

# System Wide Information Management

## The Road to Acquisition

### FAA SWIM Acquisition Planning

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# Agenda

- **Introduce the FAA's new approach to SWIM acquisition**
  - Manageable technical and programmatic risk
  - Capital spending aligned with return on investment
- **What is it?**
- **Why are we doing it?**
- **How are we doing it?**
- **What's next?**
- **The Acquisition Paradox**

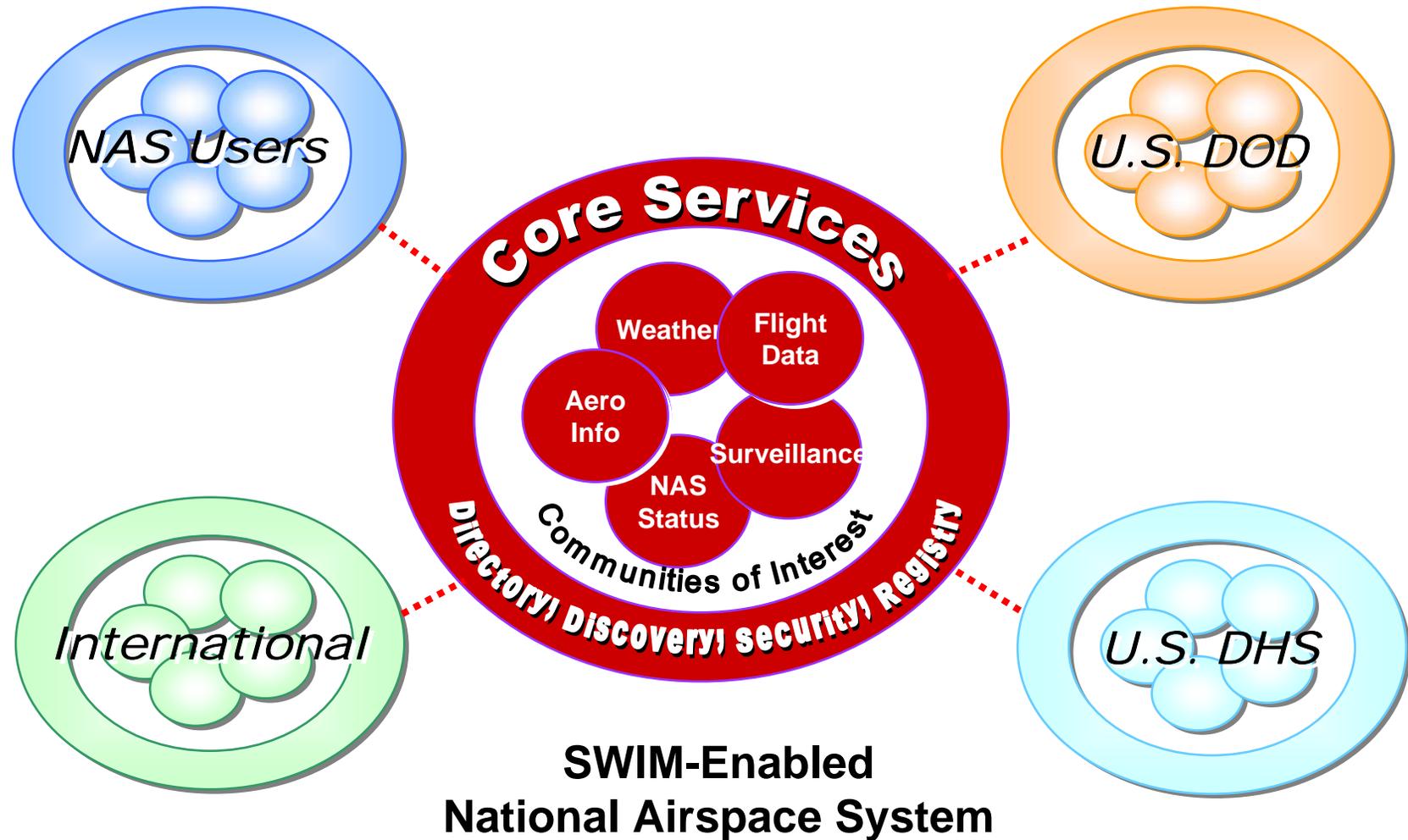


# What is System Wide Information Management?

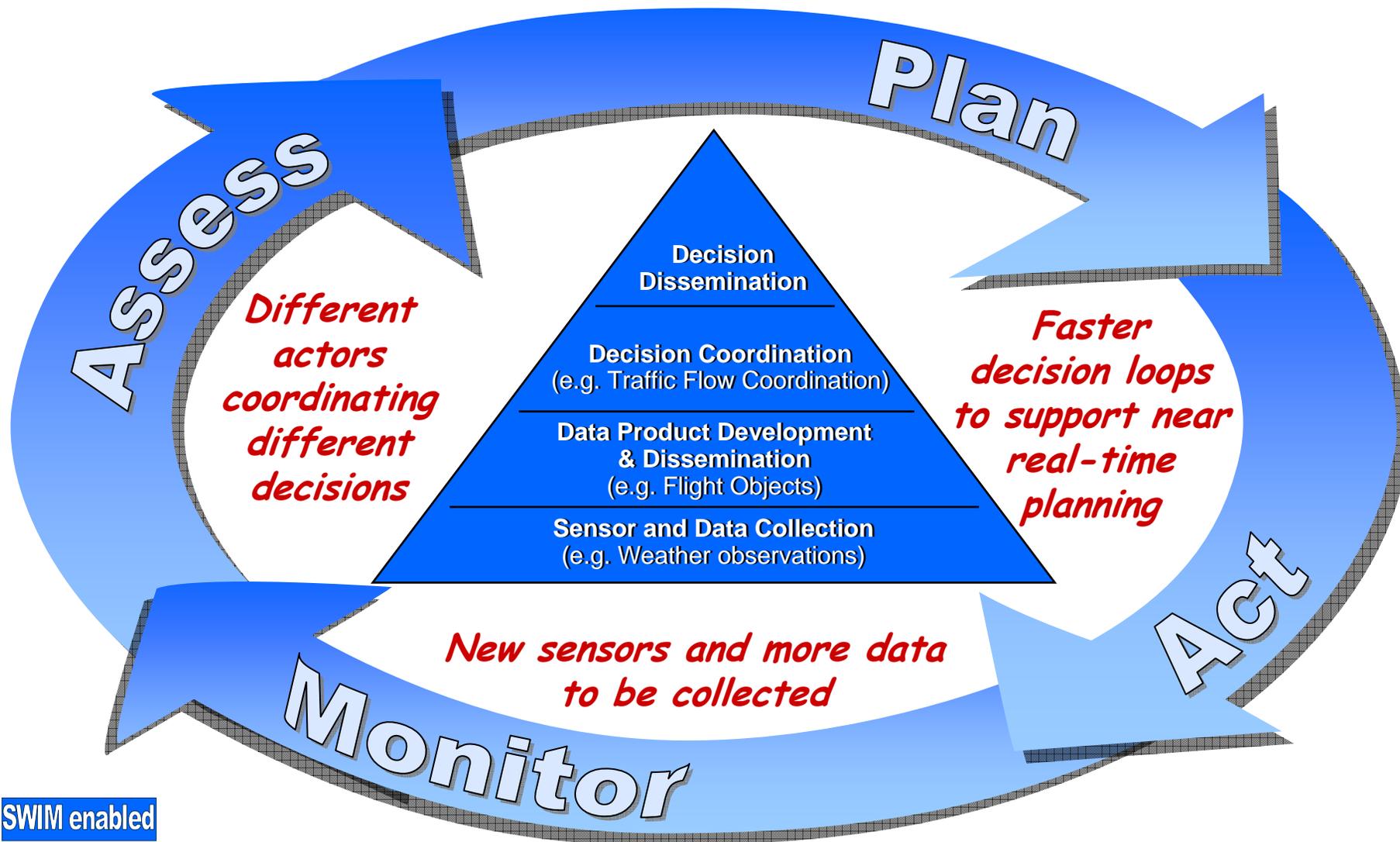
- **NAS-wide information grid**
  - Integrates NAS legacy systems and networks with NAS-wide management functions
  - Integrates NAS grid with external agency grids
- **Management of community information exchange**
  - Surveillance, weather, flight data, aeronautical and NAS status information
  - Defines data for all system users
  - Creates roadmap telling them how to find it
- **Potential Core Services**
  - Directory/Registry Service
  - Interface Service
  - Brokering Service
  - Infrastructure Management Service
  - Enterprise Security Service



# SWIM is one member of a broader, government-industry network-enabled community



# NAS to NGATS – A New Decision Framework



SWIM enabled



# The Performance Gap

- **Today's NAS comprises a myriad of systems designed for specific purposes**
  - When these systems require data from other systems, they use dedicated point-to-point interfaces
  - Each interface is defined by custom interface control documents and interface requirements documents
  - Each interface is designed, developed, and maintained separately
    - **Technical complexity drives technical risk**
    - **Large number of interfaces drive high maintenance and configuration management costs**
    - **Point-to-point paradigm drives new development, test, and implementation costs and risks every time a new interface is required**
- **The Next Generation Air Transportation System requires a more agile airspace system that can meet the informational needs of more and new system users, owners, and customers**



# Ag-ile (adj.) - marked by ready ability to move with quick easy grace

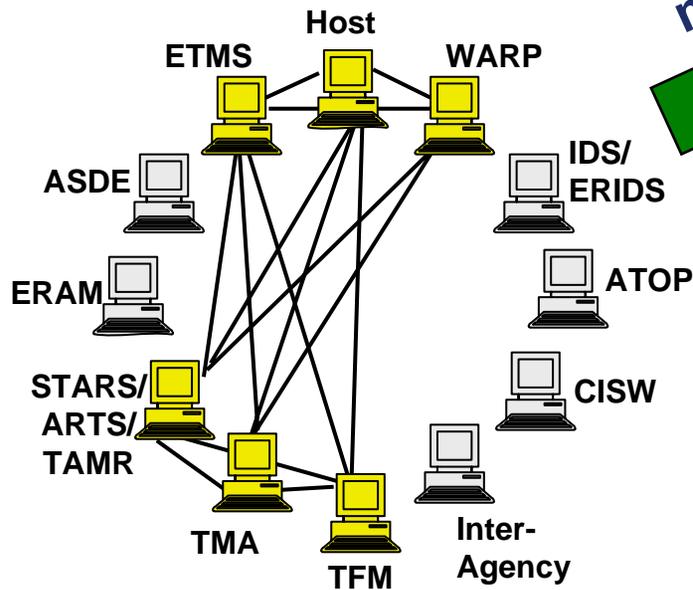
- **Some primary drivers that determine how readily a system can move to adapt to changing conditions are:**
  - Accommodate new users by telling them how to connect to existing, open interfaces instead of designing, developing, testing, implementing new ones from scratch
  - Implement network technology and data management using commercial equipment and current industry standards, reducing developmental costs and increasing the ability to evolve as technology matures
  - Re-use fewer open, common interfaces and data management processes to reduce maintenance and upgrade costs
- **Today's point-to-point architecture does not support these tenets**
- **The SWIM concept is predicated on them**



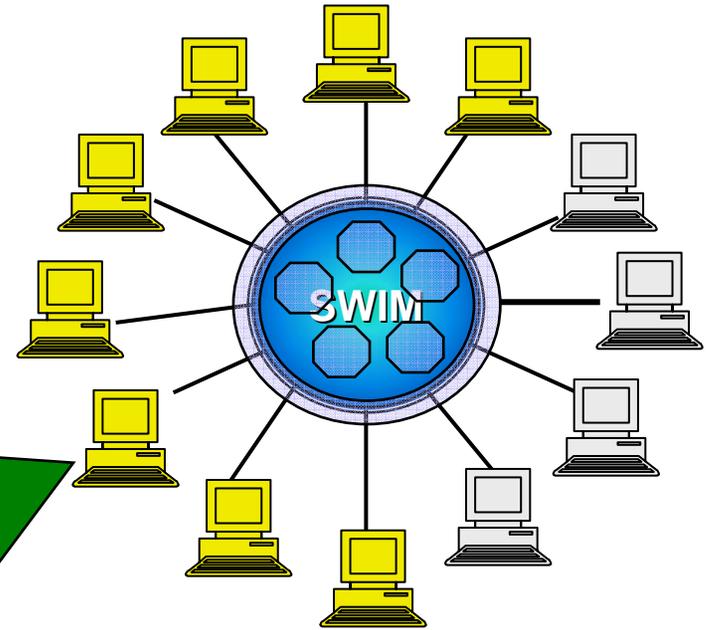
# SWIM...

## ...The M is for Management

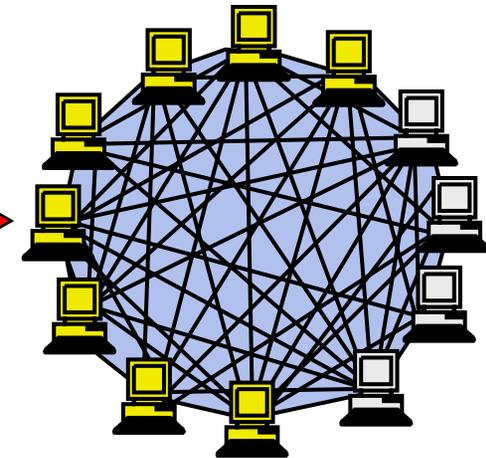
### Today's Paradigm



Enterprise management



Business as usual



# Acquisition Planning

- **June 2006**
  - Select technical and programmatic approach
    - **Down select overall approach from three alternatives**
    - **This approach will then be applied to a Community of Interest-based segmentation process**
  - Approve the use of FY2007 resources to continue demonstration/ validation activities and define a viable SWIM Segment 1 acquisition within manageable cost, schedule, and technical risk thresholds
    - **Engineering, requirements, design, transition, and business case activities**
    - **Early acquisition “jump start” activities**
  - Identify risk areas
- **Spring 2007**
  - Final acquisition decision for SWIM Segment 1



# Community of Interest Engineering

- **Community of interest = core community of processing systems plus the stakeholders that require access to the derived product information**
- **Based on information needs, not systems**
  - Flight and Flow
  - Weather
  - Surveillance
  - Aeronautical Information
  - NAS Management
- **Community of Interest Near Term Activities**
  - Begin examining decision and data requirements and concepts of use
  - Assess ongoing activities that can be leveraged on a broader scale or serve as a roadmap for other communities
  - Identify Segment 1 capability candidates



# Near Term Activities

- **Continue demonstration/validation activities**
  - Global Air Traffic Interoperability (GATI)
  - Network Enabled Operations (NEO)
  - Weather Information Sharing
- **Establish Community of Interest structure and execute project and acquisition management within each**
- **Acquisition “Jump Start”**
  - Begin transition of legacy interfaces
    - **Regardless of design, SWIM assumes the use of IP connection to FTI**
    - **17 major FAA programs still using x.25 services**
    - **SWIM will support transition planning and execution**
  - Initiate development of an enterprise-wide security gateway architecture
    - **Leverage/accelerate existing program office and FTI plans**
    - **Coordinate closely with CIO to stay in synch with NAS security policy and implementation**



# The Demonstration/Acquisition Paradox

- **The value of demonstration projects comes from their ability evaluate, validate, and generate interest in new technologies and operational concepts**
- **Everything that is demonstrable, however is not necessarily “acquisitionable”**
  - Technical complexity
  - Transition risk
  - Operational acceptance
  - Maintenance
- **Paradox – Acquisition programs need the advocates and sponsors generated by demonstration activities to exist, but can be undermined by that same energy if it is used to fast-track or drive short cuts in acquisition management process**



# Abraham Lincoln Once Said...

*“If I had eight hours to cut down a cherry tree, I would spend six hours sharpening my axe.”*

**Communities of Interest**  
**Concepts of Use**  
**Program Segmentation**  
**Integrated Schedule**



# Summary

- **SWIM is not a massive single acquisition with a single prime contractor and a “switchover” type transition. It will be broken into useable segments, the first of which will be base lined in mid FY07**
- **SWIM NAS capabilities must be developed as such from the ground up based in part upon what we learn from the demonstration projects. Demonstration systems can rarely (if ever) simply be “hardened” and deployed**
- **The success of SWIM is dependent upon diligent acquisition management that begins with well-defined requirements, is managed on risk-adjusted cost and schedule baselines, and is implemented in manageable pieces to meet the evolutionary needs of NGATS**

