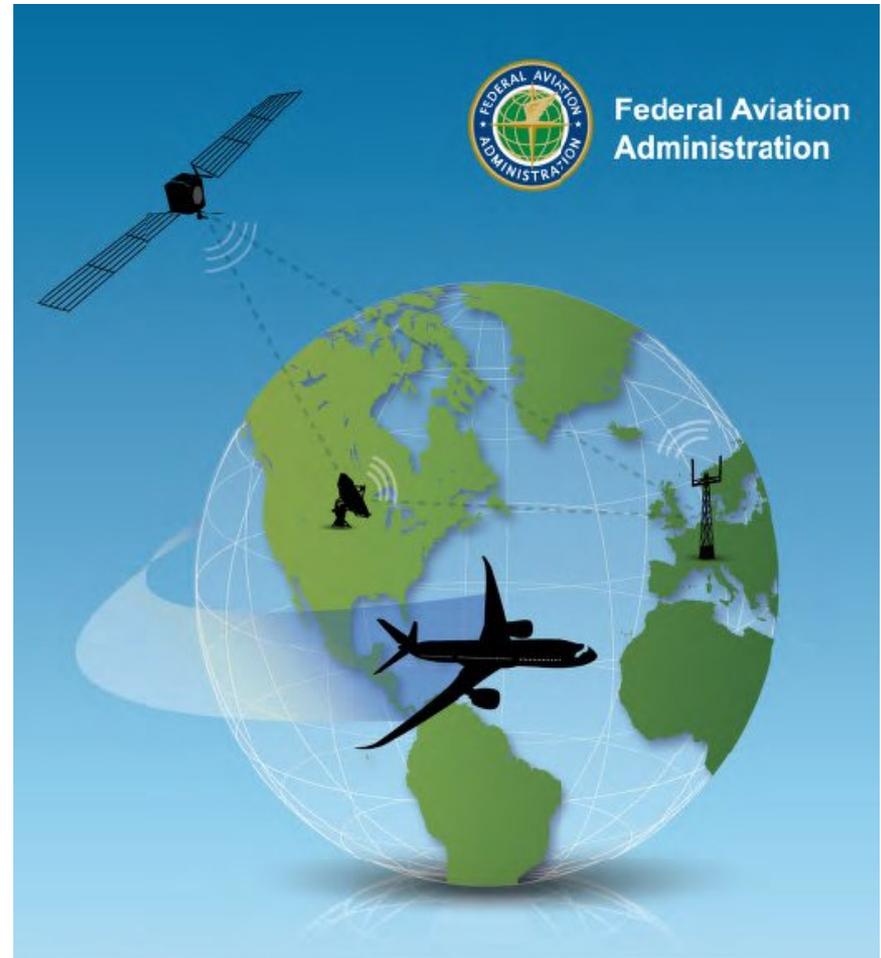


# NextGen: Changes to Strengthen Validation and Verification

Jay Merkle  
Director, Enterprise System  
Integration

October, 2011



NextGEN

# Overview

- Setting the Context: Foundations for Success
- What does this mean for Validation and Verification for NextGen?

# Setting the Context: Foundations for Success



# Key Areas for Improvement

*The Foundation for Success analysis effort identified the following four key areas of improvement:*

## Governance

- The FAA would benefit from **tighter alignment and closer integration of NextGen elements**
  - Program management will benefit from elevated visibility and consistency
- NextGen needs the ability and authority to **bridge the strategic requirements with its tactical implementation**

## Processes

- The current set of processes implemented to support NextGen **do not adequately manage its complexity** and scope
- These processes, as implemented, tend to **overlook rather than overcome organizational boundaries**

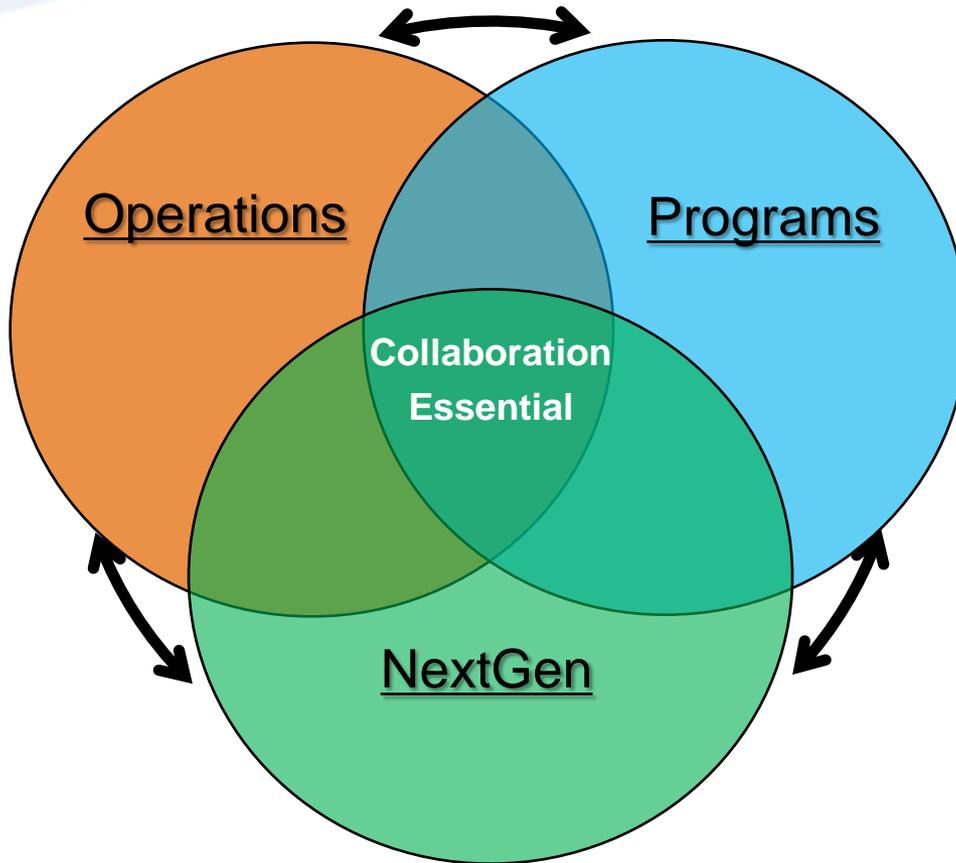
## Capabilities

- While pockets of best practices exist, as a whole the FAA needs to bolster key **individual and organizational capabilities** necessary to fully support and develop NextGen
- These capabilities span multiple areas, including **program management, systems integration, software engineering** and **communication**

## Culture

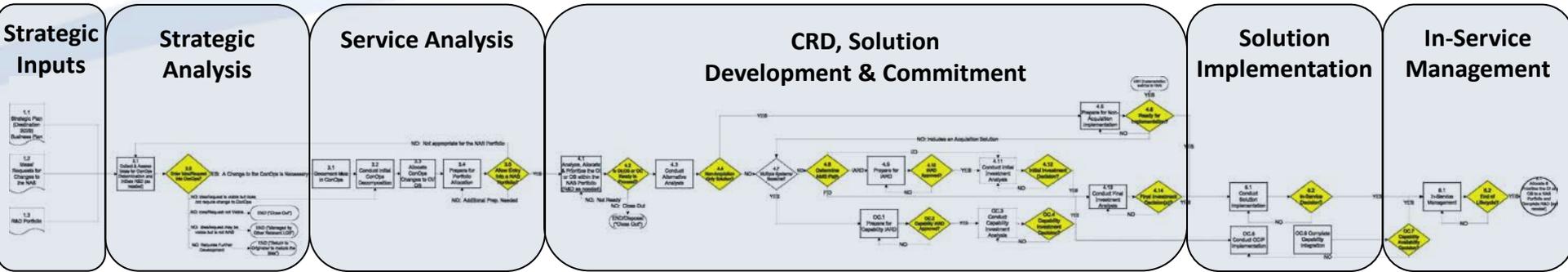
- A number of **cultural barriers** need to be addressed within NextGen-related activities to **mitigate their negative effect** on the program
- These include **the lack of information sharing, discomfort with managing uncertainty, and the struggle to bridge tactical and strategic viewpoints**

# A New Paradigm for NAS-wide Management: Continuous Interdisciplinary Involvement



- “Hand-offs” are eliminated in favor of **collaboration**. NextGen, LoBs, Staff Offices, Programs and Operations engage throughout the capability lifecycle.
- A single FAA-wide process for changes to the NAS that **works with all contributors** to the NAS.
- This collaborative approach requires **shared accountability, responsibility and risk**. This is achieved through direct and obligatory engagement.
- The **collaborative** teams will be responsible for activities such as requirements mgmt, configuration mgmt, and assumption/constraint mgmt.

# Idea to In-Service Focus



Ideas -to- In-Service

Theory -to- Reality

Budget -to- Investment

ConOps -to- Operational Reqs -to- Functional Reqs -to- System Reqs



“One FAA Delivering NextGen!”

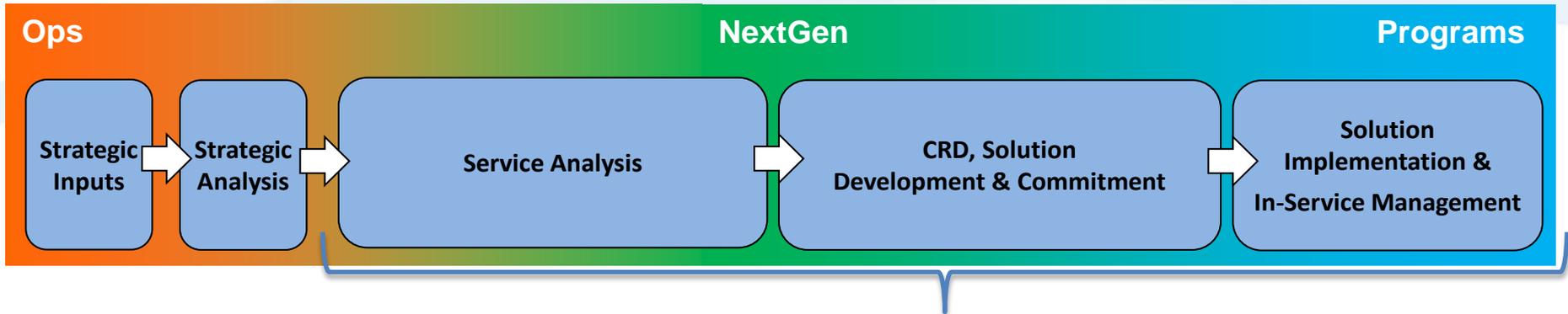


# The New NextGen Role: Steward of the Operational Capabilities

- Early and continuous involvement of all relevant operational and implementation organizations
- Harmonize NAS sustainment and NextGen
  - ✦ Operational Capabilities = service linked sustainment and NextGen investments
- Ensure focused effort on benefit realization as NAS evolves
- Consistent integration from concept to in-service management
- Organizational integration of research, concepts, operational requirements, and concept validation



# Eliminating Handoffs: Capture Team



## The **Capture Team** attributes:

- Cross organizational entity, including V&V personnel
- Membership determined by operational needs
- Maintains continuity and “corporate memory”
- Leadership evolves to meet the changing needs
- Responsible for program integration and collaboration across lines of business
- Ensures consistent operational and technical validation

The **Capture Team Lead** is assigned during “Service Analysis.” The team is retained as an organizational entity throughout the life of the Operational Capability.

# What does this mean for Validation and Verification for NextGen?

# Impact of Changes: End to End Understanding of Capabilities

- Organizational integration of research, concepts, operational requirements, and concept validation
  - ✦ Starting correctly and transferring the knowledge
- Process changes are and continue to emphasize early involvement of V&V personnel
  - ✦ Continuous engagement with operators and implementers
- Improved integration of NAS sustainment and NextGen provides:
  - ✦ Better scoping of fidelity and resources for V&V planning
    - What V&V infrastructure is needed and where
  - ✦ Functional cohesion of operation capabilities gives more realistic view of what is needed in the test environment to replicate the operation
  - ✦ Benefit realization: definition and measurement
- Revamping NAS requirements and processes to address the multisystem complexities of NextGen

**Thank You**

**Questions?**



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