

The Next Gen Architecture - Implications for Airports

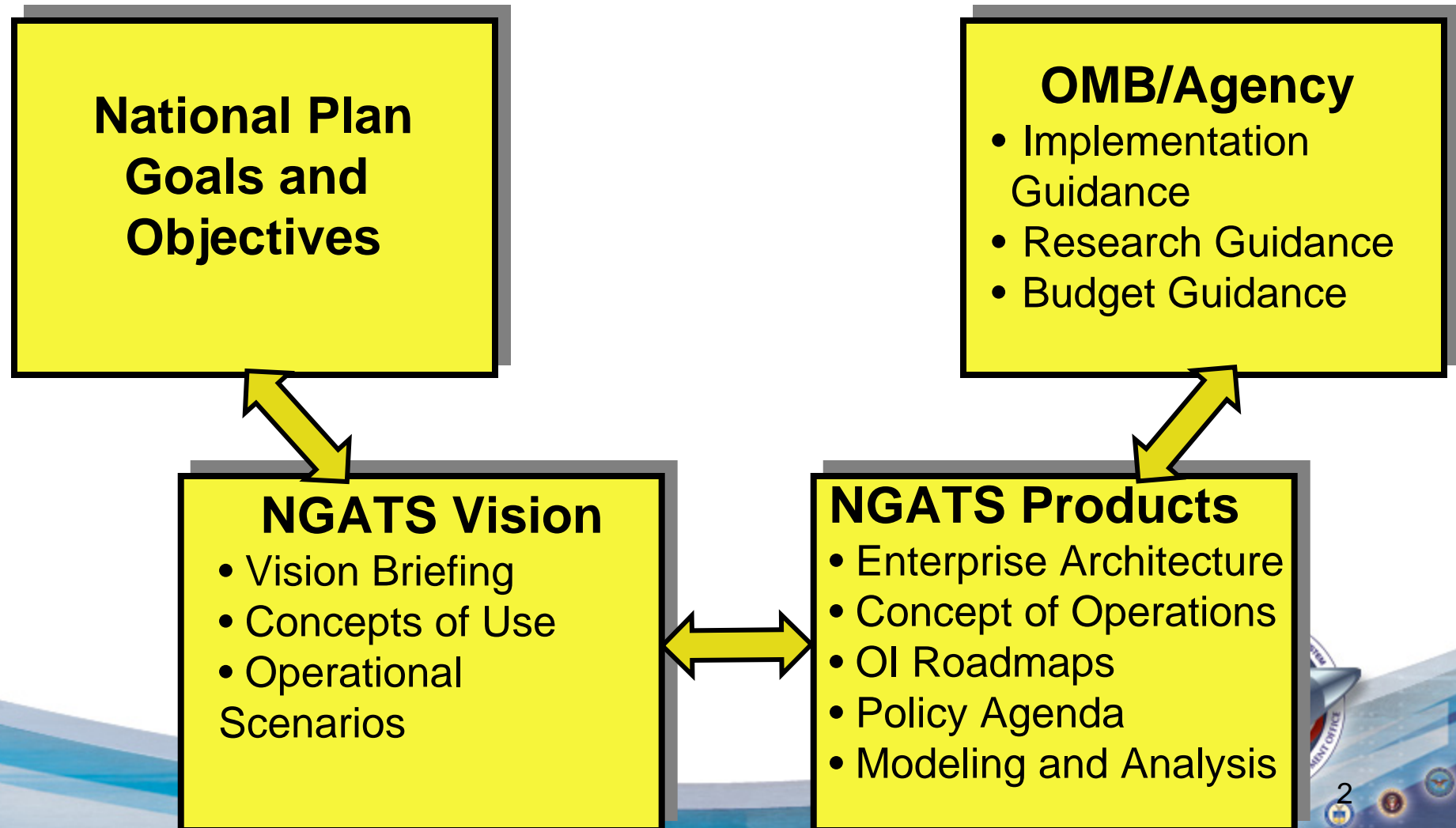
Dr. Edgar G. Waggoner
Director, Enterprise Architecture and
Engineering Division, JPDO
December 14, 2006



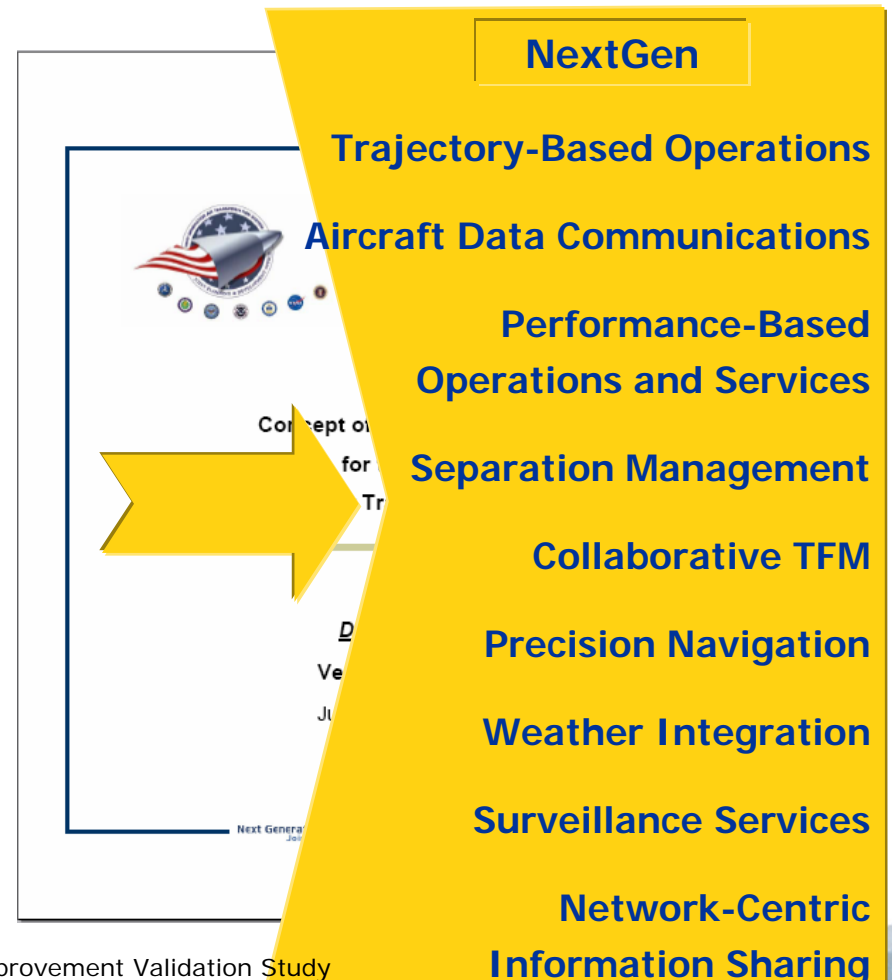
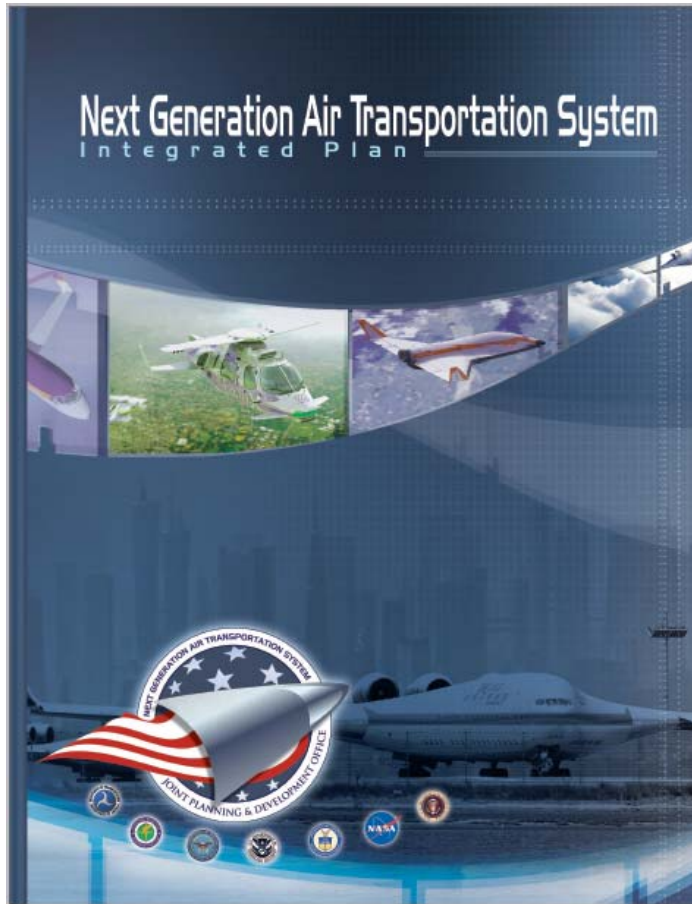
NextGen Development

Next Generation Air Transportation System
Joint Planning and Development Office

National Plan to Agency Guidance



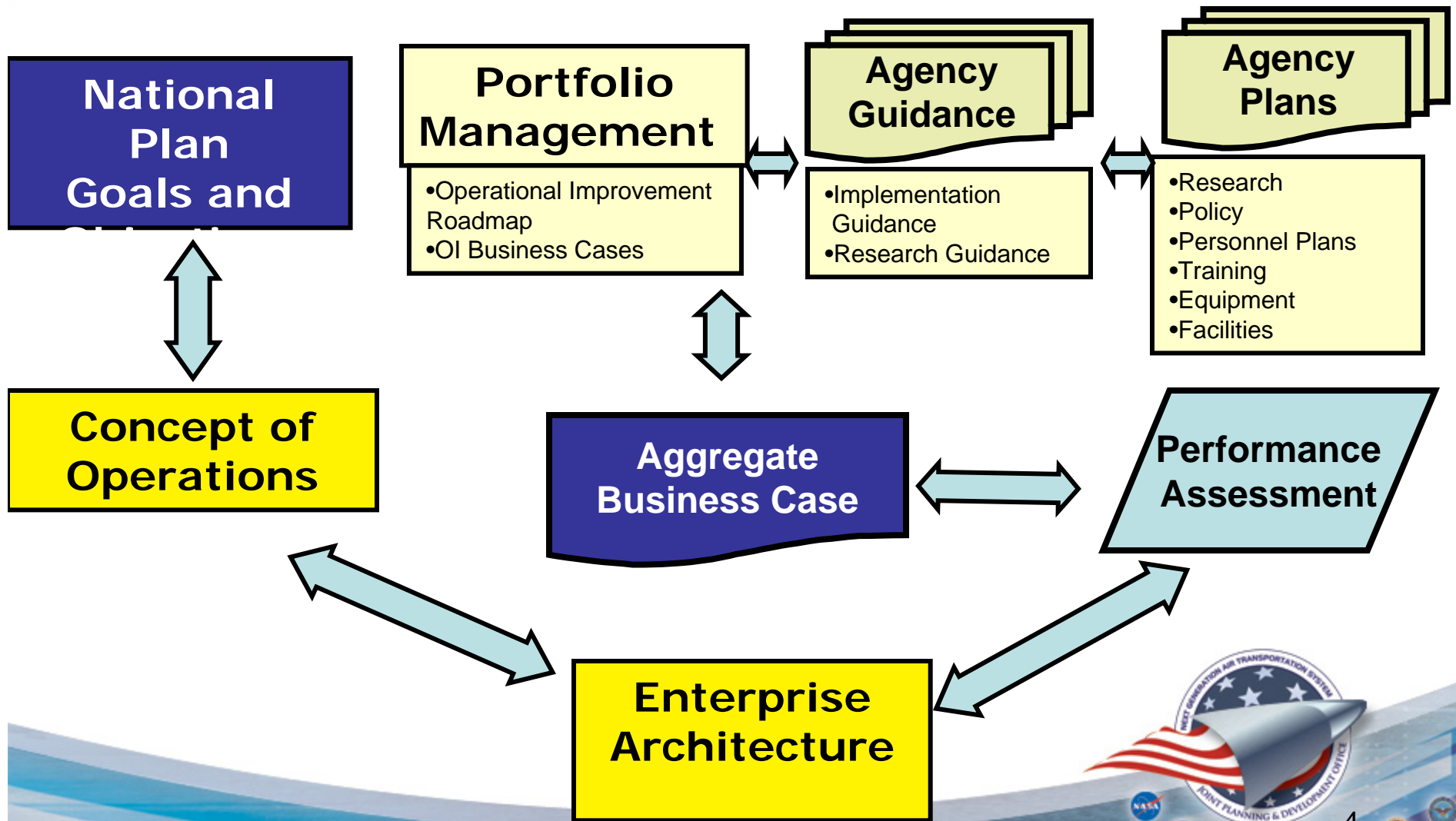
The NextGen Plan and Concept of Operations defines the system that can safely and efficiently handle the level of traffic expected in 2025.



Source: MITRE/CAASD Transforming Air Traffic Operations Productivity Improvement Validation Study



National Plan to Agency Guidance



Concept of Operations Purpose

- To describe and communicate the JPDO view of how the next-generation system is envisioned to operate in 2025
 - Focus on significant changes from key user perspectives
 - Drive research and implementation activities and non-material changes needed to achieve the vision
 - Represent and relate to the Enterprise Architecture as a key transformation management mechanism (change and investment)

The ConOps provides a baseline to initiate a dialogue with the stakeholder community in order to prioritize and synchronize investments

ConOps Development Schedule

Moving Forward - Key Completion Dates

ConOps 1.1

IPT Second Draft of ConOps 1.1	13Nov06
IPT & IMC Resolution Team Review ConOps 1.1	20Dec06
Storyboard ConOps and Draft Executive Summary	1Dec06

ConOps 1.2

Version 1.1 Comment Review/Resolution	5Jan07
ConOps Revision - Initial Draft ConOps 1.2	19Jan07
Release ConOps 1.2 to Stakeholders	28Feb07
Stakeholder Review	13April07

ConOps 2.0

Version 1.2 Comment Collection Review/Resolution	20Apr07
MIPT Endorsement for Release to Board	31May07
ConOps Transmitted to Board	1June07



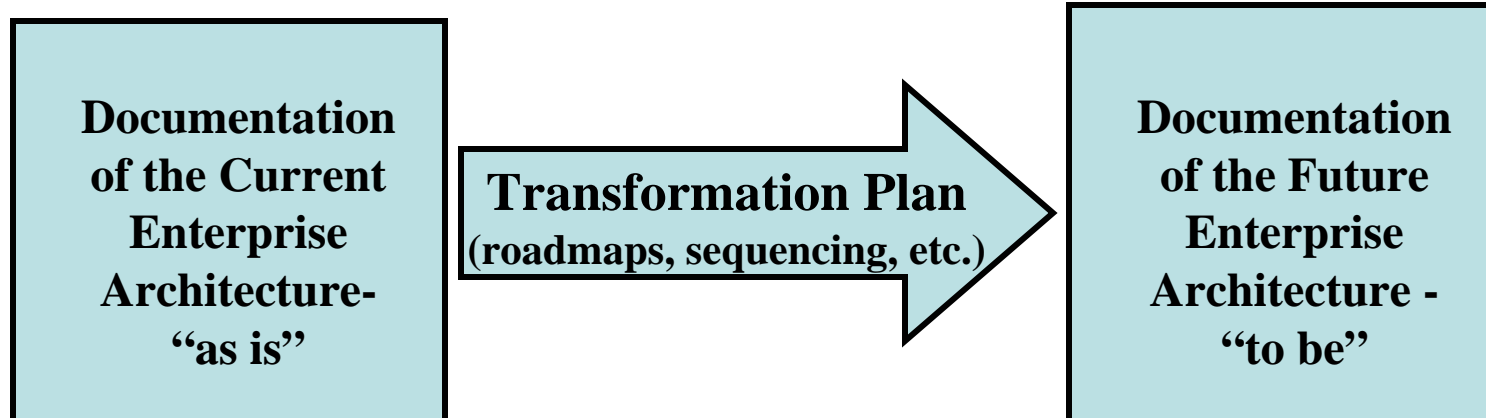
An Enterprise Level Focus on NextGen

- Transformation of the Nation's Air Transportation System requires:
 - **New policies** to create the right relationships and behaviors,
 - **Modernization** of infrastructure to reduce cost and set the stage for a new level of performance, and
 - **R&D** to create new functionality and capability that takes advantage of a modernized infrastructure
 - Engagement of **multiple entities** both public and private

Enterprise Architecture provides the holistic structure to manage the transformation of the National Air Transportation System

How will we use Enterprise Architecture?

- Enterprise Architecture as a **documentation method** provides a modeling **framework** for the enterprise



- Enterprise Architecture enables **effective management** of NextGen planning and development by:
 - Supporting **change management** at the various levels
 - Identifying **integrated decisions** leading to requirements, agency commitments, and ultimately to **synchronized investments** to deliver NextGen
 - Tracing **key dependencies** between capabilities, policies, operations, organizations, systems, and technologies



Enterprise Level Focus on NextGen

- Enterprise links
 - Systems of systems
 - Business rules
 - Cost and benefits
- One framework (architecture) to manage:
 - New policies
 - New behavior in the NGATS
 - Infrastructure
 - Reduce cost
 - New level of performance
 - R&D
 - Create new functionality
 - Public and private investments

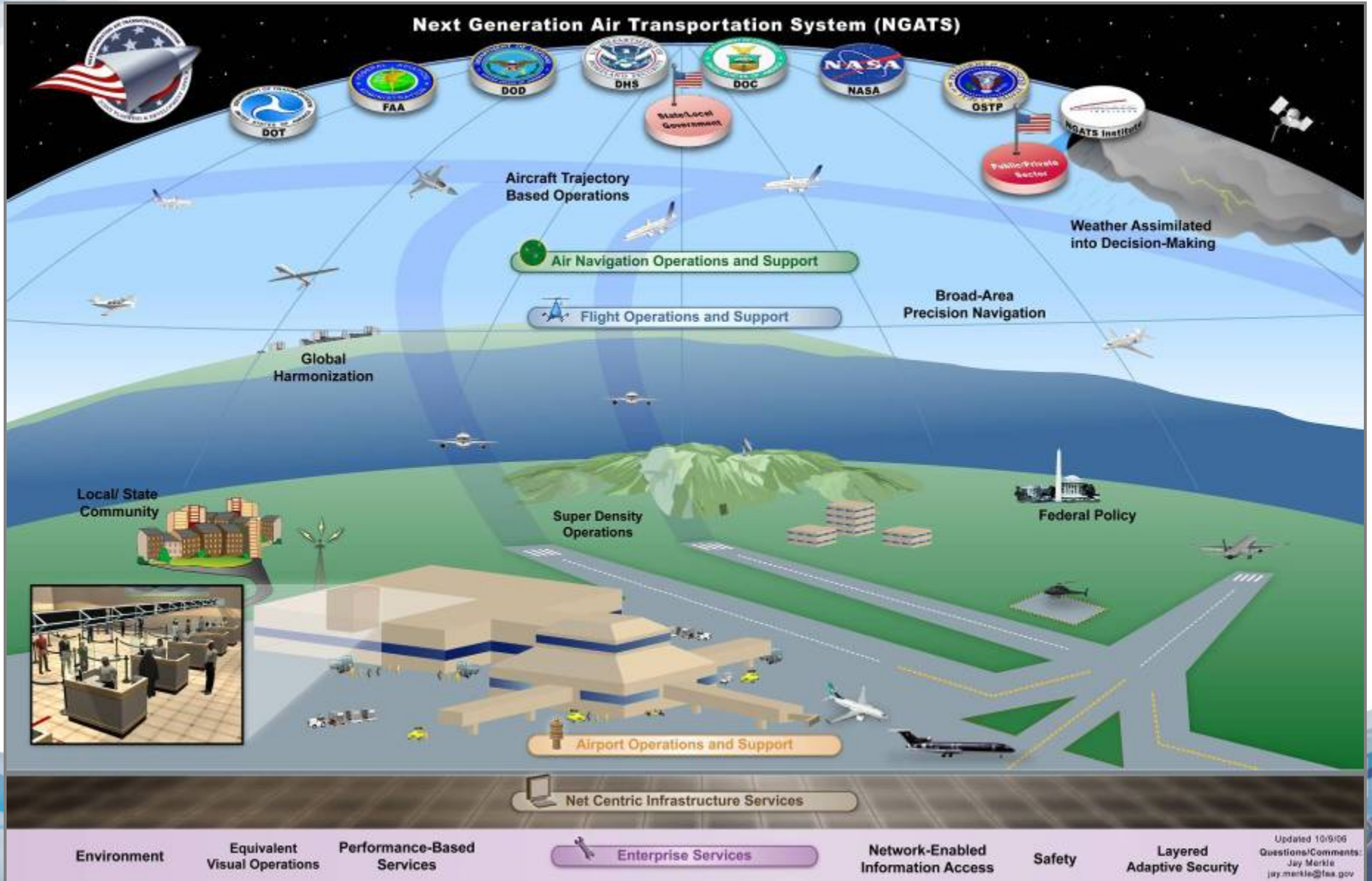




NGATS Operational View

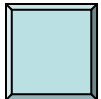
Next Generation Air Transportation System
Joint

NGATS Community
Model View





NGATS Community Model View

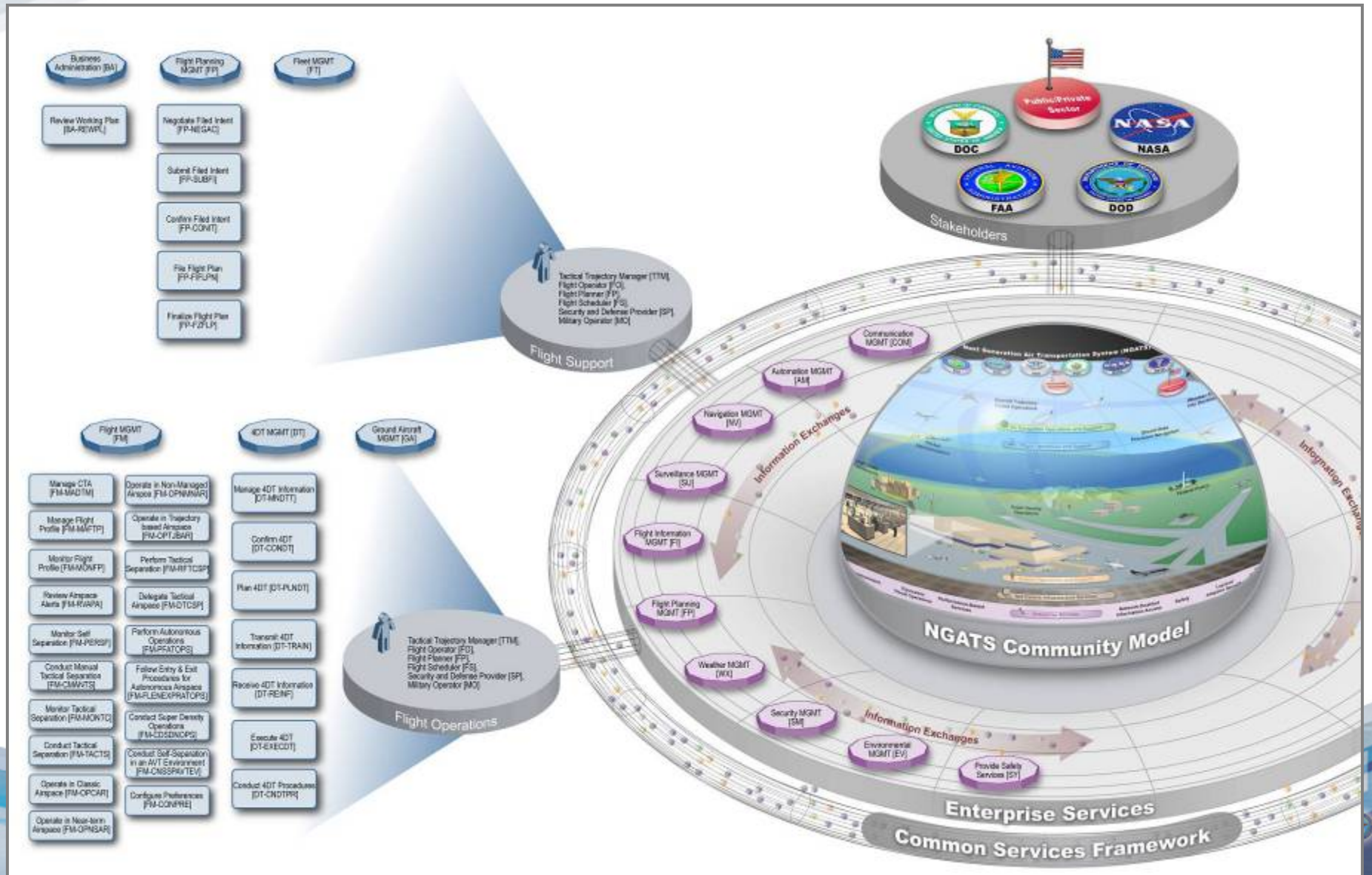




NGATS Community Model View – Flight Operations and Support

Next Generation Air Transportation System
Joint Planning & Development Office

NGATS Community
Model View

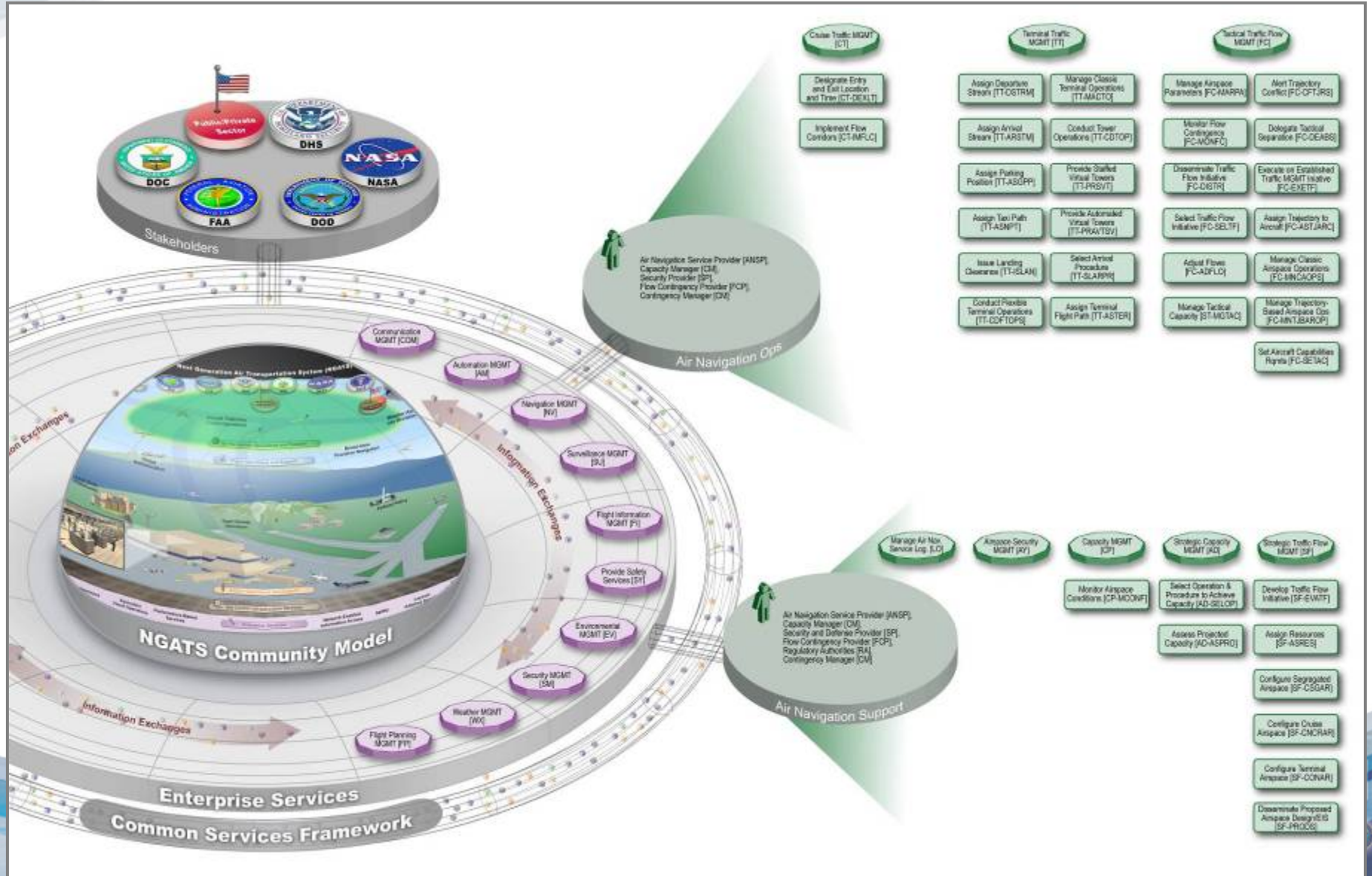




NGATS Community Model View – Air Navigation Operations and Support

Next Generation Air Transportation System
Joint Planning & Development Office

NGATS Community
Model View



NextGen 2025 Architecture Status

Next Generation Air Transportation System
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- Curb-to-curb Enterprise Architecture, including Airport Operations and Infrastructure Services, is currently being synchronized and aligned with the ConOps as the ConOps is under internal review
- Community Model will be used as a user interface into the Architecture
- Full-breadth of EA to be rolled out early in CY07



NextGen 2025 Architecture Implications for Airports

- Every potential solution to NextGen critical issues must be systematically evaluated and interpreted with an acute understanding of the impact on the entire network of airports, e.g. solutions implemented at large airports may cause significant negative impacts at medium and small airports.
- Potential solutions will recognize the uniqueness and diversity of airports including the local and regional implications of NextGen concepts.



NextGen 2025 Architecture Implications for Airports

- Planning
 - Improved flexibility, efficiency, and responsiveness for airport planning from a system perspective
 - Incorporation of provisioning for ATC and security into planning process
 - Improved focus on airport preservation
 - Regional, state, local and metropolitan planning enhanced
 - Information on airport needs and growth is readily available
 - Decisions on land use, new structures, and future planning are made in the interest of long term airport sustainability.



NextGen 2025 Architecture Implications for Airports

Next Generation Air Transportation System
Joint Planning and Development Office

- Day-to-Day Operations
 - Decisions can be made in a richer, holistic context of the NAS
 - Information and data are available to airports in a uniform and predictable manner yielding enhanced airport management functions
 - Security and Emergency Operations
 - ANSP Traffic Flow and Flight Status Information
 - Integrated Weather Picture
 - Integrated Surface and Ramp Traffic Management
 - Environmental Management



Summary

- JPDO Products have been developed to support the Next Generation Air Transportation system
 - Concept of Operations
 - Enterprise Architecture
 - Operational Improvement Roadmaps
 - Budget Guidance
- Development of proposed NextGen concepts is being addressed through Agency FY09 budget guidance

Potential implications of NextGen concepts on airport planning and operations are **significant**. Implementation allowing for **improved airport efficiency** while recognizing the **unique aspects and diversity of individual facilities** is a critical component of **NextGen success**.

Backup



NextGen Annual Cycle

