



# NATIONAL SPACE TRANSPORTATION POLICY

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# I. Introduction

Space activities are critical to the Nation's technological advancement, scientific discovery, security, and economic growth. As outlined in the *National Space Policy*, the utilization of space has transformed every aspect of society, and the United States remains committed to maintaining its role as the leading space-faring nation. Space transportation capabilities play a vital role in enabling these space activities by providing the United States with access to diverse regions of space.

The U.S. space transportation sector is undergoing a period of change as new actors and capabilities emerge and nontraditional public-private partnerships are established. At the same time, the sector faces challenges to include increased proliferation concerns and international competition. To assure continued leadership in this arena, it is essential that the United States foster more efficient and capable space transportation systems and approaches that can address such challenges and enable new activities and discoveries in and from space.

Maintaining an assured capability to meet United States Government needs, while also taking the necessary steps to strengthen U.S. competitiveness in the international commercial launch market, is important to ensuring that U.S. space transportation capabilities will be reliable, robust, safe, and affordable in the future. Among other steps, improving the cost effectiveness of U.S. space transportation services could help achieve this goal by allowing the United States Government to invest a greater share of its resources in other needs such as facilities modernization, technology advancement, scientific discovery, and national security. Further, a healthier, more competitive U.S. space transportation industry would facilitate new markets, encourage new industries, create high technology jobs, lead to greater economic growth and security, and would further the Nation's leadership role in space.



## II. Goals

The overarching goal of this policy is for the United States to have assured access to diverse regions of space, from suborbital to Earth's orbit and deep space, in support of civil and national security missions.

For the purpose of this policy, assured access is defined as sufficiently robust, responsive, and resilient space transportation capabilities that are available to enable and advance civil and national security missions. The capacity to provide such access resides partly within the United States Government and, increasingly, within the U.S. private sector, which offers space transportation services and capabilities for the United States Government and commercial applications.

In support of this goal, the United States shall seek to foster and ensure the availability of domestic space transportation capabilities that are reliable, efficient, affordable, innovative, and competitive. In particular, United States Government departments and agencies, within their authorized capacity, shall:

- Promote and maintain a dynamic, healthy, and efficient domestic space transportation industrial base;
- Encourage and facilitate the U.S. commercial space transportation industry to increase industry robustness and cost effectiveness, foster innovation-driven entrepreneurship and international competitiveness, and benefit the U.S. economy;
- Conduct and promote technology research and development activities to improve the affordability, reliability, performance, safety, and responsiveness of U.S. space transportation capabilities, while increasing collaboration and coordination among departments and agencies;
- Enable the capabilities to support human space transportation activities to and beyond low Earth orbit, including services to and from the International Space Station and the development of a deep-space-capable transportation system; and
- Foster the development of U.S. commercial spaceflight capabilities serving the emerging non-governmental human spaceflight market.

All actions undertaken by departments and agencies in implementing this Directive shall be within the overall resource and policy guidance provided by the President; subject to the availability of appropriations; consistent with U.S. law and regulations, treaties, and other international agreements to which the United States is party, other applicable international law, U.S. national security requirements, U.S. foreign policy, and National Space Policy; and in accordance with the Presidential Memorandum on Transparency and Open Government.



## III. Sector Guidelines

### Civil and National Security Space Guidelines

The Administrator of the National Aeronautics and Space Administration (NASA) and the Secretary of Defense, as the launch agents for civil and national security space missions, respectively, shall:

- Assure access to space for United States Government departments and agencies, taking into account risk management, affordability, competition among providers, and measures for enhancing transparency regarding United States Government space transportation needs;
- Rely upon U.S.-manufactured space transportation vehicles as the foundation for access to space;
- Acquire space transportation capabilities and services, and ensure the ability to develop, operate, and enhance space transportation-related capabilities, infrastructure, and support activities; and
- Work with each other and other departments and agencies, and with the private sector, as appropriate, to pursue research and technology development activities regarding alternative launch capabilities to improve responsiveness, resiliency, and cost effectiveness for future space launch alternatives.

In support of civil space programs and activities, including human and robotic spaceflight for exploration, scientific, operational, and other civil purposes, the Administrator of NASA shall:

- Develop, in support of U.S. space exploration goals, the transportation-related capabilities necessary to support human and robotic exploration to multiple destinations beyond low-Earth orbit, including an asteroid and Mars. Such capabilities include a heavy-lift space transportation system, crew vehicles, and other related capabilities such as in-space refueling technologies and more efficient, advanced in-space transportation systems. These development efforts shall seek to identify and implement measures to enhance the long-term affordability and sustainability of this exploration initiative; and
- Implement partnerships with the private sector to develop safe, reliable, and cost effective commercial spaceflight capabilities for the transport of crew and cargo to and from the International Space Station and low-Earth orbit, consistent with safety and mission requirements and taking into account practical means to address technical and programmatic risk.

In support of national security space programs and activities, the Secretary of Defense shall:

- Ensure, to the maximum extent practicable, the availability of at least two U.S. space transportation vehicle families capable of reliably launching national security payloads; and
- Develop, in cooperation with other departments and agencies as appropriate, launch concepts, techniques, and technologies needed for augmentation or rapid restoration of national security space capabilities during a time of crisis, conflict, or in the event of a launch system failure.

Departments and agencies shall explore the use of hosted payload arrangements, secondary payload launches, and other ride-sharing opportunities when planning space-based missions to meet United States Government requirements.

U.S. commercial space transportation capabilities that demonstrate the ability to launch payloads reliably will be allowed to compete for United States Government missions on a level playing field, consistent with established interagency new entrant certification criteria. Any changes to these new entrant criteria shall be coordinated with the Assistant to the President and National Security Advisor and Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy before they may take effect.

## Commercial Space Guidelines

The United States Government remains committed to encouraging and facilitating a viable, healthy, and competitive U.S. commercial space transportation industry. Within authorized capacities, departments and agencies shall:

- Purchase and use U.S. commercial space transportation capabilities and services and facilitate multiple U.S. commercial providers of space transportation services across a range of launch vehicle classes, to the maximum extent practicable;
- Modify, through mutually acceptable arrangements, U.S. commercial space transportation capabilities and services to meet United States Government requirements when existing capabilities and services do not fully meet these requirements and the potential modification represents a more cost-effective and timely acquisition approach for the United States Government;
- Refrain from conducting United States Government space transportation activities that preclude, discourage, or compete with U.S. commercial space transportation activities, unless required by national security or public safety;
- Ensure availability of United States Government space transportation technologies, capabilities, and facilities for non-federal use on a reimbursable, noninterference, equitable, and predictable basis to the maximum practical extent, consistent with applicable law and national security;
- Cultivate increased technological innovation and entrepreneurship in the U.S. commercial space transportation sector through the use of incentives such as nontraditional acquisition arrangements, competition, and prizes;
- Encourage the purchase and use of U.S. commercial space transportation services and capabilities in international trade and cooperative government activities;
- Provide for the private sector retention of technical data rights in acquiring space transportation capabilities, limited only to the extent necessary to meet United States Government needs;
- Facilitate U.S. commercial industry access to available public data and lessons learned related to human spaceflight; and
- Pursue policy, regulatory, and other measures to foster the development of U.S. commercial spaceflight capabilities serving the emerging nongovernmental human spaceflight market.

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Such measures should take into account public safety, policy and international commitments, industry and technological advancements, and commercial orbital and suborbital space transportation capabilities and activities. These measures should leverage the nongovernmental human spaceflight market to support United States Government requirements for scientific research, technology demonstrations, and risk reduction.

The Secretaries of Commerce and Transportation shall encourage, facilitate, and promote U.S. commercial space transportation activities, including nongovernmental human spaceflight.

The Secretary of Transportation is responsible for authorizing and providing safety oversight for non-federal launch and reentry operations and for the operation of non-federal launch and reentry sites. In performing these responsibilities, the Secretary of Transportation shall:

- Coordinate with the Secretary of Defense, the Administrator of NASA, and other appropriate heads of departments and agencies. Such coordination shall include work to establish and/or refine common public safety requirements and other common standards, as applicable, for launches from or reentries to Federal, state, and commercial sites;
- Develop, in coordination with the Administrator of NASA, a comprehensive, efficient approach to the regulatory oversight of commercial spaceflight capabilities transporting United States Government and United States Government-sponsored crews safely to and from orbit — these coordination efforts shall strive to avoid unnecessary overlap or undue burden; and
- Execute exclusive authority, consistent with existing statutes and executive orders, to address orbital debris mitigation practices for U.S.-licensed commercial launches, to include launch vehicle components such as upper stages, through its licensing procedures.

In addition, the Secretary of Transportation and other appropriate department and agency heads, shall:

- Seek to ensure that the regulatory environment for licensing commercial space transportation activities is timely and responsive, and addresses current market and industry developments;
- Support continuation of the current liability risk-sharing regime for U.S. commercial space transportation activities, including provisions for the conditional payment of excess third-party claims by the United States Government; and
- Advocate internationally for the adoption of United States Government safety regulations, standards, and licensing measures to enhance global interoperability and safety of international commercial space transportation activities.



## IV. Cross-Sector Guidelines

### Space Launch Ranges

The Secretary of Defense and the Administrator of NASA shall operate the Federal launch bases and ranges in a manner that accommodates users from all sectors. Departments and agencies, consistent with their responsibilities and in consultation with private sector and state entities as appropriate, shall:

- Enhance the operational efficiency, capacity, responsiveness, and cost effectiveness of Federal space launch infrastructure, including investing in the modernization of current infrastructure to meet evolving space transportation needs and capabilities, and seeking to improve current launch range scheduling procedures and practices;
- Encourage private sector and state and local government investment and participation in the development, improvement, and sustainment of space infrastructure, including both Federal launch and reentry sites, as well as those operated and maintained by private, state, and local entities; and
- Provide stable and predictable access to United States Government space launch bases and ranges, and other related government facilities and services, for commercial launch and reentry purposes on a direct-cost basis or other agreed partnership. The United States Government will reserve the right to use such facilities and services on a priority basis to meet national security and critical civil mission requirements.

### Space Transportation Technology Development

Departments and agencies, consistent with their responsibilities, and working collaboratively with U.S. non-federal entities as appropriate, shall:

- Support research and development activities aimed at improving the reliability, responsiveness, performance, and cost effectiveness of current and future U.S. space transportation systems, which may address enhancements at either the component or integrated system level, to include next-generation space launch propulsion systems for first- and upper-stage applications, reusable space transportation capabilities, and solar electric propulsion;
- Conduct and promote research and development of advanced, nontraditional, in-space transportation capabilities, including propulsion that could expand the reach, increase the flexibility, reduce mission transit times, and lower the cost of future space missions;
- Establish mechanisms or other measures to increase collaboration and coordination among departments and agencies involved in space transportation-related research and development;
- Cooperate with the Secretary of Energy, and other department and agency heads as appropriate, in pursuing potential research and development activities regarding space nuclear power or nuclear propulsion technologies; and



- Consider international cooperation in space transportation technology research and development efforts, consistent with U.S. laws, international obligations and commitments, and foreign policy and national security interests.

## **U.S. Space Transportation Industrial Base**

To promote a healthy and efficient United States Government and private sector space transportation industrial base, departments and agencies shall:

- Make space transportation policy and programmatic decisions in a manner that considers the health of the U.S. space transportation industrial base; and
- Pursue measures such as public-private partnerships and other innovative acquisition approaches that promote affordability, industry planning, and competitive capabilities, infrastructure, and workforce.

## **Nonproliferation and Excess Intercontinental Ballistic Missile Assets**

To prevent the proliferation of missile technology and limit the adverse impact of use of excess ballistic missiles on U.S. space transportation capabilities:

- Excess U.S. ballistic missiles shall either be retained for government use or destroyed. Departments and agencies may use such assets to launch payloads into orbit on a case-by-case basis, consistent with applicable law, national security objectives, and the approval of the Secretary of Defense, when the following conditions are met: (1) the payload supports the sponsoring agency's mission; (2) such use is consistent with the obligations and commitments of the United States under treaties, international agreements, or arrangements in which the United States is a party or participant, including the Missile Technology Control Regime (MTCR) guidelines, the New Strategic Arms Reduction Treaty, and the Intermediate Nuclear Forces Treaty; and (3) the sponsoring agency certifies that such use is cost effective for the United States Government compared to the use of available U.S. commercial space transportation services that would also meet mission requirements, including performance, schedule, and risk, and limits the impact on the U.S. space transportation industry;
- The United States Government encourages other nations that possess excess ballistic missiles to limit their use to government purposes only or to destroy them. The United States Government will consider on a case-by-case basis requests from U.S. companies to use foreign excess ballistic missiles for space transportation purposes. Any such use must be in conformity with arms control agreements, U.S. nonproliferation policies, U.S. technology transfer policies, and the MTCR guidelines; and
- The United States will maintain its general policy of not supporting the development or acquisition of space transportation systems in non-MTCR countries. Consistent with United States Government nonproliferation policies, the United States will also not encourage new MTCR-country space transportation programs. The United States will work to stem the flow of advanced space technology or expertise to unauthorized parties. Departments and agencies are responsible for protecting against adverse technology transfer in the conduct of their programs.

## International Collaboration

International collaboration in mutually beneficial space transportation-related activities is an important element of United States Government programs and plans. Such collaboration must be consistent with U.S. law and regulations, national security and foreign policy interests, treaty obligations and international commitments, and nonproliferation and export control policies.

United States Government payloads shall be launched on vehicles manufactured in the United States unless an exemption is coordinated by the Assistant to the President and National Security Advisor and the Assistant to the President for Science and Technology and Director of the Office of Science and Technology Policy through an interagency process. Consistent with interagency standards and coordination guidelines, such an exemption is not required for United States Government use of foreign launch vehicles to support:

- No-exchange-of-funds agreements involving international scientific programs, launches of scientific instruments on foreign spacecraft or other cooperative government-to-government agreements;
- Launches of secondary technology demonstrator or scientific payloads for which no U.S. launch service is available. A secondary payload is an independent, typically smaller spacecraft relative to the primary spacecraft, but is dependent on the primary spacecraft's launch vehicle, schedule, and other launch parameters to achieve orbit; or
- Hosted payload arrangements on spacecraft not owned by the United States Government. A hosted payload is a sensor or instrument that is integrated to a host spacecraft and dependent upon one or more of the host spacecraft's subsystems for functionality.

The United States Government shall consider, on a case-by-case basis, requests to launch foreign space launch vehicles in the United States for commercial purposes, including exhibitions and demonstrations.

The use of foreign components or technologies and the participation of foreign governments and entities, in current and future U.S. space transportation capabilities, are permitted on a case-by-case basis. The sponsoring department or agency shall assess mission impact of factors such as potential delays or disruptions in receipt of foreign-produced systems, components, technology, or expertise.



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