2010 U.S. Space Policy

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Outline

- The Origins of U.S. Space Policy
- Policy creation in the U.S.
- Introduction to the 2010 Policy
- Policy Principles
- Policy Goals
- Intersector Guidelines
- Sector Guidelines
- Concluding remarks

The U.S. 1958 NAS Act

National Aeronautics and Space Act

- "The Congress hereby declares that it is the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind. "
- Established separate civil and military programs

1958 Act (2)

(1) Expansion of human knowledge of Earth and the atmosphere and space;

(2) Improvement of aeronautical and space vehicles;

(3) Development and operation of vehicles capable of carrying instruments, equipment, supplies, and living organisms through space;

(4) Long-range studies of benefits and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes;

(5) The preservation of the role of the United States as a leader in aeronautical and space science.

1958 Act (3)

(6) Coordination between civil and military space agencies; sharing technologies

(7) Cooperation by the United States with other nations and groups of nations in work done and in the peaceful application of the results;

(8) Avoiding unnecessary duplication of efforts of U.S. agencies

(9) The preservation of the U. S. preeminent position in aeronautics and space research and technology development.

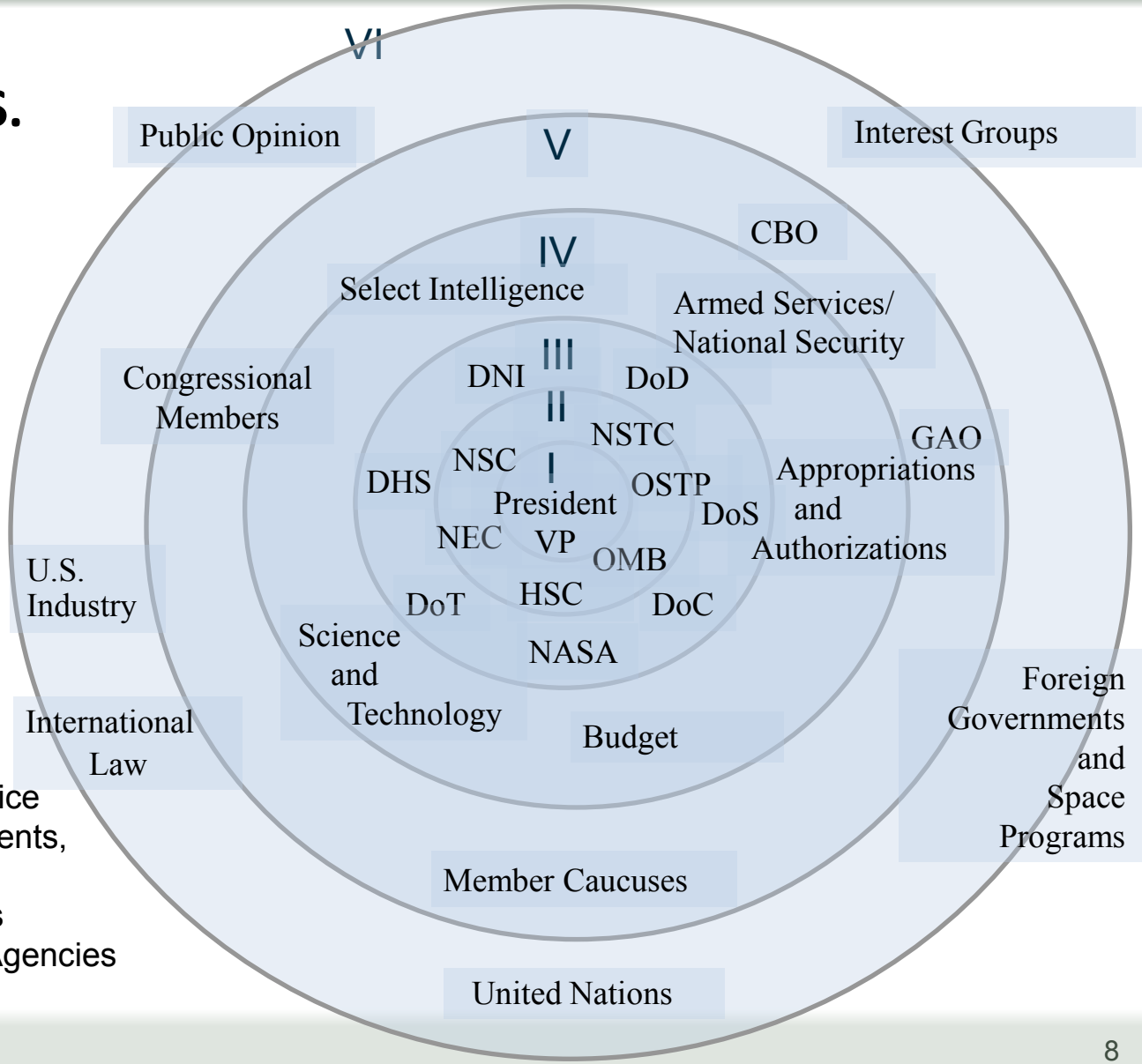
U.S. National Space Policy

- Sets Out National Goals, Objectives, Priorities for programs:
  - GPS
  - Commercial Space Transportation
  - Commercial Remote Sensing
  - Space science
  - Space Exploration Program
  - National Security
  - Other government responsibilities
- Fulfills Congressional Actions
- Establishes Agency & Interagency Responsibilities

U.S. Policy Context

- Many players and agencies involved
  - Private sector advisory committees, organizations
  - Congressional hearings
  - Interagency working groups established by Executive Directives
  - Policy coordination committee for space
- No single focal point in U.S. Government for space but interagency process
- Changes (e.g., new policy documents) do not happen quickly

A "Hierarchy of Levels" in the U.S. Space Policy Network



I President, personal staff
II White House Executive Office
III Executive Branch Departments, Agencies
IV Congressional Committees
V Congressional Members, Agencies
VI All others

U.S. Agency Space Actors

- Department Of State
  - Export Control
  - Treaties
  - Foreign Policy
- Department Of Defense
- Intelligence Community
- US Trade Representative
- National Oceanic & Atmospheric Admin (NOAA)
- NASA
- US Geological Survey (USGS)
- Federal Aviation Administration (FAA)
- National Security Council (NSC)
- Office of Science & Technology Policy (OSTP)
- Office of Management & Budget (OMB)

Congressional Authority

- House of Representatives & Senate (all elected by direct voting within states)
- Oversight of Agencies by Congressional Committees
  - Are agencies following the Congressional instructions?
- Authorization
  - Sets the limits of funding
- Appropriation (Funding)
  - Sets the amounts available from the federal budget

Major U.S. Space Regulation

- Commercial Remote Sensing: National Oceanic & Atmospheric Administration (NOAA)
- Commercial Space Launch: Federal Aviation Administration (FAA)
- Commercial Satellites: Federal Communications Commission (FCC)

Major 2010 Policy Changes

- Tone is less nationalistic than previous one, recognizes that the U.S. depends on other countries for many aspects of space activities
- Emphasis on international cooperation in many areas
- Recognition that the near-Earth space environment is threatened by:
  - Orbital crowding
  - Orbital debris
  - "Wake-up call" from
    - 2007 antisatellite test (creation of debris)
    - 2009 Iridium-Cosmos collision (more debris creation)
- Emphasizes planetary defense from Near Earth Objects

Example of Change of Tone

- 2006 Policy:
  - "The United States considers space systems to have the right of passage through, and operations in space, without interference. Consistent with this principle, the United States will view purposeful interference with its space systems as an infringement on its rights."
- 2010 Policy:
  - "The United States considers the space systems of all nations to have the right of passage through, and conduct of operations in, space without interference. Purposeful interference with space systems, including supporting infrastructure, will be considered an infringement of a nation's rights."

2010 Policy--Introduction

- Today, benefits of space activities "permeate almost every facet of our lives"
- But, "irresponsible acts in space can have damaging consequences for us all"
- Orbital debris a major threat to future activities
- "All nations have the right to use and explore space, but with this right also comes responsibility"
- U.S. "calls on all nations to work together" to preserve space for benefit of future generations
- Pledge of cooperation with other nations

Policy Principles

1. Shared interest of all nations to act responsibly in space; sustainability, stability and free access to and use of space vital to U.S. national interests
2. Robust and competitive commercial space sector vital to continued progress in space; policy encourages growth of U.S. commercial sector
3. All nations have the right to explore and use space for peaceful purposes and for the benefit of all humanity; "peaceful purposes" allows for space to be used for national and homeland security

Policy Principles, Cont.

5. No national claims of sovereignty over outer space; space systems of all nations have rights of passage through and use of space without interference; Purposeful interference will be considered an infringement of a nation's rights.

6. U.S. will help assure the use of space for all responsible parties; but deter others from interference and attack; defend our space systems and contribute to defense of allied space systems

2010 Policy Goals

- **"Energize competitive domestic industries** to participate in global markets and advance the development of" space technologies
- **"Expand international cooperation** on mutually beneficial space activities"
- **"Strengthen stability in space through:** domestic and international measures to promote safe and responsible operations in space; improved information collection and sharing for space object collision avoidance; protection of critical space systems and supporting infrastructures, with special attention to the critical interdependence of space and information systems; and strengthening measures to mitigate orbital debris."

2010 Policy Goals (cont.)

- **Increase assurance and resilience of mission-essential functions**
- **Pursue human and robotic initiatives** to develop innovative technologies, foster new industries, strengthen international partnerships
- **Improve space-based Earth and solar observation**

Foundational Activities and Capabilities

- Strengthen U.S. Leadership In Space-Related Science, Technology, and Industrial Bases.
- Enhance Capabilities for Assured Access To Space.
- Maintain and Enhance Space-based Positioning, Navigation, and Timing Systems.
- Develop and Retain Space Professionals.
- Strengthen Interagency Partnerships.

International Cooperation

- Strengthen U.S. Space Leadership
- Identify Areas for Potential International Cooperation.
- Develop Transparency and Confidence-Building Measures.

Preserving the Space Environment and the Responsible Use of Space

- Preserve the space environment
- Foster the Development of Space Collision Warning Measures (Space Situational Awareness)

Other Intersector Guidelines

Develop Effective Export Policies

Develop Space Nuclear Power

Radiofrequency Spectrum and Interference Protection

Assurance and Resilience of Mission-Essential Functions

Sector Guidelines--Civil Space

- Space Science, Exploration, and Discovery
  - By 2025, begin crewed missions beyond the moon, including sending humans to an asteroid. By the mid-2030s, send humans to orbit Mars and return them safely to Earth;
  - Continue operation of the ISS
  - Seek partnerships with the private sector for commercial spaceflight
  - Implement a new space technology development and test program

Civil Space Guidelines

- Space Science, Exploration, and Discovery (cont.)
  - Conduct research and development in support of next-generation launch systems
  - Maintain a sustained robotic presence in the solar system to: conduct scientific investigations of other planetary bodies; demonstrate new technologies; and scout locations for future human missions;
  - Continue a strong program of space science for observations, research, and analysis of our Sun, solar system,

Environmental E. O. and Weather

- NASA:
  - Enhance U.S. global climate change research and sustained monitoring capabilities
- NOAA
  - Transition mature research and development Earth observation satellites to long-term operations;
  - Use international partnerships to help sustain and enhance weather, climate, ocean, and coastal observation from space;
  - Be responsible for the requirements, funding, acquisition, and operation of civil operational environmental satellites in support of weather forecasting, climate monitoring, ocean and coastal observations, and space weather forecasting.

Land Remote Sensing

- U. S. Geological Service (USGS)
  - Conduct research on natural and human-induced changes to Earth's land, land cover, and inland surface waters, and manage a global land surface data national archive and its distribution;
  - Determine the operational requirements for collection, processing, archiving, and distribution of land surface data to the United States Government and other users;
  - Be responsible for providing remote sensing information related to the environment and disasters that is acquired from national security space systems to other civil government agencies.

National Security Space Guidelines

- Develop, acquire, and operate space systems to support U.S. national security
- Ensure cost-effective survivability of space capabilities
- Reinvigorate U.S. leadership by promoting technology development and improving industrial capacity
- Develop and implement plans, procedures, techniques, and capabilities to assure critical national security space-enabled missions
  - Options for mission assurance may include … leveraging allied, foreign, and/or commercial space and nonspace capabilities to help perform the mission;

National Security Space Guidelines, cont.

- Maintain and integrate space surveillance, intelligence, and other information to develop accurate and timely space situational awareness (SSA). SSA information shall be used to support national and homeland security, civil space agencies…and commercial and foreign space operations;
- Improve, develop, and demonstrate, in cooperation with … commercial and foreign entities, the ability to rapidly detect, warn, characterize, and attribute natural and man-made disturbances to space systems of U.S. interest

National Security, cont.

- The Secretary of Defense shall:
  - Be responsible for the development, acquisition, operation, maintenance, and modernization of SSA capabilities;
  - Develop capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems;
  - Maintain the capabilities to execute the space support, force enhancement, space control, and force application missions; and
  - Provide for both the defense and intelligence sectors, reliable, affordable, and timely space access for national security purposes.

National Security, Cont.

- The Director of National Intelligence shall:
  - Enhance foundational intelligence collection and single- and all-source intelligence analysis;
  - Develop, obtain, and operate space capabilities to support strategic goals, intelligence priorities, and assigned tasks;
  - Provide robust, timely, and effective collection, processing, analysis, and dissemination of information on foreign space and supporting information system activities;
  - Develop and enhance innovative analytic tools and techniques to use and share information from traditional and nontraditional sources for understanding foreign space-related activities;

National Security, Cont.

- Identify and characterize current and future threats to U.S. space missions;
- Integrate all-source intelligence of foreign space capabilities and intentions with space surveillance information to produce enhanced intelligence products that support SSA;
- Support national defense and homeland security planning;
- Support monitoring, compliance, and verification for transparency and confidence-building measures and, if applicable, arms control agreements; and
- Coordinate on any U.S. radiofrequency surveys from space

Concluding Remarks

- Policy is positive toward international cooperation and forward looking
- Includes civil and intelligence/security direction
- Yet, policy is only so good as the implementation
- Agency actions will be important for success
- Congressional support is needed for success

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QUESTIONS?