

Overview of NextGen and the JPDO Model of Interagency Planning

Edgar G. Waggoner
Director,
JPDO Interagency Architecture and
Engineering Division
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Outline

- NextGen Overview
- JPDO Model
- Multi-Agency NextGen Plan
- Concept of Operations
- Summary

Aviation Challenge

- **The Nation's aviation system is broadly utilized**
 - **Commercial transportation of passengers and cargo**
 - **Military and Homeland Security training and operations**
 - **Personal and business general aviation**
 - **Law enforcement, fire-fighting, weather monitoring and other public use operations**
- **But the current aviation system**
 - **is not performing adequately**
 - **is not scalable**
- **And new opportunities are on the horizon – unmanned aerial systems**
- **The NextGen plan offers a transformational approach to resolving current inadequacies**
- **Cost of business as usual – billions annually**



Vision 100 –

Century of Aviation Reauthorization Act
(Public Law 108-176), December 12, 2003

- Established goals and performance characteristics
- Established the NextGen Senior Policy Committee
- Established the NextGen Joint Planning and Development Office

NextGen System Goals*

“ To achieve our vision..., we aim to:”

- Retain U.S. leadership in global aviation
- Expand **capacity** and **reliability**
- Ensure **safety** and **security**
- Minimize the **environmental impact** of aviation
- Ensure our **national defense**



- NextGen System Goals will be achieved by researching, developing and implementing:
 - Modernized, High-Performance Communications, Navigation and Surveillance (**CNS**)
 - Automation-Assisted Trajectory-Based Air Traffic Management (**ATM**)
 - Clean, Efficient **Aircraft** Operations
 - Efficient, High-Throughput **Airport** Operations
 - Net-Centric Information Sharing (**NCIS**) between all System Elements
 - Integrated and Proactive **Risk Management** for Safety, Security and Environmental Protection

The Next Generation Air Transportation System Partners



Department of Transportation (DOT)



Department of Defense (DoD)



Department of Homeland Security (DHS)



Department of Commerce (DOC)



Federal Aviation Administration (FAA)



National Aeronautics and Space Administration (NASA)



White House Office of Science and Technology Policy (OSTP)



Office of the Director of National Intelligence (ODNI) (*ex officio*)



Coordination

Governance	Senior Policy Committee (SPC) chaired by the Secretary of Transportation
FAA	NextGen Review and Management Boards
DoD	U.S. Air Force Lead Service Office
DOC	Senior Executive Weather Panel (with USAF, USN, FAA, and JPDO)
NASA	Aeronautics Research Mission Directorate, Research Transition Teams
DHS	Investment in Network-Enabled Operations Demonstration (w/DoD and FAA) Integrated Surveillance Integrated Product Team (IPT)
ODNI	Integrated Surveillance IPT
OSTP	National Plan for Aeronautics R&D

NextGen Transformation

From...  *To...*

Ground-Based Navigation and Surveillance

Voice Radio Control

Disconnected Information Systems

Human-Centric Air Traffic Control

Fragmented Weather Forecasting

Visibility Limited Airfield Parameters

Forensic Safety System

Inefficient Security Screening

Current Aircraft Environmental Footprint

Satellite-Based Navigation and Surveillance

Digital Data Exchange

Net-Centric Information Access

Automation Assisted Air Traffic Management

Probabilistic Weather Decision Tools

Equivalent Visual Operations

Prognostic Safety System

Integrated Security Risk Management

Reduced Aircraft Environmental Footprint

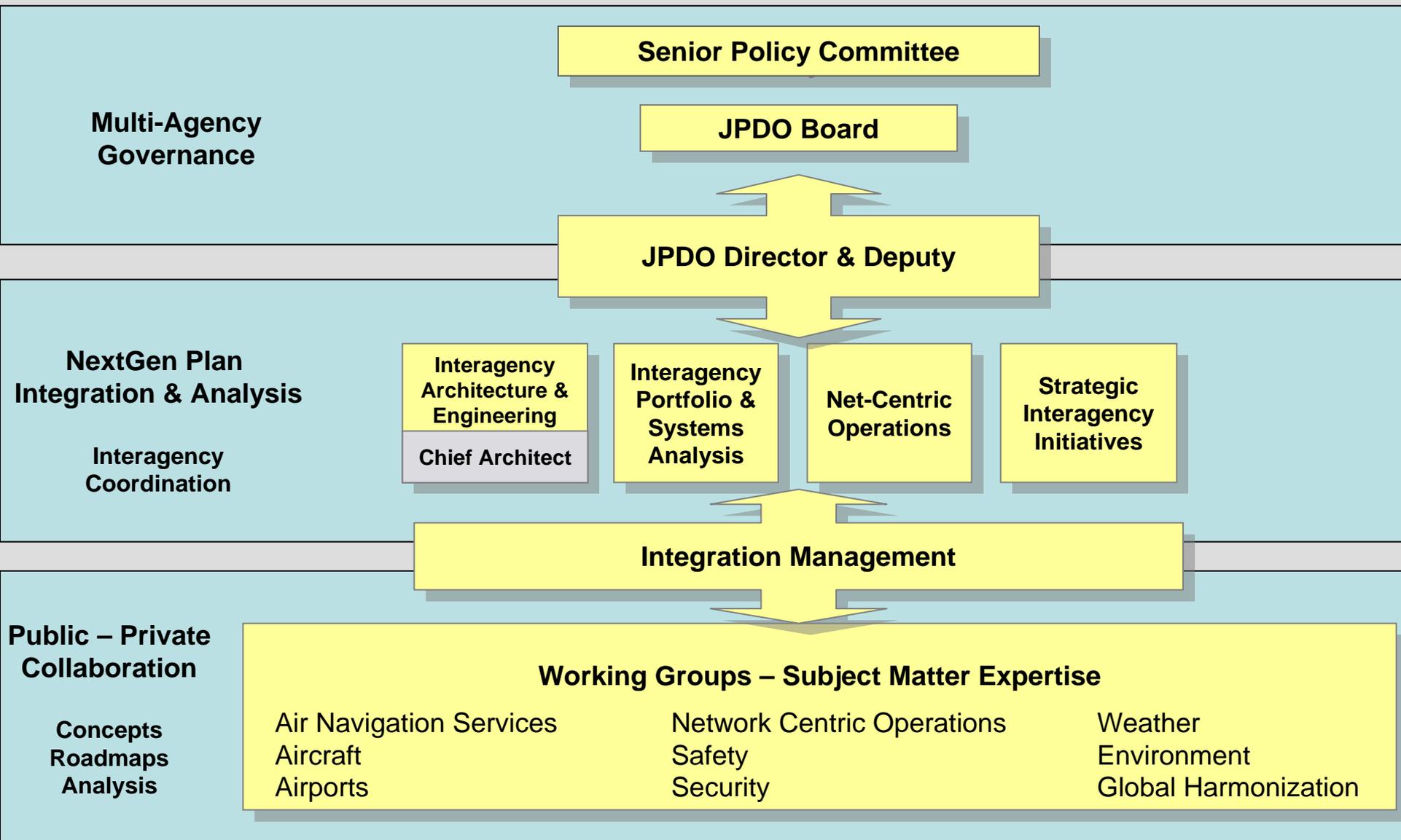
Current Interagency Initiatives

- Integrated Surveillance
- Multi-Agency Weather Plan
- Net-Centric Operations
- Addressing Environmental Constraints
- National Aviation Safety Management
- Security Risk Management
- Verification and Validation of Complex Systems
- Research Transition Teams
- Surface Management at Memphis
- Air/Ground Functional Allocation
- Closely Spaced Parallel Runways

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JPDO Organizational Model



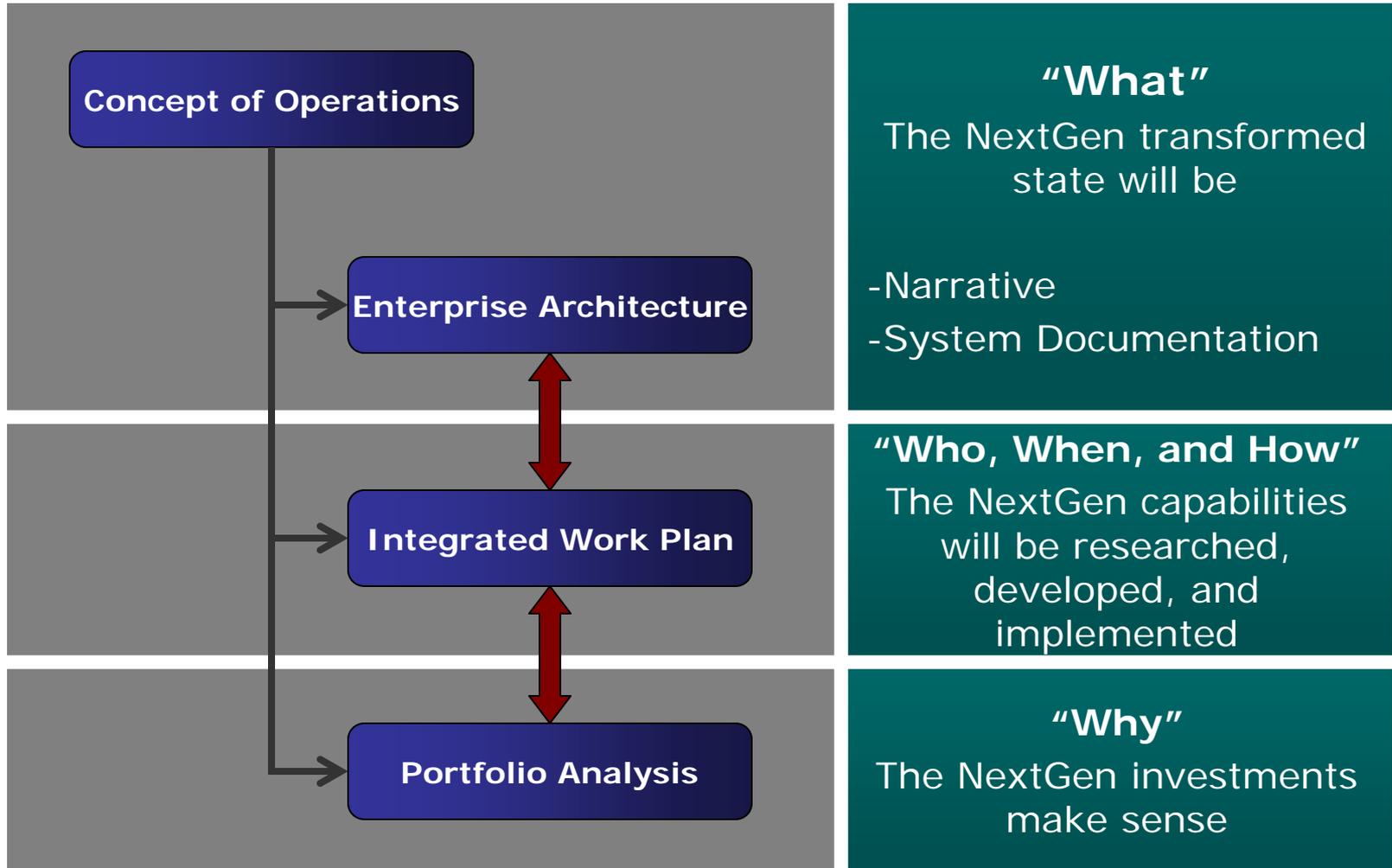
NextGen Institute:

Mechanism for Industry Involvement

- Primary Role of the Institute
 - To provide a mechanism for private sector to actively engage with government in defining, developing, and implementing NextGen with the JPDO
 - 16-member Institute Management Council (IMC)
 - 250+ private sector Working Group participants
- Nine Working Groups
 - Each has a Government and an Industry Co-chair

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Multi-Agency NextGen Plan



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

Concept of Operations

- **Total of 4500 comments on all versions of the ConOps to date**
 - 55% industry, 45% government
 - 70% were accepted or accepted with change
- **ConOps v2.0 published June, 2007 and updated as ConOps v3.0 in September, 2009**
- **Planned update in September, 2010 to include updates to:**
 - **Airports Chapter**
 - **NetCentric Operations Chapter**
 - **AOC/FOC Findings**

NextGen Capabilities



Collaborative Capacity Management



Coordinated National & Homeland Security



Collaborative Flow Contingency Management



Improved Environmental Performance



Efficient Trajectory Management



Improved Safety Operations



Flexible Separation Management



Flexible Airport Facility & Ramp Operations



Integrated NextGen Information

Next Generation Air Transportation System (NextGen)



Environment	Layered Adaptive Security	Risk Management	Safety	Cyber Security
Flight Planning	Aeronautical Information	Geospatial Information	Position, Navigation, and Timing	Performance Metrics
Flight Data	Surveillance	Communication	Information Services	Weather
Net Centric Environment			Network-Enabled Information Access	



Questions/Comments:
Jay Merkle
jay.merkle@faa.gov

Updated September 2008

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Summary

- NextGen is a Congressionally-mandated multi-agency initiative
- NextGen is a long-term transformation of a complex enterprise
- JPDO model reflects Congressional charter and the NextGen enterprise context
- JPDO model and multi-agency NextGen Plan is being used to achieve multi-agency investment alignment, facilitation of interagency action in priority areas, and simulation of the future enterprise for feedback and robustness
- **Many challenges remain!**

Partners in the Next Generation Air Transportation System

Joint Planning and Development Office



Multi-Agency
Leadership



Advanced
Aviation
Operations
& Safety



Intelligent
Weather
Solutions



Advanced
Operations
& Security



Enhanced
Layered
Security



Aeronautics
Research
& Technology



National
Policy



Questions?