

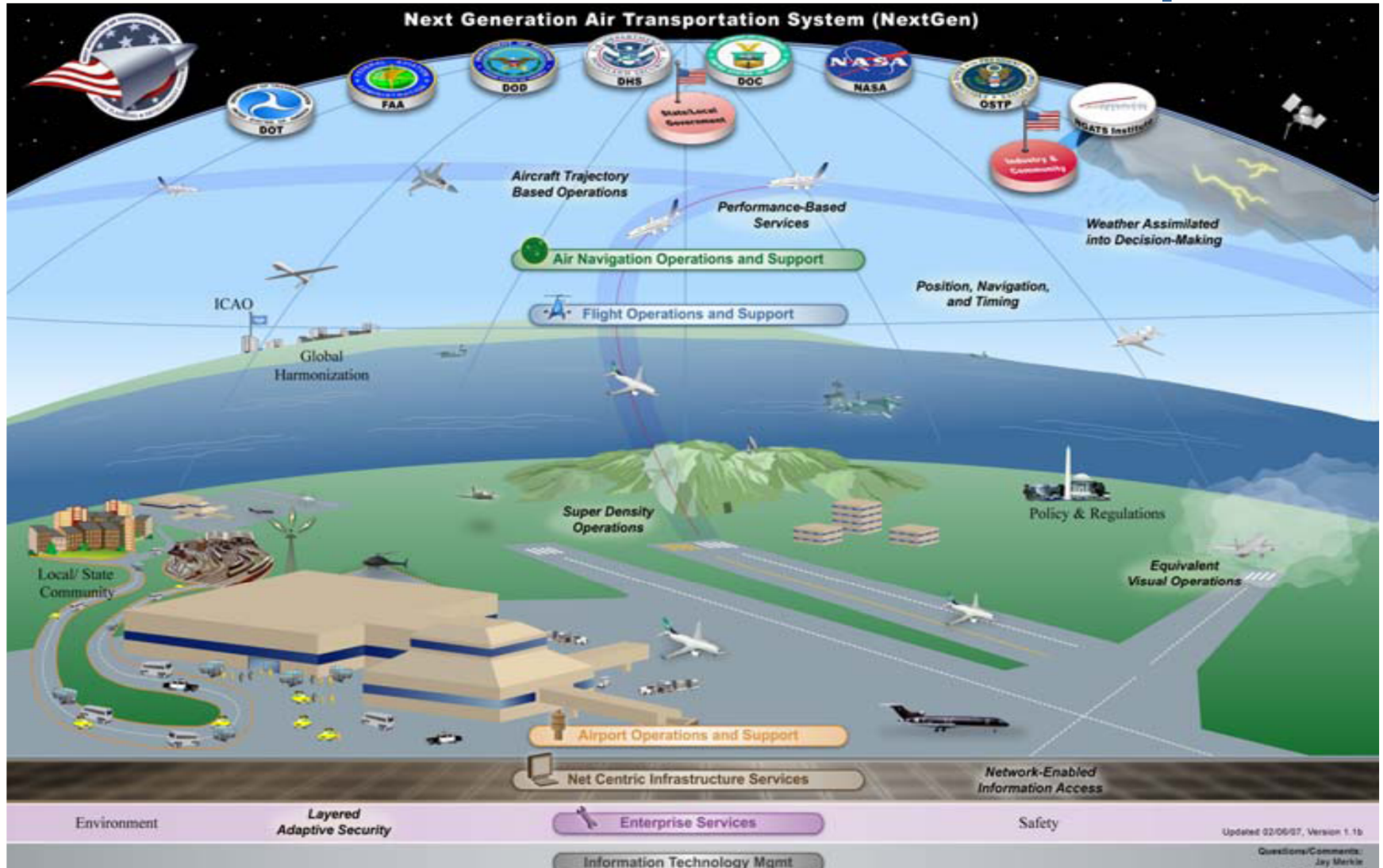
Net-Centricity and NextGen Networks

Michael Little, NASA Langley Research Center
Joint Planning and Development Office (JPDO)
NCO Division

May 19, 2010



Fundamental NextGen Concept



JPDO/NCOD Mission

Create a
Workable
Framework

Gain Buy-In
Through
Demonstration

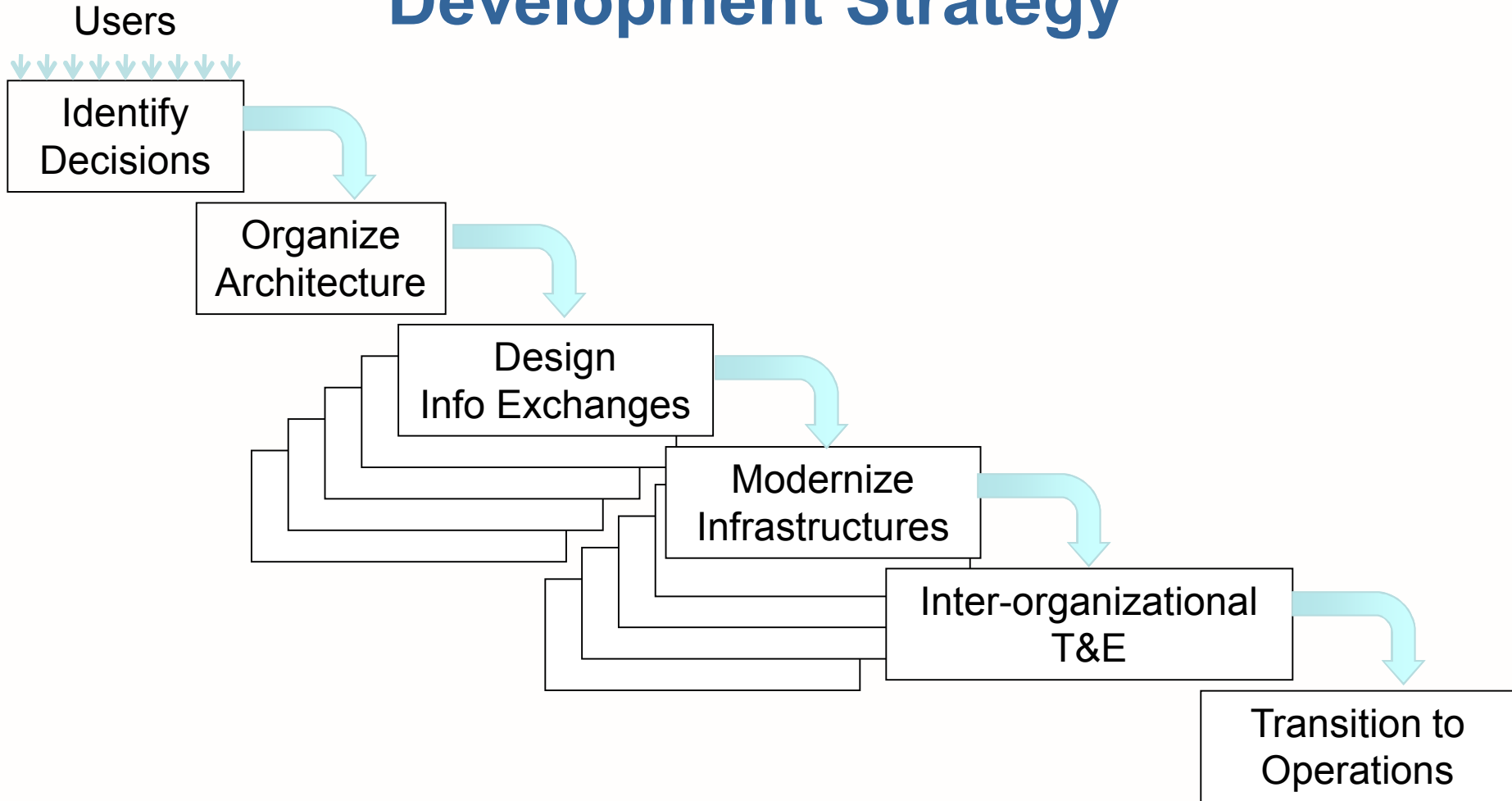
Capitalize on
Work Already
Done

Move it
Forward

- Define standards, technical *framework*
- Establish *process* for identifying data sharing requirements
- Sponsor interagency development for *proof-of-concept*
- Recommend *new methods* for requirements adjudication, acquisition, testing, C&A
- Evaluate and apply new technology—e.g., Cloud, SOA
- Leverage *R&D* and best practices from *all partner agencies*

Address ***total stakeholder audience*** in responding to requirements
Create products that can be ***fielded early to accrue benefit*** to stakeholder

JPDO Net-centric Operations Development Strategy

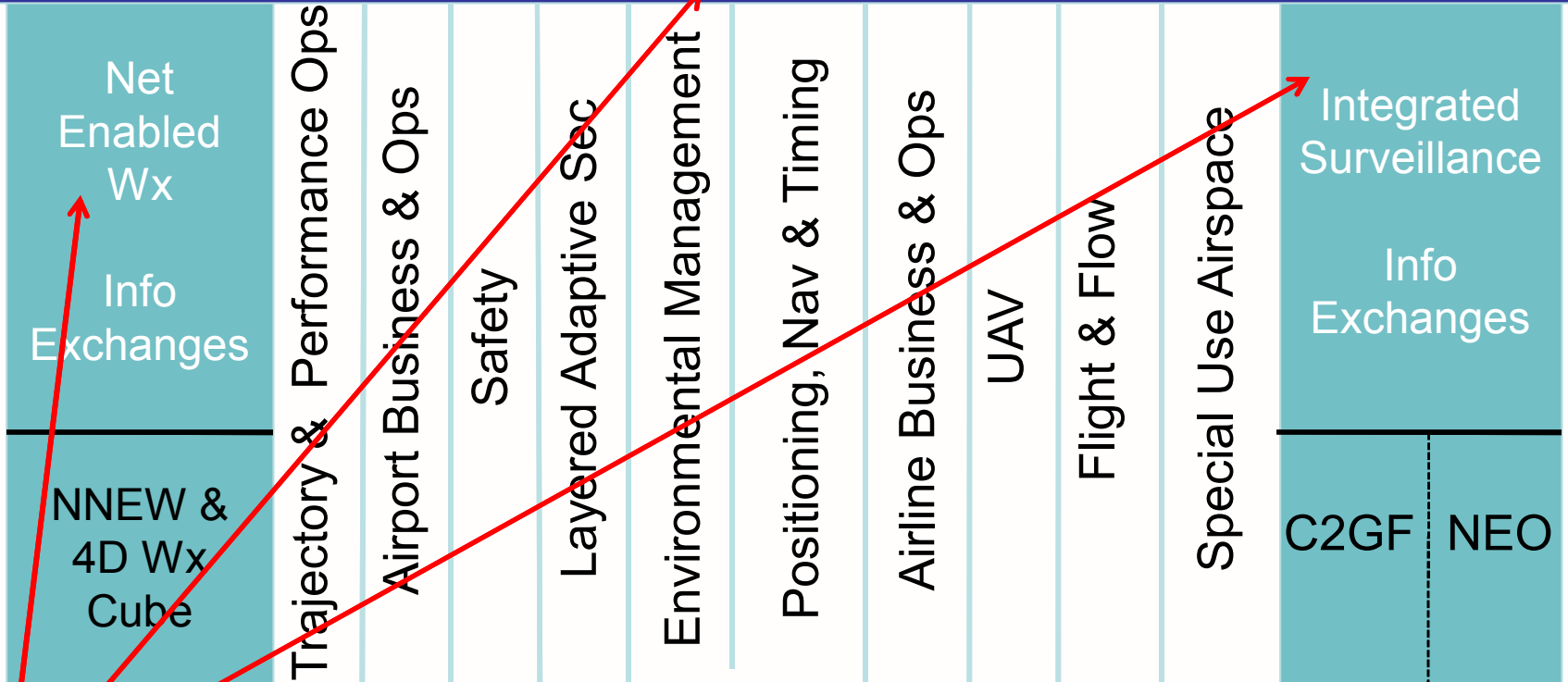


NCO Key Work Elements

User Input



Joint NCO ConOps

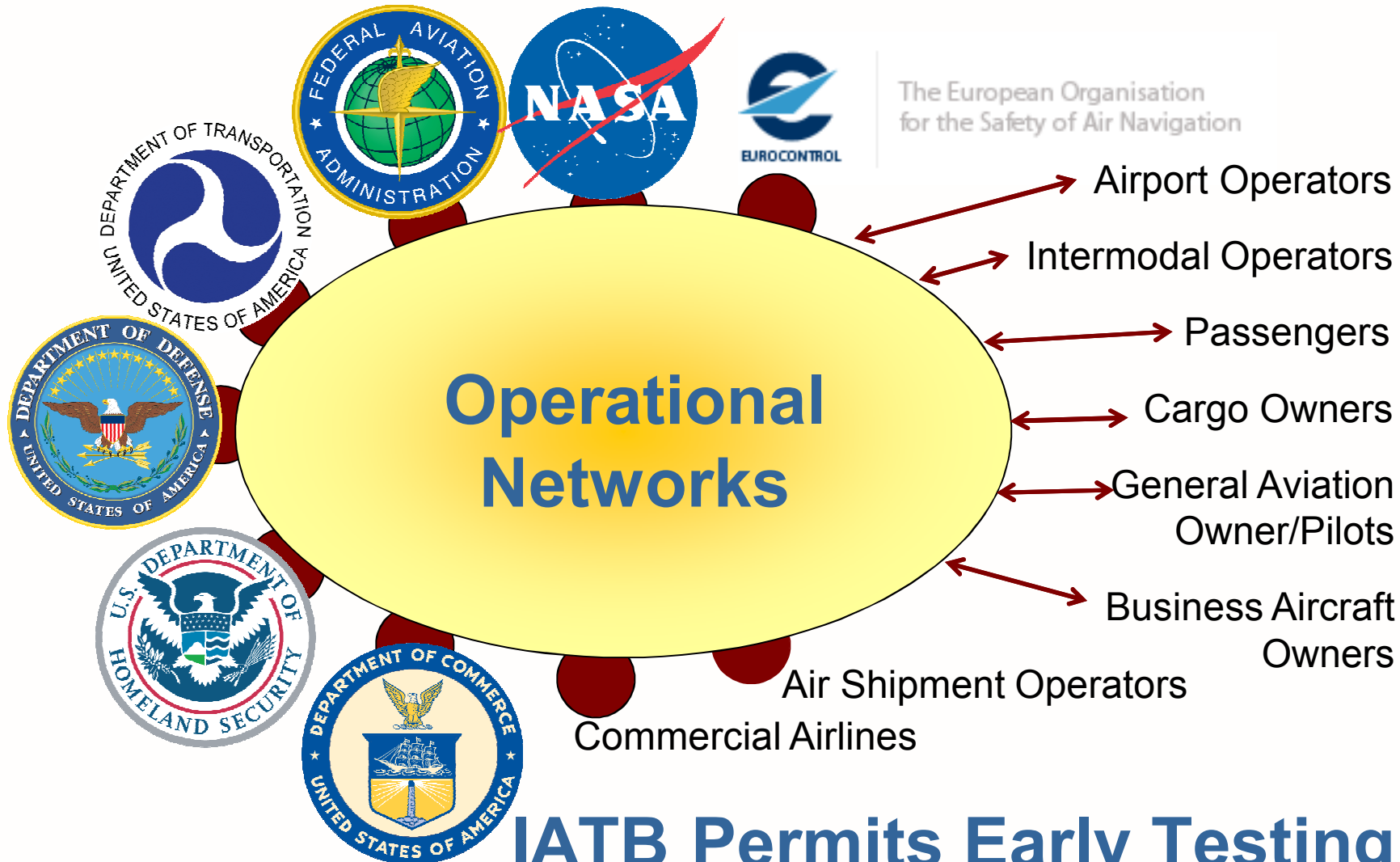


Inter-Agency Test & Evaluation Collaboration

Focus on capability areas with potential for near-term success



NCO Needs Infrastructures to Link Together



IATB Permits Early Testing



Value of an Interagency Test Bed

- Early start to collaboration
 - NextGen SOA schedule not yet time-critical with small pre-existing investment
 - Most NextGen SOA design can still be influenced by lessons learned
 - Federal-wide acquisitions save money and time compared to local
 - Accelerate learning curve among later service providers
 - Debug inter-connectivity among networks in R&D environment and check load
- Agencies maintain internal processes with inter-agency coordination
 - Consistent approach to inter-organizational testing across Info Exchange Services
 - Evaluate the value of individual standards across organizations
 - Identify extent of applicability of most/least mature standards
 - Improve effectiveness of application provider design, development and testing efforts to meet NextGen needs
- Accelerate Customer Application Development
 - Preview technical characteristics of services to developers
- Create an environment for cultural change
 - Developers, info owners, decision-makers



Responsibilities for Testing NextGen NCO Info-Exchange Services

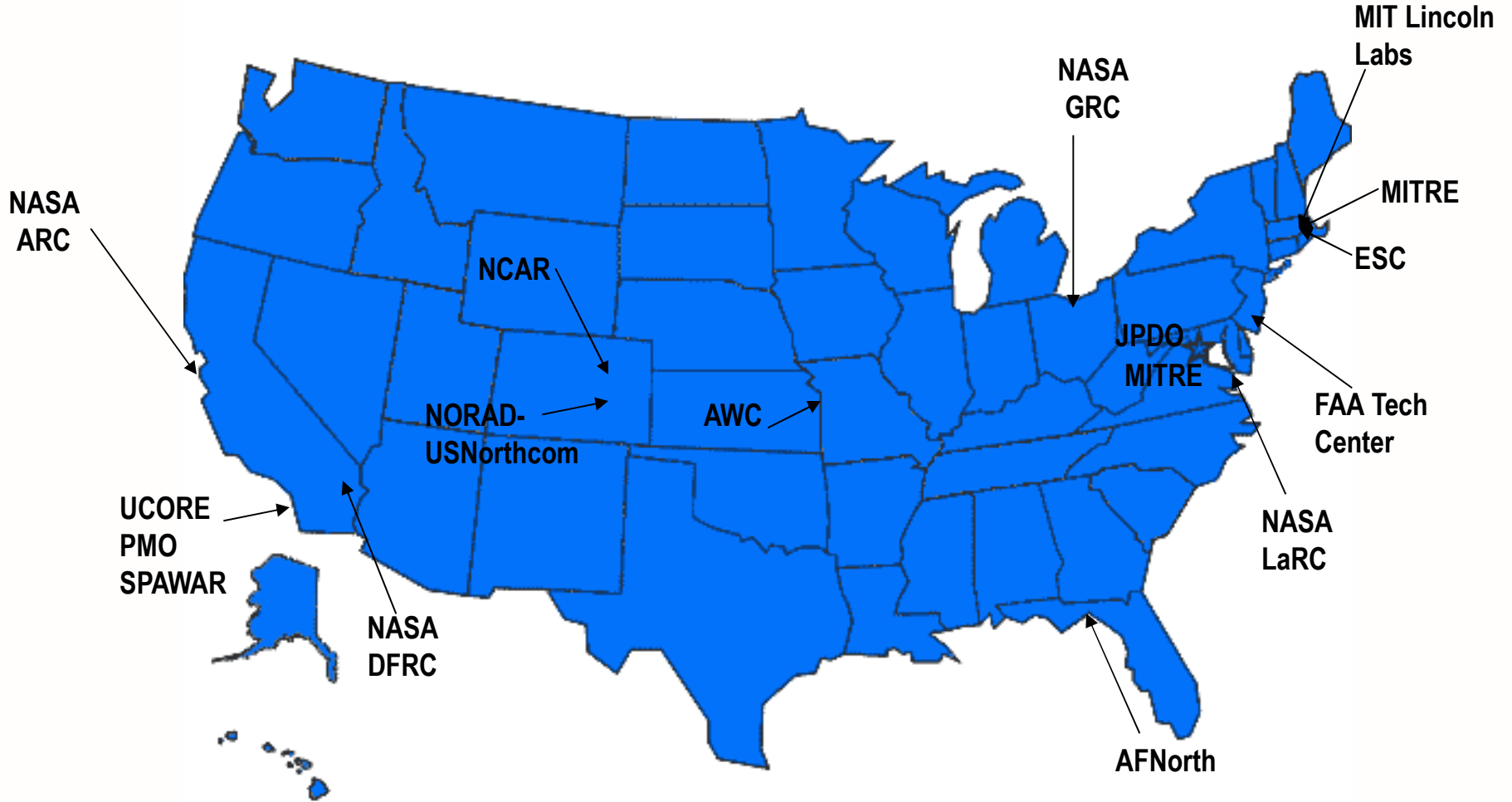
- Information Providers: develop, deploy, and support
 - Comply with Parent Organization's policies and requirements
 - Meet Inter-agency agreements for service provision by conforming to JPDO NextGen NCO approved standards
 - Internal testing, review and Authorization to Operate
 - Operations and Maintenance of Operational Capabilities
- Infrastructure/Security Management: Support Mission Objectives
 - Support mission objectives while providing approved access and capacity
- JPDO: Inter-Organizational Interoperability
 - Identify/clarify system interfaces for all users in NextGen NAS
 - Federal, State, Local Governments, and Industry components
 - Verify compliance during development/deployment
 - Develop approach for ongoing compliance during ops
 - Evaluate usability/accessibility by external organizations
 - Publish authoritative source designations
 - Establish means for monitoring Service Level Agreement compliance

Building an Interagency Test Bed

- Form a small skunk works to prove we can succeed
 - Form a Working Group and agree on how to collaborate
 - Lincoln Labs, FAA Tech Center, NASA LaRC ASDC, USAF ESC
 - Each site develop a well-defined service to understand SOA service functions
 - Service Registry, Delivery, Testing
 - Share client tools to use in testing characteristics of other's services
 - Conduct initial inter-organizational testing
 - Formalize Relationship through MOU or TOR under JPDO Governance
 - Technical Working Group to schedule testing and exchange information
- Graduate beyond skunk works **based on success**, not speculation
- Obtain Additional Resources based on track record
 - Coordinate Agency efforts, not dictate them
 - Demonstrate value of inter-organization coordination
- Grow slowly to evaluate scalability
 - Add other organizations to the IATB
 - MITRE Labs, ESC and USAF Gunter AFB 350th Test Wing, NASA ARC, AFWA, SWIM Programs
 - Private sector components (airlines, airports, manufacturers)
 - Test interagency service delivery from closed networks



IATB Participant Locations



Digital Data Creates Opportunities to Improve Decision Making

- Create Shared Situational Awareness that leads to faster, better Collaboration on Decisions
 - Reduce instances of re-work or second-guessing
 - Permit faster reaction of derivative decision makers
- Feed tools for Collaborative Decision Making
- Enable application of automation
- Reduce confusion and miscommunications
- Improve time to react to changing conditions
- Optimize Flight Trajectory considering all relevant factors

JPDO Online Resources



JPDO Web Site www.jpdo.gov

NextGen Institute www.ncat.com/ngats/index.html



Facebook www.facebook.com*



Twitter twitter.com/theJPDO



MyJPDO Blog myjpdo.wordpress.com



Wikipedia www.wikipedia.org*

****Use the search term "Joint Planning and Development Office"***