

(b) “Space weather” means variations in the space environment between the Sun and Earth (and throughout the solar system) that can affect technologies in space and on Earth. The primary types of space weather events are solar flares, solar energetic particles, and geomagnetic disturbances.

(c) “Solar flare” means a brief eruption of intense energy on or near the Sun’s surface that is typically associated with sunspots.

(d) “Solar energetic particles” means ions and electrons ejected from the Sun that are typically associated with solar eruptions.

(e) “Geomagnetic disturbance” means a temporary disturbance of Earth’s magnetic field resulting from solar activity.

(f) “Critical infrastructure” has the meaning provided in section 1016(e) of the USA Patriot Act of 2001 (42 U.S.C. 5195c(e)), namely systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.

(g) “Sector-Specific Agency” means the agencies designated under PPD-21 of February 12, 2013 (Critical Infrastructure Security and Resilience), or any successor directive, to be responsible for providing institutional knowledge and specialized expertise as well as leading, facilitating, or supporting the security and resilience programs and associated activities of its designated critical infrastructure sector in the all-hazards environment.

SEC. 8. *General Provisions.* (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an agency, or the head thereof; or

(ii) the functions of the Director of OMB relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

BARACK OBAMA.

## SUBCHAPTER VIII—AERONAUTICS AND SPACE TECHNOLOGY

### § 18401. Aeronautics research goals

The Administrator should ensure that NASA maintains a strong aeronautics research portfolio ranging from fundamental research through systems research with specific research goals, including the following:

#### (1) Airspace capacity

NASA’s Aeronautics Research Mission Directorate shall address research needs of the Next Generation Air Transportation System, including the ability of the National Airspace System to handle up to 3 times the current travel demand by 2025.

#### (2) Environmental sustainability

The Directorate shall consider and pursue concepts to reduce noise, emissions, and fuel consumption while maintaining high safety standards and shall pursue research related to alternative fuels.

#### (3) Aviation safety

The Directorate shall proactively address safety challenges with new and current air vehicles and with operations in the Nation’s current and future air transportation system.

(Pub. L. 111–267, title IX, §902, Oct. 11, 2010, 124 Stat. 2835.)

### § 18402. Research collaboration

#### (a) Department of Defense

The Administrator shall continue to coordinate with the Secretary of Defense, through the National Partnership for Aeronautics Testing, to develop and implement joint plans for those elements of the Nation’s research, development, testing, and engineering infrastructure that are of common interest and use.

#### (b) Federal Aviation Administration

The Administrator shall continue to coordinate with, and work closely with, the Administrator of the Federal Aviation Administration, under the framework of the Senior Policy Council, in development of the Next Generation Air Transportation Program. The Administrator shall encourage the Council to explore areas for greater collaboration, including areas where NASA can help to accelerate the development and demonstration of NextGen technologies.

(Pub. L. 111–267, title IX, §903, Oct. 11, 2010, 124 Stat. 2835.)

### § 18403. Goal for Agency space technology

It is critical that NASA maintain an Agency space technology base that helps align mission directorate investments and supports long term needs to complement mission-directorate funded research and support, where appropriate, multiple users, building upon its Innovative Partnerships Program and other partnering approaches.

(Pub. L. 111–267, title IX, §904, Oct. 11, 2010, 124 Stat. 2836.)

### § 18404. National space technology policy

#### (a) In general

The President or the President’s designee, in consultation with appropriate Federal agencies, shall develop a national policy to guide the space technology development programs of the United States through 2020. The policy shall include national goals for technology development and shall describe the role and responsibilities of each Federal agency that will carry out the policy. In developing the policy, the President or the President’s designee shall utilize external studies that have been conducted on the state of United States technology development and have suggested policies to ensure continued competitiveness.

#### (b) Content

(1) At a minimum, the national space technology development policy shall describe for NASA—

(A) the priority areas of research for technology investment;

(B) the basis on which and the process by which priorities for ensuing fiscal years will be selected;

(C) the facilities and personnel needed to carry out the technology development program; and

(D) the budget assumptions on which the policy is based, which for fiscal years 2011,

2012, and 2013 shall be the authorized level for NASA's technology program authorized by this chapter.

(2) The policy shall be based on the premise that the Federal Government has an established interest in conducting research and development programs that help preserve the role of the United States as a global leader in space technologies and their application.

(3) CONSIDERATIONS.—In developing the national space technology development policy, the President or the President's designee shall consider, and include a discussion in the report required by subsection (c), of the following issues:

(A) The extent to which NASA should focus on long term, high-risk research or more incremental technology development, and the expected impact of that decision on the United States economy.

(B) The extent to which NASA should address military and commercial needs.

(C) How NASA will coordinate its technology program with other Federal agencies.

(D) The extent to which NASA will conduct research in-house, fund university research, and collaborate on industry research and the expected impact of that mix of funding on the supply of United States workers for industry.

(4) CONSULTATION.—In the development of the national space technology development policy, the President or the President's designee shall consult widely with academic and industry experts and with other Federal agencies. The Administrator may enter into an arrangement with the National Academy of Sciences to help develop the policy.

**(c) Report**

**(1) Policy**

Not later than 1 year after October 11, 2010, the President shall transmit a report setting forth national space technology policy to the appropriate committees of Congress and to the Senate Committee on Appropriations and the House of Representatives Committee on Appropriations.

**(2) Implementation**

Not later than 60 days after the President transmits the report required by paragraph (1) to the Congress, the Administrator shall transmit a report to the same committees describing how NASA will carry out the policy.

(Pub. L. 111-267, title IX, §906, Oct. 11, 2010, 124 Stat. 2836.)

**§ 18405. Commercial Reusable Suborbital Research Program**

**(a) In general**

The report of the National Academy of Sciences, Revitalizing NASA's Suborbital Program: Advancing Science, Driving Innovation and Developing Workforce, found that suborbital science missions were absolutely critical to building an aerospace workforce capable of meeting the needs of current and future human and robotic space exploration.

**(b) Management**

The Administrator shall designate an officer or employee of the Space Technology Program to act as the responsible official for the Commercial Reusable Suborbital Research Program in the Space Technology Program. The designee shall be responsible for the development of short- and long term strategic plans for maintaining, renewing and extending suborbital facilities and capabilities.

**(c) Establishment**

The Administrator shall establish a Commercial Reusable Suborbital Research Program within the Space Technology Program that shall fund the development of payloads for scientific research, technology development, and education, and shall provide flight opportunities for those payloads to microgravity environments and suborbital altitudes. The Commercial Reusable Suborbital Research Program may fund engineering and integration demonstrations, proofs of concept, or educational experiments for commercial reusable vehicle flights. The program shall endeavor to work with NASA's Mission Directorates to help achieve NASA's research, technology, and education goals.

**(d) Report**

The Administrator shall submit a report annually to the appropriate committees of Congress describing progress in carrying out the Commercial Reusable Suborbital Research program, including the number and type of suborbital missions planned in each fiscal year.

**(e) Authorization**

There are authorized to be appropriated to the Administrator \$15,000,000 for each of fiscal years 2011 through 2013 to carry out this section.

(Pub. L. 111-267, title IX, §907, Oct. 11, 2010, 124 Stat. 2837.)

SUBCHAPTER IX—EDUCATION

**§ 18421. Study of potential commercial orbital platform program impact on science, technology, engineering, and mathematics**

A fundamental and unique capability of NASA is in stimulating science, technology, engineering, and mathematics education in the United States. In ensuring maximum use of that capability, the Administrator shall carry out a study to—

(1) identify the benefits of and lessons learned from ongoing and previous NASA orbital student programs including, at a minimum, the Get Away Special (GAS) and Earth Knowledge Acquired by Middle School Students (EarthKAM) programs, on science, technology, engineering, and mathematics education;

(2) assess the potential impacts on science, technology, engineering, and mathematics education of a program that would facilitate the development of scientific and educational payloads involving United States students and educators and the flights of those payloads on commercially available orbital platforms, when available and operational, with the goal