    - *Should enable SWIM, not be an obstacle*
  - *Data Normalization*
    - *Can not underestimate the impact of data normalization*
    - *Central to the success of information management*
    - *Area most likely to be overlooked in the engineering of the system*

# Leveraging existing NAS Systems

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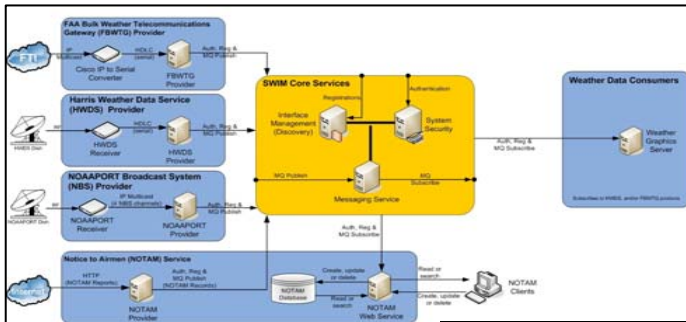


- **Logical pathway for introduction of new connectivity**
  - Existing processes, existing infrastructure evolves to NextGen
- **Simpler plan for transition to Net Centric Architecture**
  - Not starting from beginning
- **Ensures current mission critical requirements are maintained**
  - Safety critical functions are not affected
- **Leverages industry and government NAS expertise**
  - Current industry and government SMEs remain in leadership positions
  - Add SOA processes/techniques to their skill set
- **Can deliver benefits sooner**
  - Industry R&D efforts can be leveraged

# Example of Industry R&D



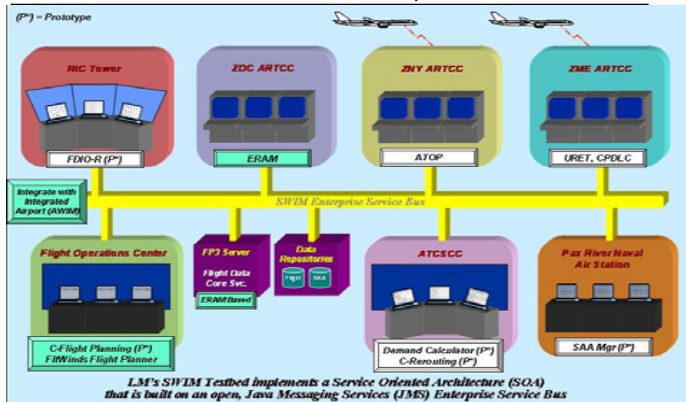
Harris – Melbourne, FL



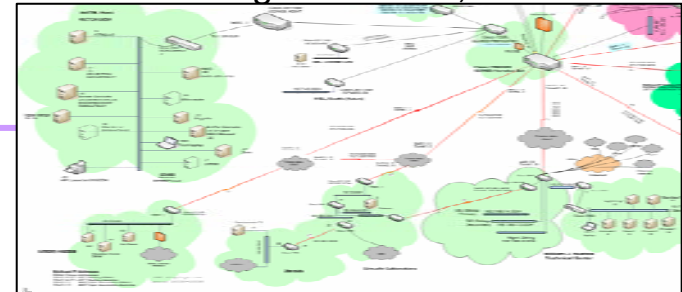
FTI Dev NOCC



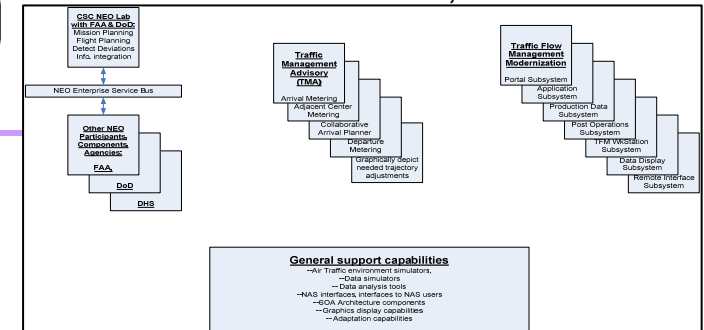
LM – Rockville, MD



Boeing – Herndon, VA



CSC – Rockville, MD



Alliance Network

■ FTI SWIM Services  
■ Application Services

# Conclusions

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- **All stakeholders benefit from the implementation of SWIM**
  - Improved sharing of NAS data and information
  - New decision support tools
  - Reduced Implementation time for new functionality results in increased benefits earlier
- **Implementation of SWIM within the current NAS systems leverages both FAA and industry investments**
  - Intellectual capital as well as systems
  - Evolution vs revolution
  - Possible to provide real benefits sooner rather than later



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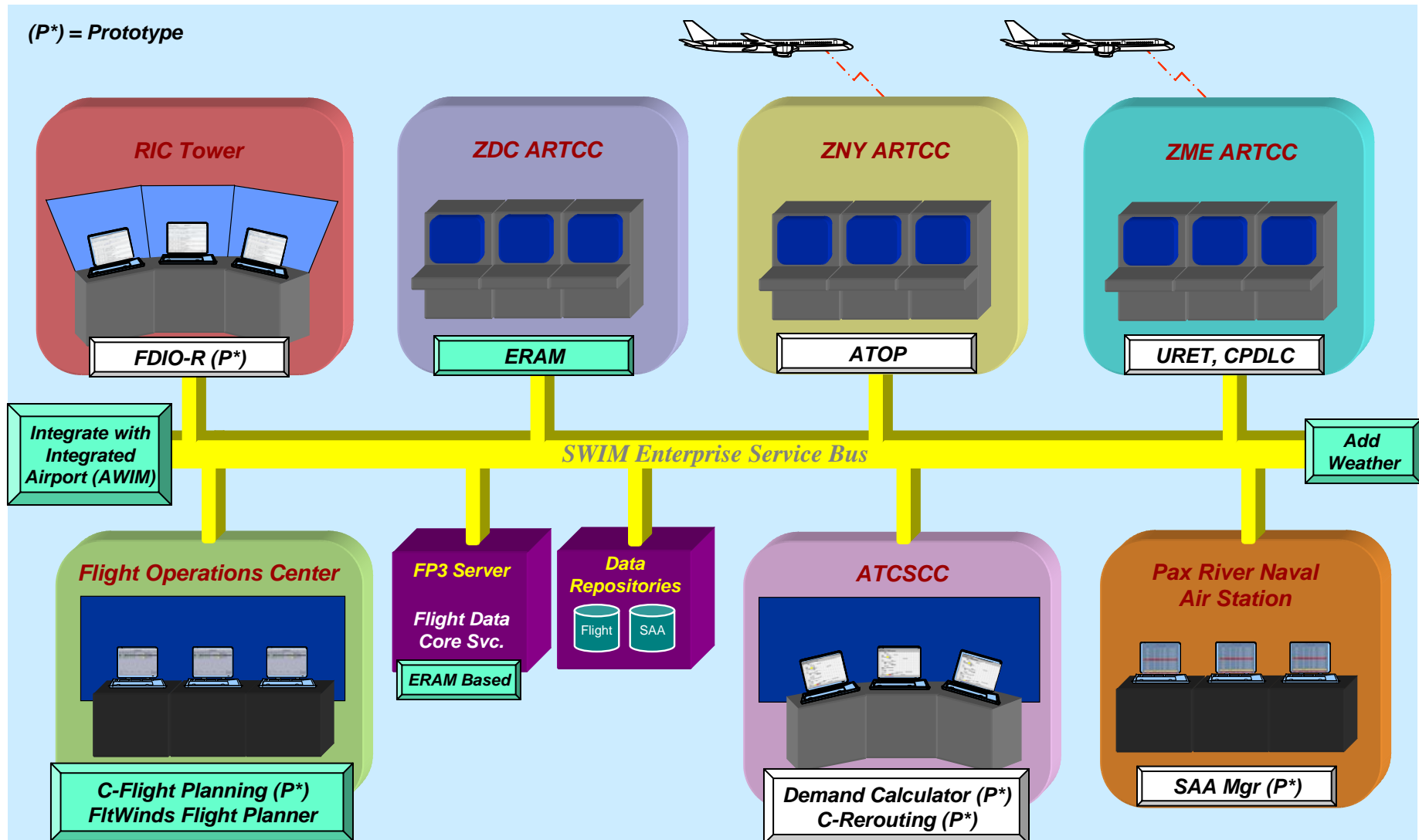
***End Presentation***

***Questions?***

# LM Laboratories & Capabilities

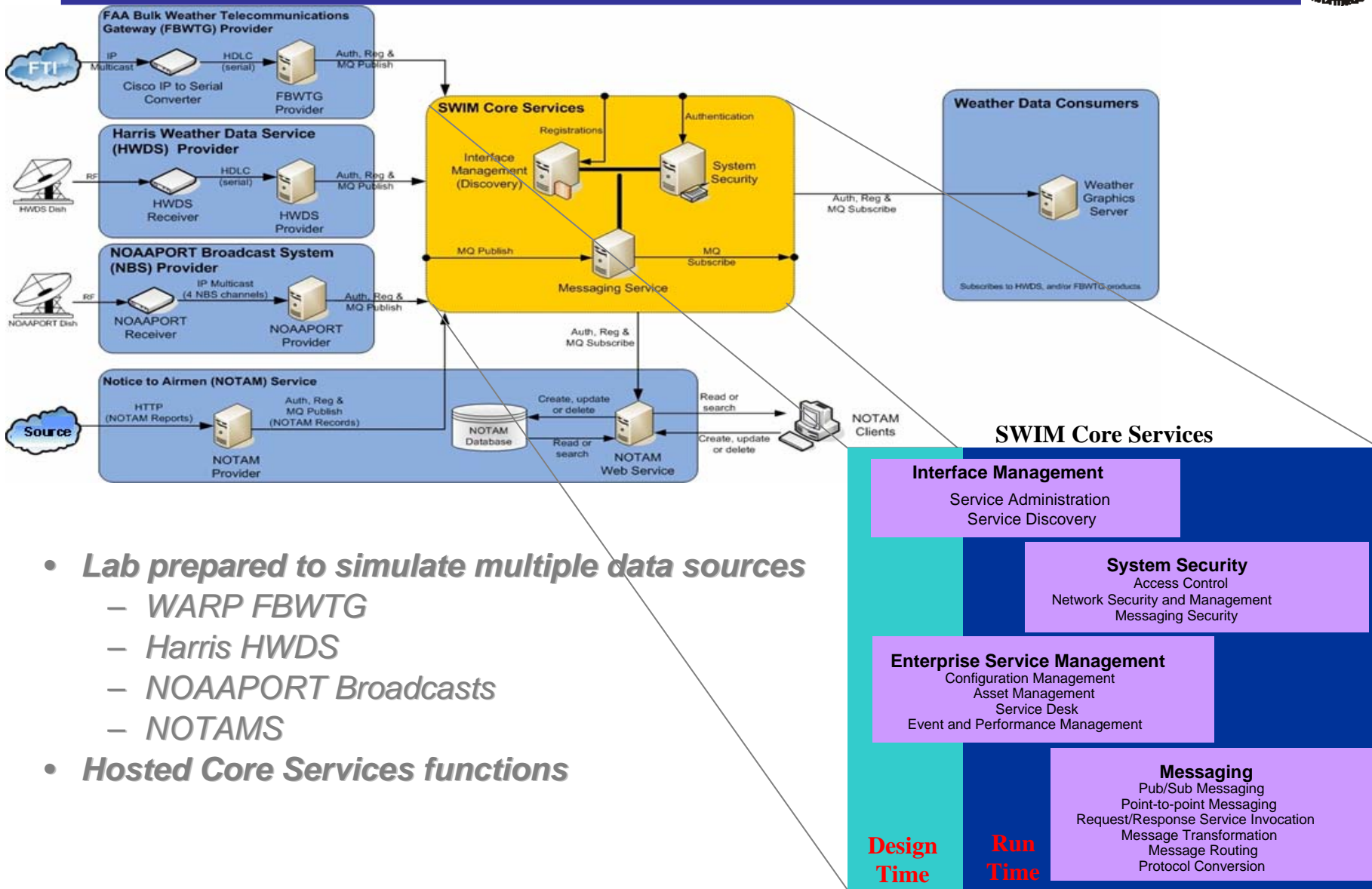


(P\*) = Prototype



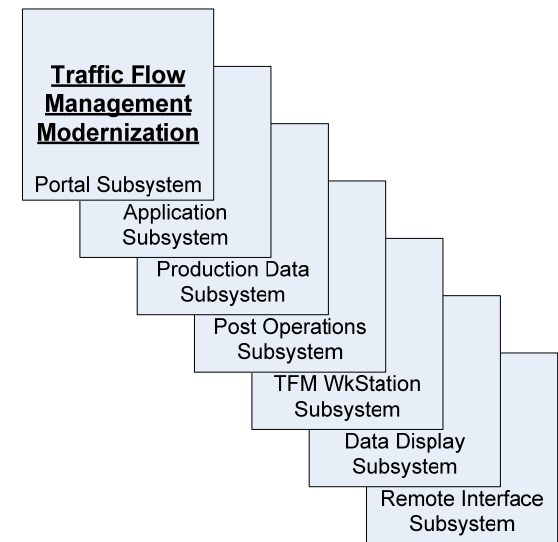
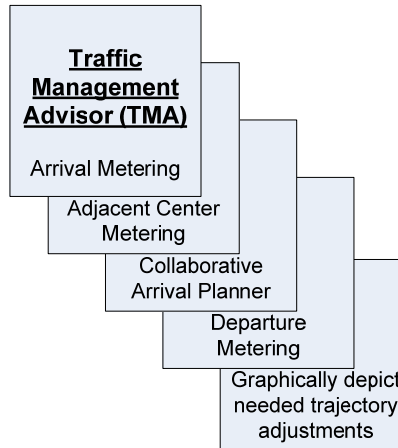
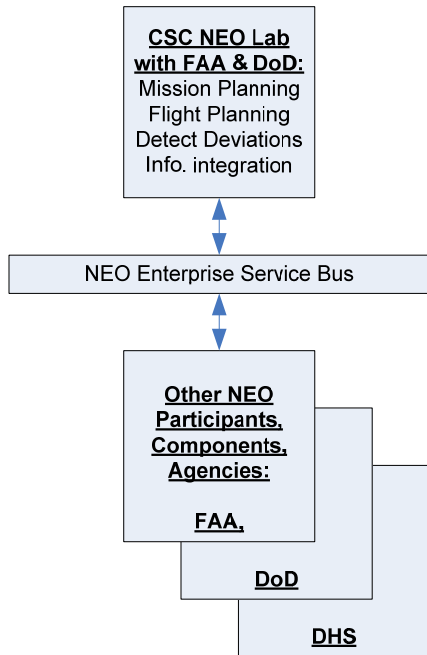
*LM's SWIM Testbed implements a Service Oriented Architecture (SOA) that is built on an open, Java Messaging Services (JMS) Enterprise Service Bus*

# Harris Laboratories & Capabilities



- **Lab prepared to simulate multiple data sources**
  - WARP FBWTG
  - Harris HWDS
  - NOAAPORT Broadcasts
  - NOTAMS
- **Hosted Core Services functions**

# CSC Laboratories & Capabilities



- General support capabilities**
- Air Traffic environment simulators,
    - Data simulators
    - Data analysis tools
  - NAS interfaces, interfaces to NAS users
    - SOA Architecture components
    - Graphics display capabilities
    - Adaptation capabilities

# Boeing Laboratories & Capabilities

