S 1317

National Aeronautics and Space Administration Authorization Act of 2013

Congress: 113 (2013–2015, Ended)
Chamber: Senate
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Sponsor

Name: Sen. Nelson, Bill [D-FL]
Party: Democratic • **State:** FL • **Chamber:** Senate

Cosponsors (1 total)

Cosponsor	Party / State	Role	Date Joined
Sen. Rockefeller, John D., IV [D-WV]	D · WV		Jul 17, 2013

Committee Activity

Committee	Chamber	Activity	Date
Commerce, Science, and Transportation Committee	Senate	Reported By	Dec 10, 2014

Subjects & Policy Tags

Policy Area:

Science, Technology, Communications

Related Bills

Bill	Relationship	Last Action
113 HR 4412	Related bill	**Jun 23, 2014:** Received in the Senate and Read twice and referred to the Committee on Commerce, Science, and Transportation.

Summary (as of Dec 10, 2014)

National Aeronautics and Space Administration Authorization Act of 2013 - **Title I : Authorization of Appropriations** - (Sec. 101) Authorizes appropriations for FY2014-FY2016 to the National Aeronautics and Space Administration (NASA) for: (1) exploration, (2) space operations, (3) science, (4) aeronautics, (5) space technology, (6) education, (7) cross-agency support programs, (8) construction and environmental compliance and restoration, and (9) the Inspector General.

Title II: Human Space Flight Exploration and Operations - **Subtitle A: Exploration** - (Sec. 201) Reaffirms that the long-term goal of the human space flight and exploration efforts of NASA shall be to expand permanent human presence beyond low-Earth orbit and to do so, where practical, in a manner involving international partners.

Amends the National Aeronautics and Space Administration Authorization Act of 2010 to make it a key objective of the United States to achieve human exploration of Mars, including the establishment of a capability for human habitation on the surface of Mars. Directs NASA to submit to Congress a strategy to achieve such objective through a series of successive, free-standing, but complementary missions making robust use of cis-lunar space and employing the Space Launch System, Orion (multi-purpose vehicle), and other capabilities under titles III, IV, V, and IX of such Act.

Requires NASA, in developing the strategy, to include

- the utility of an expanded human presence in cis-lunar space toward enabling missions to various lunar orbits, the lunar surface, asteroids, the Mars system, and other destinations of interest for future human exploration and development;
- the utility of an expanded human presence in cis-lunar space for economic, scientific, and technological advances;
- the opportunities for collaboration with international partners, private industry, and other federal agencies, including missions relevant to national security or scientific needs;
- a range of exploration mission architectures and approaches for the missions identified in this paragraph; and
- standards for ensuring crew health and safety, including limits regarding radiation exposure and countermeasures necessary to meet those limits, means and methods for addressing urgent medical conditions or injuries, and other such safety, health, and medical issues that can be anticipated in the conduct of those missions.

Requires the Administrator of NASA, in identifying opportunities for collaboration with other federal agencies, in collaboration with the Secretary of Defense (DOD) and the Director of National Intelligence, to include a discussion of the work, cost, and schedule required to enable and utilize a cargo variant of the Space Launch System, including the 70-, 105-, and 130-metric ton configurations, with both a 5-meter or 8-meter faring.

Requires the strategy to include: (1) technical information as needed to identify interest from the scientific and national security communities, and (2) an assessment of the Space Launch System to enable and sustain near-Earth object surveillance of potentially Earth-threatening objects for the purpose of planetary protection.

(Sec. 202) Declares that it is U.S. policy that the exploration ground systems to process and launch the Space Launch System, Orion, and related exploration elements, and the 21st Century Space Launch Complex to enable and facilitate civil, defense, and private launches are complimentary efforts to modernize infrastructure, reduce costs, and maintain capabilities for current and future missions.

Specifies that NASA, in executing such programs: (1) may not exclude the ability of exploration ground systems to support efforts with respect to the elements to be included in the NASA launch support and infrastructure modernization program; (2) shall allow for cost-sharing opportunities by providing multi-use systems and capabilities to current and

future users of the 21st Century Space Launch Complex through modernization, refurbishment, or development of infrastructure; and (3) shall pursue, in collaboration with specified entities, capabilities and investments that support multiple entities to advance NASA's current and future missions and benefit NASA by creating new partnerships.

Instructs NASA to continue to improve launch infrastructure at U.S. facilities launching vehicles to resupply the International Space Station (ISS) in order to ensure continuous, timely, redundant, and efficient access to the ISS. Requires the budget materials for NASA in each budget submitted by the President for a fiscal year to specify the amount required for NASA for that fiscal year for such purposes.

(Sec. 203) Directs NASA to submit to Congress a plan to engage the public, including science students in elementary and secondary education programs, throughout the United States in naming: (1) NASA's overall deep space human exploration program, and (2) the Space Launch System.

(Sec. 204) Requires NASA to submit a report that updates Congress on the Constellation Space Suit System. Requires such report to include justification as to whether another competition to award contracts for the design, development, certification, production, and sustaining engineering of such space suit system is required to meet the needs of NASA's human exploration program.

Subtitle B: Maximizing ISS Utilization - (Sec. 221) Reaffirms the policy that it shall be the policy of the United States, in consultation with its international partners in the ISS program, to support full and complete utilization of the ISS through at least 2020.

Instructs NASA to ensure that the ISS as a designated national laboratory: (1) remains viable as an element of overall exploration and partnership strategies and approaches; (2) is considered for use by all NASA mission directorates, as appropriate, for technically appropriate scientific data gathering or technology risk reduction demonstrations; and (3) remains an effective, functional vehicle that provides research and test bed capabilities for the United States through 2020, up to 2028, and possibly beyond.

Directs NASA, to determine through analyses and discussions with ISS partners, the feasible and preferred service life of the ISS as a unique scientific, commercial, and exploration-related facility. Requires NASA to submit a report and subsequent reports triennially thereafter, to Congress that include: (1) an assessment of whether ISS operations can be extended to at least 2028; (2) an evaluation of the potential for expanding the use of ISS facilities to accommodate the needs of researchers and other users; and (3) such other information as may be necessary to fully describe the justification for, and feasibility of, extending the service life of the ISS.

(Sec. 222) Amends the National Aeronautics and Space Administration Authorization Act of 2010 to instruct the Administrator to ensure that the liaison function with regard to the management of the ISS national laboratory is implemented in a manner that precludes any conflict of interest between the objectives and activities of the organization with which the Administrator has entered into a cooperative agreement for the management of the laboratory (the ISS management entity) and the NASA organizational entity responsible for the management of the NASA research plan onboard the ISS. Considers such entities to be separate and equal partners.

Requires NASA to report to Congress on: (1) options for expanding NASA's collaboration with its ISS partners, including providing U.S. personnel expanded access to international partner research facilities and coordinating research efforts to minimize the duplication of effort; (2) the potential for increasing ISS crew size to maximize use and applications; and (3) efforts undertaken by NASA and the ISS management entity to enhance collaborative research between NASA and other federal science agencies, such as the National Institutes of Health (NIH) and the National Science Foundation (NSF), and

to expand the use of ISS national laboratory capabilities by federal science agencies.

(Sec. 223) Allows NASA to waive the license reserved by NASA with respect to any invention made by a person in the performance of any non-NASA scientific utilization of the ISS national laboratory, if reservation of the license would substantially inhibit the commercialization of the invention

(Sec. 224) Expresses the sense of Congress that NASA: (1) should continue the development of safe, reliable, and cost effective commercial launch capabilities for the primary purpose of securing domestic access to the ISS as quickly and safely as possible; and (2) should encourage a viable commercial market for those capabilities.

Declares that it is U.S. policy that, to foster the competitive development, operation, and improvement of private space transportation services, service for federal government access to and return from the ISS, whenever feasible, shall be procured via fair and open competition for well-defined, milestone-based, Federal Acquisition Regulation-based contracts under section 201 of the National Aeronautics and Space Administration Authorization Act of 2010.

Requires NASA, in evaluating commercial space transportation service providers: (1) to aim to minimize the life-cycle costs of obtaining transportation services; (2) to assure compliance with all safety and mission assurance requirements; (3) to consider contractor financial investment into the development of transportation capabilities; and (4) for commercial crew transport services, to consider flexibility in design, including sample return capabilities, and to provide a written notification and justification to Congress if the price per seat exceeds the cost negotiated by NASA for crew transport in April 2013.

Requires NASA, in implementing the the U.S. policy stated in this section, to submit to Congress a strategy for transitioning from Space Act Agreements to Federal Acquisition Regulation-based contracts for the procurement of crew transportation services to and from the ISS.

Subtitle C: Other Matters - (Sec. 232) Extends through December 31, 2016, the application deadline for licenses with respect to which the Secretary of Transportation (DOT) is required to pay third-party claims in excess of a commercial space launcher's required insurance coverage.

Allows any contract between NASA and a provider to provide that the United States will indemnify a provider against claims (including reasonable expenses of litigation or settlement) by third parties for death, bodily injury, or loss or damage to property resulting from activities that the contract defines as unusually hazardous or nuclear in nature, but only to the extent that: (1) such claims are not compensated by the provider's liability insurance; and (2) they arise out of the direct performance of the contract.

Require such a contract that provides indemnification to also provide for: (1) notice to the United States of any claim or suit against the provider for death, bodily injury, or loss of or damage to property; and (2) control of or assistance in the defense by the United States, at its election, of that suit or claim.

Requires each provider that is a party to a contract made under this section to have and maintain liability insurance in such amounts as NASA shall require to cover liability to third parties and loss of or damage to property.

Bars the Administrator from indemnifying a provider unless there is a cross-waiver between NASA and the provider as described in the following.

Allows the Administrator, on behalf of the United States, and its departments, agencies, and instrumentalities, to reciprocally waive claims with a provider under which each party to the waiver agrees to be responsible, and agrees to

ensure that its own related entities are responsible, for damage or loss to its property for which it is responsible, or for losses resulting from any injury or death sustained by its own employees or agents, as a result of activities arising out of the performance of the contract.

Prohibits any payment from being made under this section until the Administrator or the Administrator's designee certifies that the amount is just and reasonable.

Allows, upon approval by the Administrator, payments to be made, at the Administrator's election, from: (1) funds obligated for the performance of the contract concerned; (2) funds available for research and development not otherwise obligated; or (3) funds appropriated for such payments.

Prohibits NASA from providing indemnification under this section for an activity that requires a license or permit under title 51 U.S. Code Chapter 509 (relating to commercial space launch activities).

(Sec. 233) Requires NASA to deliver to Congress a review of its current termination liability practices and the benefits of potential alternatives. Requires such report to include: (1) an accounting of the total budget currently held in reserve, by either NASA or a contractor, to cover termination liability for the Space Launch System and Orion programs; and (2) an accounting of the current cost risk of termination liability for such programs. Requires: (1) NASA to submit such report for review by Congress and the Government Accountability Office (GAO), and (2) GAO to deliver to Congress an assessment of the potential for continued improvement by NASA relative to the previous GAO review of NASA termination liability conducted in 2011.

Title III: Science - **Subtitle A: Earth Science** - (Sec. 301) Expresses the sense of Congress that, given the importance of Earth science and Earth observation data, NASA Earth science efforts: (1) should be conducted in coordination with other federal agencies and should be cognizant of international efforts and the needs of the scientific and businesses communities; and (2) whenever feasible, NASA and other federal agencies should consider the potential for reducing costs by purchasing commercially available Earth science data and services while maintaining free and open data policies.

Instructs the Office of Science and Technology Policy (OSTP), in implementing its National Strategy for Earth Observation and in developing a National Plan for Civil Earth Observations, to prioritize federal Earth science and observation investments based on: (1) its assessment of Earth science and observation data requirements; (2) the capability requirements as identified by the National Academies decadal surveys; (3) the projected costs of Earth science missions and data gathering activities; and (4) the projected and available budgets.

Instructs NASA, in prioritizing future Earth science and Earth observation missions and technology development, under the National Plan for Civil Earth Observations and title 51 U.S. Code chapter 201 (provisions relating to the National Aeronautics and Space Program), to consider potential cost-reduction opportunities, including: (1) if feasible, co-locating Earth science sensors on other satellites; and (2) purchasing commercially available services, such as launch access to orbital and sub-orbital space, and Earth science data with free and open data policies.

Requires NASA to continue to develop and integrate the National Institute of Standards and Technology Advanced Radiometer, the Earth Polychromatic Imaging Camera, and related hardware and software onto the Deep Space Climate Observatory.

(Sec. 302) Reaffirms the finding in the Land Remote Sensing Policy Act of 1992, namely, that the continuous collection and utilization of land remote sensing data from space are of major benefit in studying and understanding human impacts

on the global environment, in managing the Earth's natural resources, in carrying out national security functions, and in planning and conducting many other activities of scientific, economic, and social importance.

Directs NASA to use existing studies and data to initiate system definition and procurement of the next global land-imaging system consistent with continuing Earth remote sensing data collection over multi-decades.

Instructs the Administrator to seek partnerships with institutions of higher education and other federal agencies to support education of the next generation of remote sensing engineers, scientists, and analysts.

Subtitle B: Space Science - (Sec. 321) Instructs the Administrator to ensure that the Science Mission Directorate and the Human Exploration and Operations Mission Directorate coordinate in researching and reducing the risks that space exploration beyond low-Earth orbit pose to astronaut health. Requires NASA to provide a report to Congress detailing the results of previous research in this area and in identifying opportunities for future science missions to contribute to the understanding of these risks.

(Sec. 322) Amends the National Aeronautics and Space Administration Authorization Act of 2010 to reaffirm that a balanced and adequately funded set of activities, consisting of research and analysis grants programs, technology development, small, medium, and large space missions, and suborbital research activities, contributes to a robust and productive science program and serves as a catalysis for innovation (currently) and discovery. Urges NASA to set science priorities by following the guidance provided by the scientific community through the National Academies' decadal surveys.

(Sec. 323) Requires NASA, in carrying out biennial reviews within each of the Science divisions to assess the cost and benefits of extending the date of the termination of data collection for those missions that have exceeded their planned mission lifetime. the Instructs the Administrator, in conducting such assessments, to consider: (1) the potential continued benefit of instruments on such missions; and (2) the cost and schedule impacts, if any, of mission extension on other NASA activities and science missions.

Requires NASA, when deciding to extend science missions with an operational component, to consult with the National Oceanic and Atmospheric Administration (NOAA) and any other affected federal agency (and under current law, the potential benefits of instruments on missions that are beyond their planned mission lifetime taken into account).

(Sec. 324) Instructs NASA, in accordance with the priorities established in the most recent decadal survey for planetary science, to ensure the completion of a balanced set of Discovery, New Frontiers, and flagship missions. Authorizes NASA, consistent with this balanced mix of missions and maintaining the continuity of scientific data and steady development of capabilities and technologies, to seek, if necessary, adjustments to mission priorities, schedule, and scope in light of changing budget projections.

Directs NASA, to support its science mission priorities, to invest in a sustained program to develop or mature scientific instrument capabilities, as delineated in the NASA Science Instruments, Observatories, and Sensor Systems Roadmap.

(Sec. 325) Requires the OSTP, in coordination with NASA, the NOAA, and other relevant federal agencies, to deliver to Congress a roadmap for developing and deploying space weather forecasting technologies. Requires such roadmap, at a minimum, to: (1) aim to relieve capability gaps identified by the National Space Weather Program Council review of space weather observing systems, as requested by the National Aeronautics and Space Administration Authorization Act of 2010; and (2) consider ongoing and future requirements for space weather modeling, monitoring, and prediction.

Instructs NASA to update and further develop its technology roadmaps as required to address mitigating a wide range of space weather effects on both satellites and spacecraft.

Directs OSTP to coordinate with relevant federal agencies to propose protocols for communicating and responding to space weather forecasts. Requires such assessment to consider the needs of both government and private sector entities. Requires OSTP to report to Congress on the proposed protocols.

(Sec. 326) Expresses the sense of Congress regarding the James Webb Space Telescope.

(Sec. 327) Directs the Administrator, in collaboration with the Director of the NSF, to arrange with the National Academy of Sciences for a review of suborbital and small orbital science missions, including CubeSat, University Explorer (UNEX), Small Explorer (SMEX), and Venture class missions. Requires NASA and the NSF to report to Congress on such review.

Title IV: Aeronautics - (Sec. 401) Directs NASA to carry out an Advanced Composites Project to accelerate the use of advanced composite materials in aircraft. Requires the Administrator to enter into a public-private partnership between NASA and appropriate private sector entities, to be called the Advanced Composite Consortium, to implement the Project.

Specifies that the partnership to implement the project: (1) may include other federal agencies if the Administrator determines that such agencies' participation will further the purpose of the partnership, and (2) shall coordinate with the Joint Advanced Materials and Structures Center of Excellence of the Federal Aviation Administration (FAA).

States that the purpose of the Project shall be to accelerate the development and certification of advanced composite materials and structures for use in commercial and military aircraft. Requires such partnership to foster collaboration with the private sector and with other federal agencies in order to accomplish the Project's purpose.

Title V: Space Technology - (Sec. 501) Requires NASA, to advance NASA's space exploration and space research goals, to continue a program with responsibility for NASA investments in space technologies and capabilities. Instructs the Administrator to synergize all NASA space technology investments, encourage collaboration in space technology development with academia and industry, and minimize duplication of space technology development efforts across NASA and the private sector unless duplication is required to maintain mission safety, security, or backup capability. Requires NASA to submit to Congress a progress report on the development, testing, and demonstration of the 14 technological areas of the Space Technology Roadmaps.

Directs NASA, in order to do necessary research, to continue and, as appropriate, expand the development of technology payloads that investigate improved capabilities and scientific research. Requires NASA to provide flight opportunities for such payloads to microgravity environments and suborbital altitudes as authorized by the National Aeronautics and Space Administration Authorization Act of 2010.

Prohibits NASA from being required to compile or submit annual reports on the Innovative Partnerships Program.

Title VI: Education - (Sec. 601) Directs NASA to: (1) continue to execute its educational and outreach programs, including providing a wide range of academic research opportunities and engaging the public interest in science, technology, engineering, and mathematics (STEM); (2) continue to collaborate with minority institutions to increase student participation in STEM; and (3) seek partnerships with industry, academia, and with other communities to best respond to the nation's aerospace-related educational and workforce needs.

Directs NASA, to enhance the U.S. STEM education and workforce, to continue to operate the National Space Grant

College and Fellowship program through a national network consisting of a state-based consortium in each state. Requires such program to provide hands-on research, training, and education programs, use measurable outcomes to gauge success, and allow states flexibility in its execution.

Title VII: Other Matters - (Sec. 702) Directs NASA to prepare an updated plan for NASA's near-Earth, space, and deep space communications network and infrastructure. Requires such plan to: (1) identify steps to sustain the existing network and infrastructure; (2) assess the capabilities, including any upgrades, needed to support NASA's programs; (3) identify priorities for how resources should be used to implement the plan; and (4) assess the impact on missions if resources are not secured at the level needed. Requires such plan to be transmitted to Congress.

(Sec. 703) Authorizes NASA, as the Administrator considers necessary, to provide for the medical monitoring, diagnosis, and treatment of a crewmember for conditions that NASA considers associated with human space flight, including scientific and medical tests for psychological and medical conditions.

Defines "crewmember" as: (1) a former NASA astronaut/payload specialist who has flown on at least one space mission; (2) a management NASA astronaut who has flown at least one space mission and is currently employed by the U.S. government; or (3) an active NASA astronaut/payload specialist assigned, waiting assignment, or training for an assignment to a NASA human space flight.

(Sec. 704) Requires NASA to submit to Congress an agency-wide plan to recover and recycle helium, whenever possible, that NASA uses or will use in current, planned, and future, experimentation, tests, launches, and operations. Instructs NASA to consider how modifications, updates, or new lifecycle designs for engines, balloons, airships, or other future programs can be designed or operated to recover and recycle helium.

(Sec. 705) Directs NASA to: (1) ensure the Agency Chief Information Officer has the resources and visibility to oversee agency-wide information technology operations and investments, (2) establish a direct line of report between such Officer and the Administrator, (3) establish a minimum monetary threshold for all agency information technology investments over which such Officer shall have final approval, and (4) consider revisions to the charters of information technology boards and councils that inform information technology investment and operation decisions.

(Sec. 706) Requires NASA, when there is a reasonable cause to believe that the development cost for a major program is likely to exceed the estimate provided in the Baseline Report of the program by 15% or more or a milestone of the program is likely to be delayed by 6 months or more from the date provided for it in the Report, to transmit to Congress the written notification of such cause (currently) and a timeline by which NASA intends to make the determination, report, and analysis concerning such cost or delay. Requires the determination, report, and analysis to be made in accordance with such timeline instead of in accordance with their respective deadlines under current law.

Prohibits NASA from expending funds on a program 18 months after submission of an annual budget request showing that the program's development costs exceed 30% of the estimate provided unless Congress specifically authorizes or appropriates funds for the program. Excludes termination costs.

Requires if the development cost of a program will exceed the estimate provided for the program by more than 30%, then beginning 18 months after NASA transmits the report (currently) or an annual budget request that reflects this growth, NASA shall not expend any additional funds on the program, other than termination costs, unless Congress has subsequently authorized continuation of the program by law.

(Sec. 707) Requires NASA to submit to Congress a plan for retaining, acquiring, or disposing, of the facilities,

laboratories, equipment, test capabilities, and other infrastructure necessary to meet NASA's mandates and its current and future missions.

Directs NASA to establish a capital fund at each of NASA's field centers for the modernization of facilities, laboratories, equipment, and other infrastructure in accordance with the plan. Instructs the Administrator to ensure that any financial savings achieved by closing an outdated or surplus facility at a NASA field center is made available to such field center's capital fund to modernize its facilities, laboratories, equipment, and other infrastructure.

(Sec. 708) Authorizes the Administrator to: (1) enter into an agreement with a covered entity to provide such entity with support and services related to space transportation infrastructure of NASA; and (2) at such entity's request, to include such support and services in the launch and reentry range support requirements of NASA if certain conditions are met.

Authorizes the Administrator to enter into an agreement with a covered entity on a cooperative and voluntary basis to accept contributions of funds, services, and equipment to carry out this section.

Allows any accepted funds, services, or equipment to: (1) be used only for the objectives specified in this section in accordance with the terms of use set forth in the agreement; and (2) requires them to be managed by the Administrator in accordance with NASA regulations.

Requires such an agreement to: (1) address the terms of use, ownership, and disposition of the funds, services, or equipment contributed pursuant to the agreement; and (2) include a provision that the covered entity will not recover the costs of its contribution through any other agreement with the United States.

Requires NASA to submit to Congress annual reports on the funds, services, and equipment accepted and used by NASA under this section.

Defines "covered entity" as a non-federal entity that is organized under U.S. law or of any jurisdiction within the United States and is engaged in commercial space activities.

(Sec. 709) Directs NASA to establish a NASA-wide knowledge management system and to implement industry-standard best practices for capturing, archiving, and retrieving heritage and future information. Makes such information accessible to all NASA employees unless otherwise prohibited because of its classified or sensitive nature.

Requires NASA to submit to Congress a certain knowledge management system report.

Amends the National Aeronautics and Space Administration Authorization Act of 2010 to extend, until September 30, 2016, the prohibition on the implementation of any reduction-in-force or other involuntary separations by NASA of permanent, non-Senior-Executive-Service, civil servant employees.

(Sec. 710) Authorizes NASA to withhold from public disclosure any technical data with aeronautical or space application in the possession of, or under the control of, NASA, if the data may not be exported lawfully outside the United States without an approval, authorization, or license under the Export Administration Act of 1979.

Prohibits NASA from being required to compile or submit the annual audit on export controls compliance under section 126 of the National Aeronautics and Space Administration Authorization Act of 2000.

Actions Timeline

- **Dec 10, 2014:** Committee on Commerce, Science, and Transportation. Reported by Senator Rockefeller with an amendment in the nature of a substitute. Without written report.
- **Dec 10, 2014:** Placed on Senate Legislative Calendar under General Orders. Calendar No. 628.
- **Jul 30, 2013:** Committee on Commerce, Science, and Transportation. Ordered to be reported with an amendment in the nature of a substitute favorably.
- **Jul 17, 2013:** Introduced in Senate
- **Jul 17, 2013:** Read twice and referred to the Committee on Commerce, Science, and Transportation.