2022 NASA Authorization Act Priorities

The Aerospace Industries Association (AIA), representing over 300 aerospace manufacturers and suppliers and more than 2 million U.S. workers, urges Congress to affirm its consistent, bipartisan support for NASA through a comprehensive NASA Authorization Act. In considering an authorization, AIA requests the Congress to authorize and affirm the following elements.

Overall

- Affirm NASA remain a multi-mission agency carrying out its activities in partnership with academia, industry, and international partners under a balanced program of science, aeronautics, space technology, human exploration, and educational activities.
- Recognize U.S. industry as an essential partner in our Nation's science, aviation, and space achievements and that industry capabilities should be leveraged to advance NASA objectives.
- Affirm it is in the American taxpayer's best interest for NASA to allow non-Federal entities to use their space-related facilities on a reimbursable basis and that the agency should allow this to the maximum extent practicable.
- Authorize appropriations at no less than Fiscal Year 2022 appropriations, with real dollar increases across NASA's programs in Fiscal Year 2023 and beyond.

Aeronautics

- Authorize a research and demonstration effort to advance sustainable aviation, including subsonic aircraft, engine design and technology**,** high-rate composites for wings and fuselages, sustainable aviation fuels, future energy sources, and electric and hybrid-electric propulsion that will lead to emissions and noise reductions.
- Authorize new and continued development of experimental aircraft in partnership with industry, including a sustainable aviation subsonic demonstrator and the low-boom flight demonstrator.
- Affirm NASA's role in hypersonics and require a report on NASA research and flight demonstration technologies needed to support U.S. global leadership in hypersonics.
- Affirm NASA's role in advancing urban air mobility research and partnerships.
- Require a report on the Nation's aeronautics workforce, the status of NASA's aeronautical modeling and test facilities, and provide recommendations on future workforce and infrastructure needs.
- Authorize a supply chain modeling and simulation efforts to analyze gaps, needs, risks and scalability considerations to ensure the future aeronautics industry will remain competitive and sustainable.
- Require a report on the national aeronautics research priorities since the last National Academies Decadal Survey of Civil Aeronautics in 2006.
- Affirm development of airspace management concepts and technology to support wildfire mitigation and suppression efforts.

Human Space Exploration and Space Operations

- Authorize NASA's Artemis Moon to Mars program with the goal to send humans to the surface of Mars enabled by human exploration of the cis-lunar vicinity and lunar surface by 2025. Affirm program elements of the Artemis program, including Gateway, Orion Crew Vehicle, Space Launch System, and Exploration Upper Stage, Exploration Ground Systems, including VAB high bays for SLS and Mobile Launcher-2, Human Lander System, Exploration Space Suits, and required ground and communications systems.

- Authorize and expand Gateway Logistics Services to enable dissimilar redundancy for the provision of cargo to Gateway.
- After Artemis III, sustain a cadence of at least one Artemis crewed mission per year to the Moon and to develop and test future Mars transport platforms at the Gateway as appropriate.
- Authorize architecture development for Mars transport systems leveraging the investments made in Artemis and leveraging ISS, Gateway, and commercial platforms to test systems for long-duration deep space travel.
- Authorize development of dissimilar human lunar lander capabilities.
- Affirm the Administration's extension of the International Space Station and accompanying transportation and research activities to 2030.
- Affirm U.S. policy to maintain a continuous U.S. human presence in low Earth orbit with the utilization of dissimilar redundant capabilities for crew transfer to and from low-Earth orbit.
- Authorize NASA's Commercial Low Earth Orbit Destinations (CLD) program and NASA efforts to enable commercial activity in low Earth orbit at levels adequate to meet the programs objectives.
- Require a report on assured crew access to the ISS and future low Earth orbit platforms
- Provide for a transition period of no less than 2 years to ensure the development of a capability that supplements the ISS with the goal of providing further operations in LEO beyond the ISS.
- Identify and develop a plan to address the U.S. government's specific needs for a presence in LEO both leveraging the ISS and future platforms with regard to both U.S. government astronauts, U.S. laboratories and equipment and critical national systems as part of the developing ecosystem in LEO.
- Affirm NASA's Space Communications and Navigation development of its next generation Direct-to-Earth and space-based relay systems, leveraging industry capabilities.
- Authorize the Exploration Systems Development and Space Operations Mission Directorates and require a public report on the organization structure and decision-making framework within and across each mission directorate.
- Require a report on communication requirements, including bandwidth and communications needs to serve current and future scientific and human missions to the Moon and Mars leveraging industry capabilities.
- Direct NASA to use the Venture-Class Acquisition of Dedicated and Rideshare (VADR) program for all eligible smallsat launch procurements, providing new opportunities for science and technology payloads and fostering the U.S. commercial launch market.

Science

- Affirm a balanced set of activities across space science disciplines, including research and analysis programs, technology development, small-, medium-, and large-sized space science missions, and suborbital research activities.
- Affirm the National Academies of Sciences, Engineering, and Medicine Decadal Survey process to develop scientific consensus plans across space science disciplines.
- Affirm the critical importance of completing decadal survey priorities, including the Roman/Wide-Field Infrared Survey Telescope, Mars Sample Return, Europa Clipper, Earth Systems Observatory, and recommendations for increased small satellite use in programs such as Astrophysics Pioneers.
- Affirm the NASA ability to leverage the Space Launch System for payloads and missions that substantially benefit from the unique capabilities of the Space Launch System as established under the U.S. Commercial Space Launch Competitiveness Act.
- Affirm the importance of NASA science and human spaceflight collaboration and authorize the Lunar Discovery and Exploration Program and Commercial Lunar Payload Services programs within NASA Science.

- Affirm the findings of the National Academies Pathways to Discovery in Astronomy and Astrophysics for the 2020s and authorize NASA to create a new Great Observatories Mission and Technology Maturation Program, which would formulate several major overlapping space missions to maintain U.S. leadership in space science. The first mission of these programs should be a large infrared/optical/ultraviolet (IR/O/UV) space telescope capable of searching for life on planets orbiting stars in our galactic neighborhood.
- Authorize microgravity research aboard suborbital and orbital research platforms, including the use of human participants to support NASA-funded research.
- Affirm the expansion of Earth science data use and applications, including leveraging commercial capabilities and partnerships to enhance data sets and data analysis.
- Authorize a dedicated survey mission to accomplish the objectives of the George E Brown Near-Earth Object Survey Act.
- Authorize the Planetary Defense office and require development of a near-earth object and planetary defense roadmap.
- Authorize a Space Weather Research and Applications Program to support research to operations and improve modeling, forecasting, and prediction of space weather phenomena.
- Authorize a data science and management initiative to expand data analytic capabilities.

Space Technology

- Affirm an independent NASA Space Technology Mission Directorate with continued investments in nuclear propulsion and surface power systems; solar electric propulsion demonstrations; small satellite technologies; large scale additive manufacturing; on-orbit servicing, assembly, and manufacturing; in-situ resource utilization; competitively selected technology demonstrations, and the Flight Opportunities Program.
- Affirm development of low enriched uranium in partnership with industry for nuclear propulsion and surface power activities.
- Authorize a flight demonstration of nuclear thermal propulsion by 2027 and support nuclear surface power to enable long-term presence in space and further technologies for nuclear electric propulsion.
- Authorize NASA's On-orbit Servicing, Assembly, and Manufacturing (OSAM) program and ensure continued partnership with industry to expand OSAM technology development and demonstrations, recognizing the innovative commercial technologies and commercially available OSAM services.
- Authorize NASA to conduct research & development for debris remediation technologies, including for active debris removal (ADR) over all TRL levels in partnership with industry.
- Ensure NASA makes investments to expand the capacity and capability of the U.S. space solar cell, panel, and array industrial base, reducing the nation's dependence on foreign suppliers.
- Authorize NASA to carry out activities, including research and development, orbital debris measurement, tracking, modeling, mitigation, remediation, conjunction analysis, and collision avoidance to advance the sustainability of the space environment for the future of civil and commercial activities in space.

Education

- Maintain an independent STEM Engagement program and affirm NASA's role in inspiring, engaging, and educating the nation's future aerospace workforce.

Safety, Support, and Mission Services

- Require a report on NASA's strategic capabilities, including internal infrastructure, facilities, and workforce, and external supporting industrial base, identifying threats and any recommended mitigations to NASA completing its goals and objectives through 2040. The report should include an analysis on the NASA workforce and capabilities maintained as part of NASA's exploration programs and impacts if shifted.
- Authorize Enhanced Use Leasing authority through at least 2030.
- Require a report on spectrum needs and issues for current and future NASA missions and recommend NASA actions to support spectrum allocation, including by commercial entities in support of NASA activities.