

# 3<sup>rd</sup> National Aeronautics R&D and Infrastructure Plans Outreach Meeting



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*Office of Science and Technology Policy*

*30 July 2007*



# 3<sup>rd</sup> National Aeronautics R&D and Infrastructure Plans Outreach Meeting



30 July 2007

*Aeronautics S&T Subcommittee (ASTS)  
Committee on Technology  
National Science and Technology Council (NSTC)*

- **1:30 – 1:50: Brief Review of National Aeronautics R&D Policy and Executive Order**  
**Review of Strategy for the Development of the R&D and Infrastructure Plans**  
**Private Sector interactions with the NSTC**
- **1:50 – 2:00: General Q&A**
- **2:15 – 3:00: Coordinating Group Session #1**
- **3:15 – 4:00: Coordinating Group Session #2**
- **4:15 – 4:30: Wrap up and Closing Remarks**



# Overview

- **Review of the National Aeronautics R&D Policy and Executive Order 13419**
- **Review of the Strategy for Development of the National Aeronautics R&D and Infrastructure Plans**
- **Private Sector interactions with the NSTC**



# NSTC Aeronautics S&T Subcommittee



- **Created Sept. 2005**
- **Membership:**
  - **OSTP/NASA (Co-Chairs)**
  - **Department of Defense**
  - **Department of Transportation**
  - **Department of Commerce**
  - **Department of Energy**
  - **Department of Homeland Security**
  - **National Science Foundation**
  - **Department of State**
  - **US International Trade Commission**
  - **Executive Office of the President**
- **Outreach to Academia, Industry, and Aviation User Community in Spring 2006**
- **Final approval of Policy and EO December 20, 2006**



# Overview: National Aeronautics R&D Policy



- **Establishes Principles**
- **Sets Policy Goal and Objectives**
- **Creates General Guidelines for Federal Government**
- **Establishes Specific Guidelines**
- **Implementation Guidelines**



# Policy Goal



***“Advance U.S. technological leadership in aeronautics by fostering a vibrant and dynamic aeronautics R&D community that includes government, industry, and academia.”***



# Policy Principles

1. ***Mobility*** through the air is vital to economic stability, growth, and security as a nation
2. Aviation is vital to ***national security*** and ***homeland defense***
3. Aviation ***safety*** is paramount
4. ***Security*** of and within the aeronautics enterprise must be maintained
5. The US should continue to possess, rely on, and develop its world-class aeronautics ***workforce***
6. Assuring ***energy availability*** and ***efficiency*** is central to the growth of the aeronautics enterprise
7. The ***environment*** must be protected while sustaining growth in air transportation



# Policy Guidelines

- **General:**
  - Role of the Federal Gov. in Aeronautics R&D
  - Aeronautics Workforce
  - Academic Cooperation
  - Commercial Cooperation
  - International Relations
- **Specific:**
  - Stable and Long-term Foundational Research
  - Advanced Aircraft Systems Development
  - Air Transportation Management Systems
  - National RDT&E Infrastructure



# Policy and EO Implementation Guidelines



- **National Aeronautics R&D Plan**
  - Priorities and objectives, roadmaps, timelines
- **Aeronautics RDT&E Infrastructure Plan**
- Engagement with non-Federal stakeholders
- Dissemination of R&D results
- Other innovative policies and approaches that complement and enhance Federal activities
- Biennial review procedure



# Strategy for Development of Plans – Development of R&D Coordinating Groups



- **Mobility**
  - JPDO, NASA
- **National Security and Homeland Defense**
  - DOD
- **Aviation Safety**
  - FAA, NASA
- **Aviation Security**
  - DHS
- **Energy and Environment**
  - DOD, DOE, FAA
- **RDT&E Infrastructure**
  - DOD, NASA



# Contents of National Aero R&D Plan



- **State-of-the-art of each Principle - where we are as a Nation today**
- **Top-level prioritized National aeronautics R&D goals and objectives (including numerical targets if appropriate) by timeline - where we want to go as a Nation**
  - **Near-term (5 years)**
  - **Mid-term (5-10 years)**
  - **Far-term (>10 years)**
- **Summarize R&D activities and develop top-level timelines - how we get there**
- **Identify significant gaps and/or unnecessary duplication**
- **Identify any cross-cutting issues**



# Contents of RDT&E Infrastructure Plan



- How to develop consistent cost and usage policies?
- What RDT&E assets are “critical from a national perspective”?
- How to develop and implement measures to improve coordination of user needs across the US Government and the broader user community?
- How to define an “approach for constructing, maintaining, modifying, or terminating” RDT&E assets?

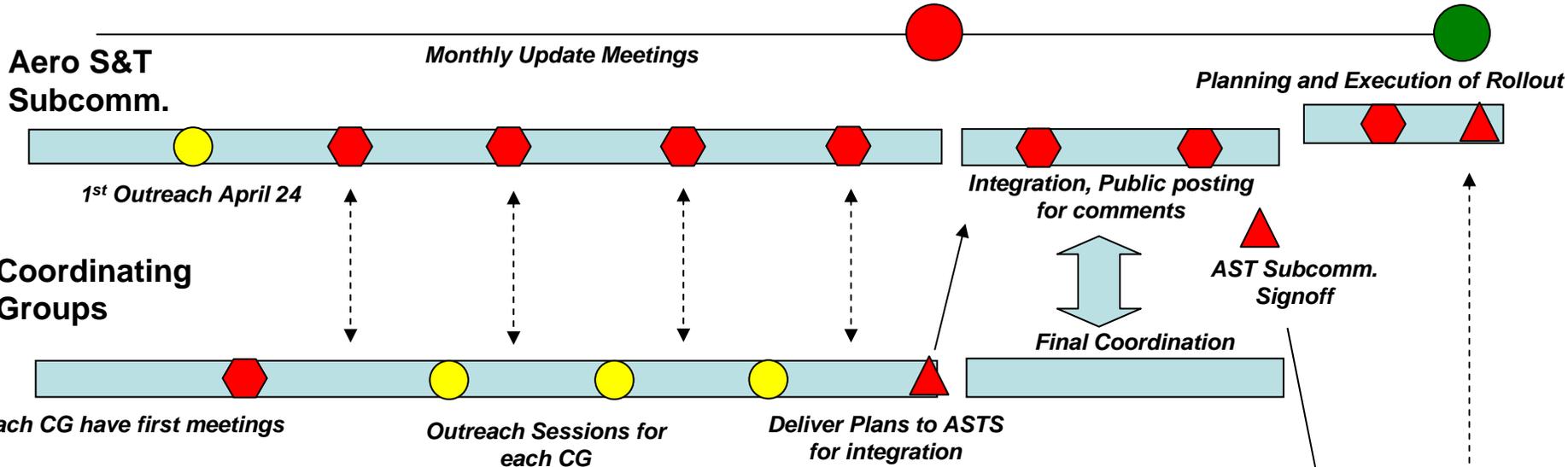


# National Aeronautics R&D Plan Timeline - 2007

*Coord. Groups' chapters due Sept. 4*

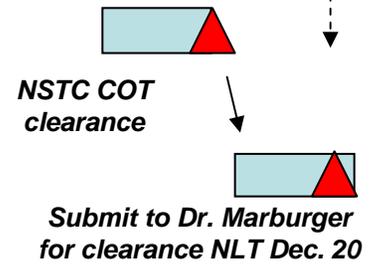
*Submit for OSTP Approval – NLT Dec. 20*

April      May      June      July      Aug.      Sept.      Oct.      Nov.      Dec.



**3 NSTC Outreach Sessions:**

- April 24, National Academy of Sciences, Wash., DC
- July 11, Joint Propulsion Conference, Cincinnati, OH
- July 30, NASA Ames Research Center





# NSTC Public Meeting Guidelines



- **FACA Applies to**
  - **Meetings between Government & Non-Government Personnel**
  - **Where there is a Cohesive Group Structure under Agency Control**
  - **Resulting in Group Consensus**
  - **Regarding Specific Advice on Policy**
- **Official Charter, Membership Requirements, Noticed & Open Meetings, And Other Regulatory Requirements**



# General Meeting Format

- **Informal Structure, Ad Hoc Basis, Meetings called as necessary by Subcommittee Working Groups**
- **Open to the Public, No strict Membership**
- **Meetings will be Noticed in the Federal Register & the Subcommittee Website**
- **Opportunity for the Subcommittee to Provide the Public with Information on its Progress**
- **Public to Provide Facts and Information Relevant to the Development of an R&D Policy**



# General Meeting Format (cont.)



- **These meetings will NOT be:**
  - **Drafting sessions**
  - **Opportunities for Government and the Public to agree on Specific Policies**



# White Paper Submissions

- 1-3 pages
- Final deadline: August 17, 2007
- Submit to:
  - Mobility: [aero.mobility@ostp.gov](mailto:aero.mobility@ostp.gov)
  - National Security and Homeland Defense: [aero.defense@ostp.gov](mailto:aero.defense@ostp.gov)
  - Aviation Safety: [aero.safety@ostp.gov](mailto:aero.safety@ostp.gov)
  - Aviation Security: [aero.security@ostp.gov](mailto:aero.security@ostp.gov)
  - Energy and Environment: [aero.energy-environment@ostp.gov](mailto:aero.energy-environment@ostp.gov)
  - RDT&E Infrastructure: [aero.infrastructure@ostp.gov](mailto:aero.infrastructure@ostp.gov)

[www.ostp.gov/nstc/aeroplans](http://www.ostp.gov/nstc/aeroplans)



# Mobility Coordinating Group



***Mobility through the air is vital to economic stability, growth, and security as a nation***

## Coordinating Group Members

JPDO, Ed Waggoner (Co-Lead)  
NASA, Karlin Toner (Co-Lead)

DOT, Richard John  
FAA, Steve Lang  
DOD, Guy St. Sauveur  
DOD, Thomas Russell  
NOAA, Kevin Johnson  
NOAA, Lynn Sherratz  
NOAA, Karsten Schein  
NOAA, Stan Benjamin  
NSF, Steve Nash

## Focus Areas

- Airspace
- Airports
- Aircraft

## Cross-cutting Topics

- Enterprise level modeling
- System trades and cost benefits

## Fundamental Challenges

- Airspace Management for Increased Capacity
- Collaborative Air Traffic Management
- Improved Access for Arrivals/Departures
- High Density Airport Operations
- Reduced Time to Introduce Airframe and Avionics Changes
- Advances in Aircraft Performance for Enhanced Mobility



# National Security & Homeland Defense CG



*Aviation is vital to national security and homeland defense*

## Coordinating Group Members

Office of the Secretary of Defense (Lead)

US Air Force

US Army

US Navy

National Aeronautics and Space Administration

Department of Energy

Department of Homeland Security

Federal Aviation Administration

Department of Commerce



## Fundamental Challenges (draft)

- Airspace Integration and Deconfliction
- High Efficiency Fixed Wing and Rotary Wing Propulsion
- Enabling Technologies for High Speed Flight
- Integrated Power and Thermal Management
- Improved Aerodynamics for Higher Efficiency



# Safety Coordinating Group



## ***Aviation Safety is Paramount —***

*Every individual who enters an airport or boards an aircraft expects to be safe. To that end, continual improvement of safety of flight must remain at the forefront of the U.S. aeronautics agenda.*

### Coordinating Group Members

NASA, Herb Schlickemaier (Co-lead)  
FAA, Pat Lewis (Co-lead)

DOD, John Siebert  
DHS, Ken Christensen  
NSF, Steven Nash  
FAA, Mike Basehore  
FAA, Cathy Bigelow  
FAA, Robert Pappas

### Focus Areas

- Vehicle Safety
- Cabin and Passenger Safety
- Airspace and Airborne Systems Safety
- Ground Side Safety
- System-wide, proactive identification of safety risks and safety assurance processes

### Fundamental Challenges

- V&V of complex systems
  - Software systems (vehicle level)
  - Systems of systems (airspace level)
- Adaptive systems
  - Learning systems
  - Autonomy
- Application of prognostic tools
  - Data mining
  - Timeliness



# Aeronautics Security CG

***Security of, and within,  
the Aeronautics  
Enterprise Must be  
Maintained***

## Coordinating Group Members

Randy Zeller DHS S&T – CG Lead

Michael B. Smith DHS S&T	Paul Polski DHS TSA
Timothy S. Wallace FAA	Nicholas Paulter DOC NIST
Jeff Breunig JPDO	Kathleen Higgins DOC NIST
Tom Powell JPDO	C. Vanessa Fong JPDO
Steve Cormier DHS TSA	Phillip Mattson DOC NIST
Robin Dooley CBP	Richard Booth CBP

## Focus Areas

- Aircraft Security
- Airspace Security
- Air Traffic Management
- Airport Physical Security
- Aviation Personnel Security
- Passenger Screening
- Cargo Screening

## Fundamental Challenges

- Deter and Prevent Terrorist Attacks
- Protect the US and its Interests in the Air Domain
- Mitigate Damage/Expedite Recovery from an Attack
- Minimize Security's Impact on US Economy
- Actively Engage Domestic & International Partners



# Energy and Environment CG



- *Assuring energy availability and efficiency is central to the growth of the aeronautics enterprise*
- *The environment must be protected while sustaining growth in air transportation*

## Coordinating Group Members

- FAA, Lourdes Maurice (Co-lead)  
USAF, Col. Dave Richards (Co-lead)  
DoE, Kohl Gill (Co-lead)
- DoD, Jimmy Kenyon  
DoS, Robert Rudnitsky  
EPA, Rob Brennen, Sabrina Johnson  
FAA, Curtis Holsclaw  
NASA, Vicki Crisp  
NOAA, David Fahey, A.R. Ravishankara  
NSF, Cindy Lee

## Focus Areas

- Community Noise Impacts
- Air Quality
- Energy
- Water Quality
- Global Climate

## Fundamental Challenges

- Ensuring energy diversity, security
- Improving energy efficiency
- Mitigating aviation environmental impacts



# RDT&E Infrastructure CG

## Policy Guideline

***The nation's RDT&E infrastructure must provide the capability and flexibility to test and evaluate a broad range of new aircraft and air transportation management systems and, to the extent practical, to evaluate them at an enterprise level.***

## Coordinating Group Members

NASA, Blair Gloss (Co-lead)  
DOD, Phyllis Ferguson (Co-lead)

DOD, Tom Best  
DOD, Andrew Mark  
DOD, Mark Amundson  
DHS, Herman Rediess  
DOT, Dick Johns  
DOE, Dan Cicero  
FAA, Rob Pappas  
NASA, Cathy Schulbach  
NASA, Gwynn Severt

## High Level Topics

- Define infrastructure groupings by asset type and recommend management approaches for each group – include facilities, people, processes
- Identify critical infrastructure assets from a national perspective
- Develop cost & usage policies for interagency cooperation and access by non-federal users

## Fundamental Challenges

- The RDT&E infrastructure's variety of capabilities must satisfy many requirements
- There is a wide variety of US RDT&E infrastructure users and shareholders
- Ensuring strategic investment in aeronautical test facilities and aeronautics test technology