COMMITTEE ON
SCIENCE, SPACE
AND TECHNOLOGY
CHAIRMAN BRIAN BABIN

SUBCOMMITTEE ON SPACE AND AERONAUTICS

HEARING CHARTER

"The Future of Low Earth Orbit: From the ISS to Commercial Platforms"

Wednesday, March 25, 2026
10:00 a.m.
2318 Rayburn House Office Building

Purpose

The purpose of this hearing is to examine the planned path toward the next phase of United States space activities in low Earth orbit (LEO). Witnesses will discuss the health and capabilities of the International Space Station (ISS) and the practices used to ensure maximum utilization of the Station for the remainder of its operational lifetime. This hearing will also consider NASA's demand for microgravity research capabilities in its next phase of LEO operations. It will also assess the emergence of the United States private-sector commercial LEO research platforms and consider how NASA intends to support such development and, ultimately, transition from owning and operating the ISS to acting as one of many customers procuring services from such platforms. The hearing will address whether NASA is prepared for this transition and assess the Agency's appropriate role in the evolving LEO domain.

Witnesses

- **Mr. Joel Montalbano,** Acting Associate Administrator for Space Operations, National Aeronautics and Space Administration
- **Mr. Dave Cavossa,** President, Commercial Space Federation
- **Mr. Charlie Precourt,** Member, Aerospace Safety Advisory Panel

Overarching Questions

- What are NASA's plans for the future of human spaceflight in LEO, and how will NASA transition from the ISS to commercial space stations?
- What are NASA's plans for maintaining, operating, and deorbiting the ISS?

Background

For over 25 years, the United States has maintained a continuous human presence in low-Earth orbit (LEO) through the International Space Station (ISS). As it approaches the end of its design lifespan, NASA plans to decommission the ISS by the end of 2030. Rather than replace it with another government-owned and -operated platform, NASA seeks to support the development of commercial space stations from which the Agency can purchase services to meet its scientific and research needs in LEO. This transition is the latest step in more than two decades of NASA efforts to enable the development of a LEO economy.

International Space Station

The ISS is the largest human-made object in Earth orbit, weighing over 900,000 pounds and having a habitable volume of more than 13,000 cubic feet.[1] Construction began in 1998 with the launches of the Russian Zarya and United States Unity modules, which were later mated using the robotic arm on the Endeavour orbiter during the STS-88 mission. Assembly was completed in 2011 after 42 missions, resulting in a platform capable of supporting a seven-person crew for long-duration stays and enabling a wide range of space research activities.[2]

The ISS partnership comprises five national space agencies: NASA, Roscosmos (Russia), the Japan Aerospace Exploration Agency (JAXA), the Canadian Space Agency (CSA), and the European Space Agency (ESA). NASA has signed Memoranda of Understanding (MoUs) with each partner to carry out operations.[3] International collaboration is governed by the Intergovernmental Agreement (IGA), an international treaty among the 15 member countries of the five partner agencies.[4]

ISS Structure & Lifespan

The ISS consists of 43 modules and elements, including laboratories, habitation spaces, docking ports and airlocks, and a range of externally mounted hardware. These components are divided between two segments: the U.S. Orbital Segment (USOS) and the Russian Orbital Segment (ROS). The United States and Russia are Station's primary hardware owners and operators, with NASA providing power capabilities and Roscosmos providing propulsion. ESA, JAXA, and

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[1] NASA, *ISS, Station and Figures*, https://www.nasa.gov/international-space-station/space-station-facts-and-figures/
[2] John Uri, *25 Years Ago: NASA, Partners Begin Space Station Assembly*, (Dec. 06, 2023), https://www.nasa.gov/history/25-years-ago-nasa-partners-begin-space-station-assembly/
[3] European Space Agency, *Science & Exploration, International Space Station legal framework*, https://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/International_Space_Station/International_Space_Station_legal_framework
[4] U.S. Department of State, *Agreement Between the UNITED STATES OF AMERICA and OTHER GOVERNMENTS*, (Jan. 29, 1998), https://www.state.gov/wp-content/uploads/2019/02/12927-Multilateral-Space-Space-Station-1.29.1998.pdf

CSA have also contributed key elements, including the Columbus and Kibo modules and a robotic arm, respectively.[5]

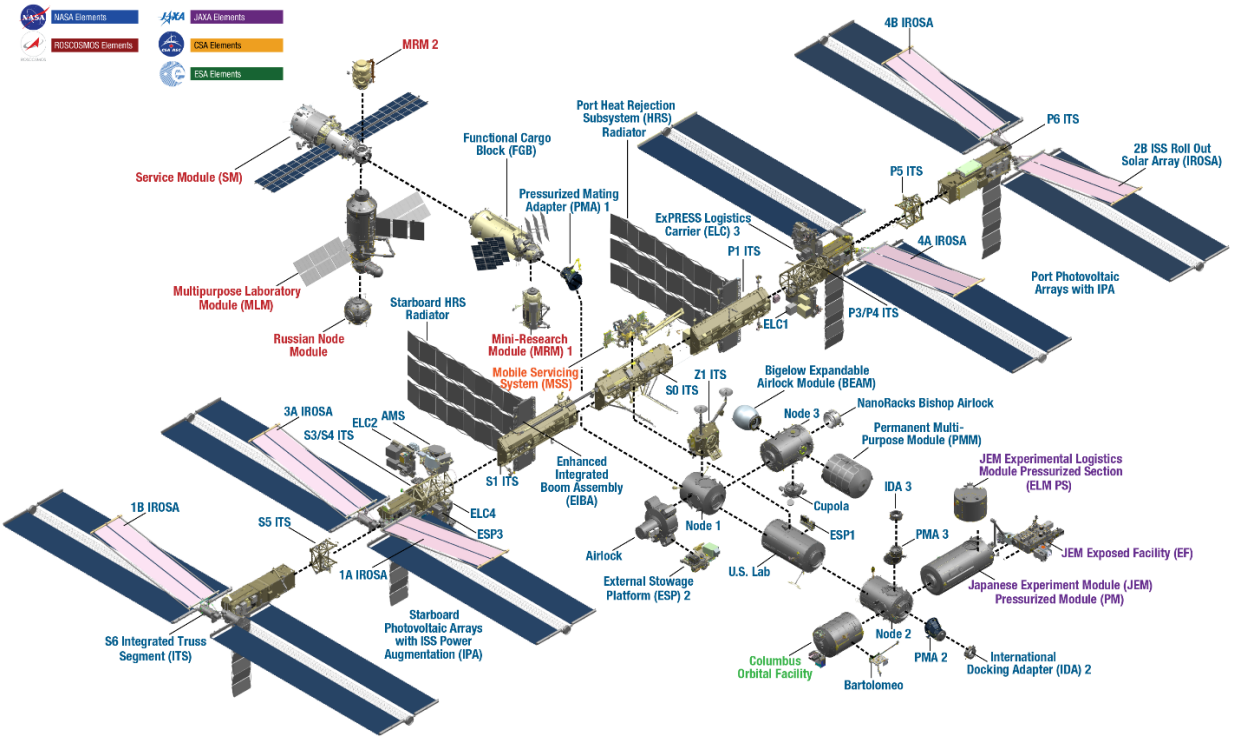

Figure 1: Diagram of the International Space Station elements and structure. [Source: NASA]

The ISS was designed for a 15-year design life for its core elements, and NASA originally planned to retire the station in 2015. Congress has since extended station operations several times, most recently in the NASA Authorization Act of 2022, which is part of the CHIPS and Science Act and requires operations to continue through the end of 2030.[6] The partner space agencies have largely aligned with these extensions; JAXA, ESA, and CSA have all approved their respective ISS operations through 2030. Russia has confirmed its support for the ISS through 2028, and NASA officials report that Roscosmos attributes the two-year difference to its agency planning processes.[7]

As the ISS ages, NASA and its partners face technical challenges and growing risks. The most notable risk is a microcrack in the Russian Service Module vestibule (PrK) hull, which has caused long-term air leaks. While a sealant has been applied to the interior PrK hull to stop the

[5] NASA, *ISS, Station Assembly Elements*, https://www.nasa.gov/international-space-station/international-space-station-assembly-elements/

[6] *See* Title VII of the CHIPS Act of 2022, Pub. L. No. 117-167 (2022); *see also* NASA Office of Inspector General, *NASA's Management of the International Space Station and Efforts to Commercialize Low Earth Orbit*, (Nov. 30, 2021), https://oig.nasa.gov/wp-content/uploads/2024/02/IG-22-005.pdf

[7] Jeff Foust, SpaceNews, *Russia commits to ISS extension to 2028*, https://spacenews.com/russia-commits-to-iss-extension-to-2028/

air leaks, the root cause has not been determined.[8] NASA and Roscosmos continuously monitor and evaluate the leak rate, and it is NASA policy to close the hatch between the U.S. and Russian segments when it is not needed, which prevents air loss.[9]

Beyond the station itself, the Extravehicular Mobility Units (EMUs), or spacesuits, used for spacewalks on the ISS are also aging and pose a growing risk to continued operations. The EMUs currently onboard the station were designed in the 1970s and have been in use since the Space Shuttle Program in the 1980s.[10] In recent years, the spacesuits have experienced water intrusion and thermal regulation malfunctions, disrupting maintenance and upgrades to the station and threatening crew safety.[11]

ISS Activities

Since 2000, the ISS has supported over 290 individuals from 26 countries, including 170 Americans, and more than 4,000 experiments.[12] NASA refers to crewed missions on the ISS as "Expeditions"; each Expedition typically consists of a six-month rotation of crew living and working on the station.[13] The most recent, Expedition 74, began on December 8, 2025.[14]

The ISS provides a continuous microgravity environment and unique opportunities to observe Earth and the extreme conditions of outer space.[15] The ISS supports a wide range of science activities, but its research is primarily focused on four disciplines: biology and biotechnology, Earth and space science, physical science, and human research. The ISS also facilitates the testing and demonstration of technologies that both benefit life on Earth and enable future human exploration missions.[16]

The U.S Destiny module serves as the primary research facility for U.S. payloads. In 2005, Congress designated the station as the ISS National Laboratory (ISSNL) to promote its utilization by other federal entities and the private sector.[17] By statute, the ISSNL is guaranteed access to 50% of NASA's research capacity allocation, which includes resources for resupply missions and crew time on the ISS. In 2011, NASA selected the Center for the Advancement of

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[8] Aerospace Safety Advisory Panel, *Annual Report 2025*, (Feb. 15, 2026), asap-2025-annual-report-tagged.pdf
[9] See supra note 8, p. 26.
[10] NASA Office of Inspector General, *NASA's Management of ISS Extravehicular Activity Spacesuits*, (Sep. 30, 2025), https://oig.nasa.gov/wp-content/uploads/2025/09/final-report-ig-25-012-nasas-management-of-iss-extravehicular-activity-spacesuits.pdf?emrc=68dc3409eeb39
[11] See supra note 10.
[12] NASA, *ISS, Station Visitors*, https://www.nasa.gov/international-space-station/space-station-visitors-by-country/
[13] NASA, *NASA FAQ, Astronauts Answer Student Questions*, (May 2017), https://www.nasa.gov/wp-content/uploads/2017/05/569954main_astronaut20_faq.pdf
[14] NASA, *ISS, Expedition 74,* https://www.nasa.gov/mission/expedition-74/
[15] NASA, *Space Station Research Integration Office, Why Do Research On The International Space Station?,* (Jul. 24, 2022), https://www.nasa.gov/missions/station/iss-research/why-do-research-on-the-international-space-station/
[16] NASA, *Space Station Research and Technology, Station Science 101*, https://www.nasa.gov/international-space-station/space-station-research-and-technology/space-station-science-101/
[17] ISS National Laboratory, *About the ISS National Lab, History of the ISS*, https://issnationallab.org/about/iss-national-lab-overview/iss-history-timeline/

Science in Space (CASIS) to serve as the manager of the ISSNL.[18] Since 2005, the ISSNL has supported over 700 research payloads, engaged 100 million participants in educational programs, and provided $3 billion in funding for space research.[19]

As human exploration ventures farther from Earth, it is critical to test and demonstrate technologies and self-sustaining systems in space. The ISS allows NASA to gain operational experience and refine space systems, thereby reducing risk before deploying these capabilities on deep-space missions. Technologies and operations to support basic life essentials such as water, food, and air have been tested on the ISS and could be used for Artemis and other Moon-to-Mars missions. For example, in the U.S. segment of the station, NASA achieved 98% water recovery, the ideal level needed to support deep-space missions.[20]

ISS Crew and Cargo Resupply

Initially, the U.S. Space Shuttle and Russian Soyuz and Progress spacecraft were used for crew and cargo delivery. After the retirement of the Space Shuttle program in 2011, the Russian Soyuz became the only crewed spacecraft until 2020.[21]

In 2008, NASA signed contracts with SpaceX and Northrop Grumman for commercial services to resupply the ISS with cargo under the Commercial Resupply Services (CRS) program.[22] Subsequently, in 2016, NASA added Sierra Space to the CRS program.[23] NASA also established the Commercial Crew Program (CCP) in 2010 to support the development of ISS crew delivery and return capabilities. Both SpaceX and Boeing provide NASA services under CCP.[24]

SpaceX's Crew-1 Mission on the Dragon spacecraft launched in November 2020, becoming the first commercial vehicle to deliver crew to orbit.[25] SpaceX has since carried out 11 additional missions, including the recent Crew-12 mission, which is currently onboard the ISS.[26] Boeing's Starliner spacecraft attempted its first crewed flight in 2024, but the flight suffered from helium leaks and thruster malfunctions. In 2026, NASA Administrator Jared Isaacman retroactively designated the incident as a Type A mishap. NASA and Boeing are working together to

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[18] NASA, *KSC Partnerships*, https://public.ksc.nasa.gov/partnerships/spacecraft-and-payloads/international-space-station-iss/center-for-the-advancement-of-science-in-space-casis/
[19] See supra note 17.
[20] Christine Giraldo, NASA*, International Space Station: Launching NASA and Humanity into Deep Space*, (ep. 30, 2025), https://www.nasa.gov/missions/station/iss-research/international-space-station-launching-nasa-and-humanity-into-deep-space/
[21] NASA*, ISS, Visiting Vehicles*, https://www.nasa.gov/international-space-station/space-station-visiting-vehicles/?utm_source
[22] Chris Bergin, NASA Space Flight, *SpaceX and Orbital win huge CRS contract from NASA*, (Dec. 23, 2008), https://www.nasaspaceflight.com/2008/12/spacex-and-orbital-win-huge-crs-contract-from-nasa/
[23] Sierra Nevada Corporation, *NASA Selects Sierra Nevada Corporation's Dream Chaser® Spacecraft for Commercial Resupply Services 2 Contract*, (Jan. 14, 2016), https://www.sncorp.com/news-archive/nasa-selects-sierra-nevada-corporation-s-dream-chaser-spacecraft-for-commercial-resupply-services-2-contract/
[24] NASA, *Commercial Crew Program, Commercial Crew Program Essentials,* https://www.nasa.gov/humans-in-space/commercial-space/commercial-crew-program/commercial-crew-program-essentials/
[25] SpaceX, *Crew-1 Mission*, https://www.spacex.com/launches/crew1
[26] NASA, *NASA's SpaceX Crew-12*, https://www.nasa.gov/mission/nasas-spacex-crew-12/

understand and address the technical and operational challenges facing Starliner before its next mission.[27]

ISS Funding & Deorbit Plan

NASA spends approximately $3.1 billion on the ISS annually, including $1.3 billion for station operations and research and $1.8 billion for crew and cargo resupply.[28] As the station ages, program officials anticipate ongoing needs for ISS repairs and upgrades, which could impose an additional financial burden on the program.

NASA has determined that the safest way to conduct the station's end of life is to deorbit it in a remote, unpopulated part of the Pacific Ocean.[29] In June 2024, NASA awarded SpaceX an $843 million contract to develop and deliver the U.S. Deorbit Vehicle (USDV) that will provide the capability to deorbit the ISS.[30] The deorbit operation will include both natural orbital decay and a re-entry maneuver to control the size and placement of the debris.[31] NASA has previously stated that per the IGA, ISS deorbit "is a shared responsibility of all five space agencies through partner contributions based on mass percent ownership by agency."[32]

ISS Transition

In the NASA Transition Authorization Act of 2017, Congress directed NASA to "develop a plan to transition in a stepwise approach from the current regime that relies heavily on NASA sponsorship to a regime where NASA could be one of many customers of a low-Earth orbit non-governmental human spaceflight enterprise."[33] NASA issued the International Space Station Transition Report in 2018, outlining its planned approach to transitioning from reliance on the ISS to commercial platforms, and providing transition "principles" that focus on ensuring uninterrupted access to LEO capabilities to enable NASA and the Nation's long-term interests in LEO and human space exploration.[34]

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[27] Cheryl Warner, NASA, *NASA Releases Report on Starliner Crewed Flight Test Investigation*, (Feb. 19, 2026), https://www.nasa.gov/news-release/nasa-releases-report-on-starliner-crewed-flight-test-investigation/
[28] U.S. Congress, *NASA Appropriations and Authorizations: At a Glance*, (Feb. 27, 2026), https://www.congress.gov/crs-product/R43419 - _Ref382317146
[29] NASA, *International Space Station Deorbit Analysis Summary*, (June, 2024), https://www.nasa.gov/wp-content/uploads/2024/06/iss-deorbit-analysis-summary.pdf
[30] Abbey A. Donaldson, *NASA Selects International Space Station US Deorbit Vehicle*, (June 26, 2024), https://www.nasa.gov/news-release/nasa-selects-international-space-station-us-deorbit-vehicle/ -:~:text=NASA%20announced%20SpaceX%20has%20been%20selected%20to%20develop,and%20ensure%20avoidance%20of%20risk%20to%20populated%20areas.
[31] See supra note 28
[32] Mark A. Garcia, *International Space Station*, *NASA Seeks Proposals from US Industry for Station Deorbit Spacecraft*, (Sept. 20, 2023, 4:36 PM), https://www.nasa.gov/blogs/spacestation/2023/09/20/nasa-seeks-proposals-from-us-industry-for-station-deorbit-spacecraft/
[33] National Aeronautics and Space Administration Transition Authorization Act of 2017, Pub. L. No. 115-10, 131 Stat. 27 (2017).
[34] NASA, *International Space Station Transition Report*, (March 30, 2018), https://www.nasa.gov/wp-content/uploads/2015/01/iss_transition_report_180330.pdf

The following year, NASA published the NASA Plan for Commercial LEO Development, outlining actions already taken and steps to be taken in the near, mid, and long term to stimulate demand for commercial activities in LEO.[35]

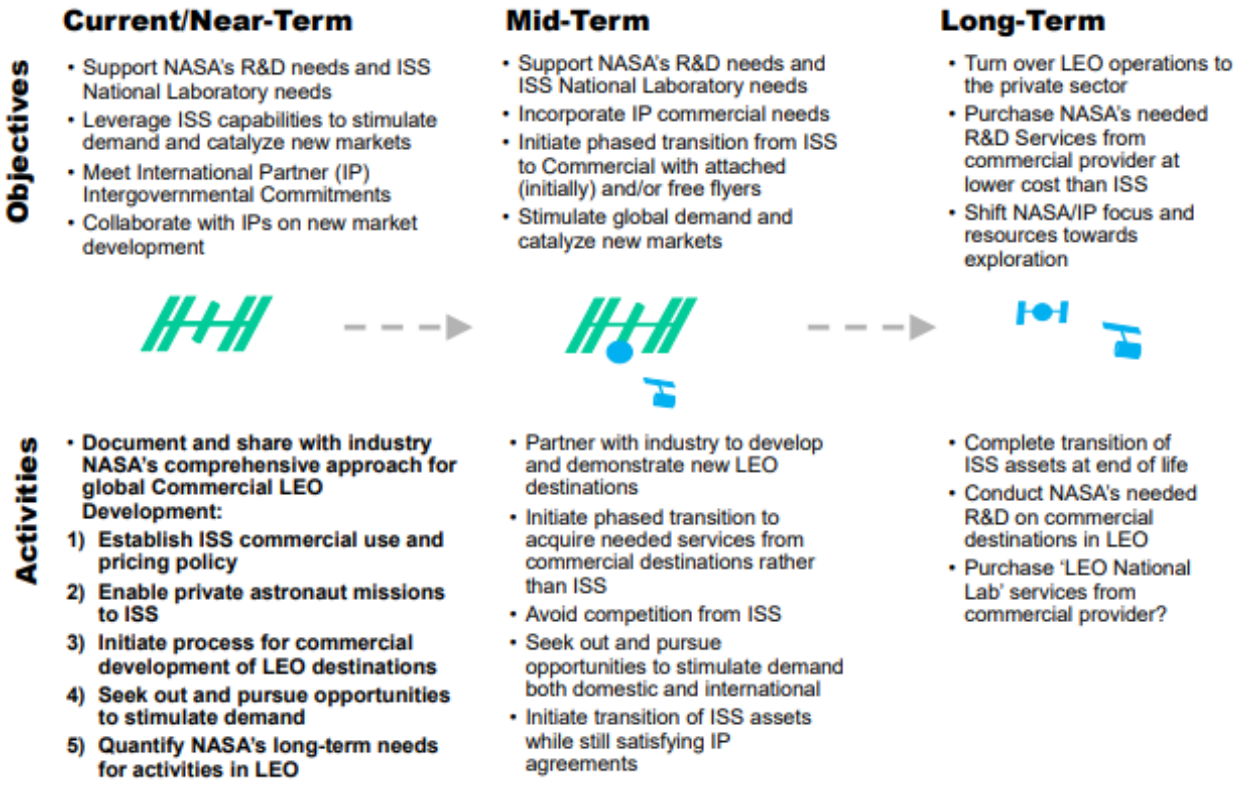

Figure 2: NASA's plan for Commercial LEO Development. [Source: NASA]

NASA has begun to implement the near-term phase of the plan. In 2019, NASA issued a directive updating the ISS commercial and marketing use policies to allow for activities that require the unique microgravity or space environment to enable manufacturing or development of a commercial application, have a connection to NASA's mission, or support the development of the LEO economy.[36] NASA also published updated pricing policies for commercial activities on the ISS. [37]

That same year, NASA updated its policies to allow commercial entities to conduct up to two 30-day Private Astronaut Missions (PAMs) to the station annually.[38] The first private astronaut

[35] NASA, *NASA Plan for Commercial LEO Development*, (June 7, 2019), https://www.nasa.gov/wp-content/uploads/2019/05/commleodevt_plan_6-7-19_final-links-new.pdf
[36] NASA Interim Directive (NID): Use of International Space Station (ISS) for Commercial and Marketing Activities, NID 8600.121, (June 6, 2019), https://www.nasa.gov/wp-content/uploads/2022/05/nid_8600_121_tagged.pdf
[37] NASA, *Commercial and Marketing Pricing Policy*, (April 29, 2021), https://www.nasa.gov/humans-in-space/commercial-and-marketing-pricing-policy/
[38] Office of Space Commerce, *NASA Opens Space Station to Commercial Business*, (June 14, 2019), https://space.commerce.gov/nasa-opens-space-station-to-commercial-business/

mission (PAM) to the ISS was Axiom's Mission 1, which launched in April 2022 and lasted 17 days. Axiom has since launched three additional PAM missions and is scheduled to conduct a fifth in January 2027. NASA has also announced the selection of Vast for a future PAM—the company's first—and Vast is targeting a launch in the summer of 2027. [39]

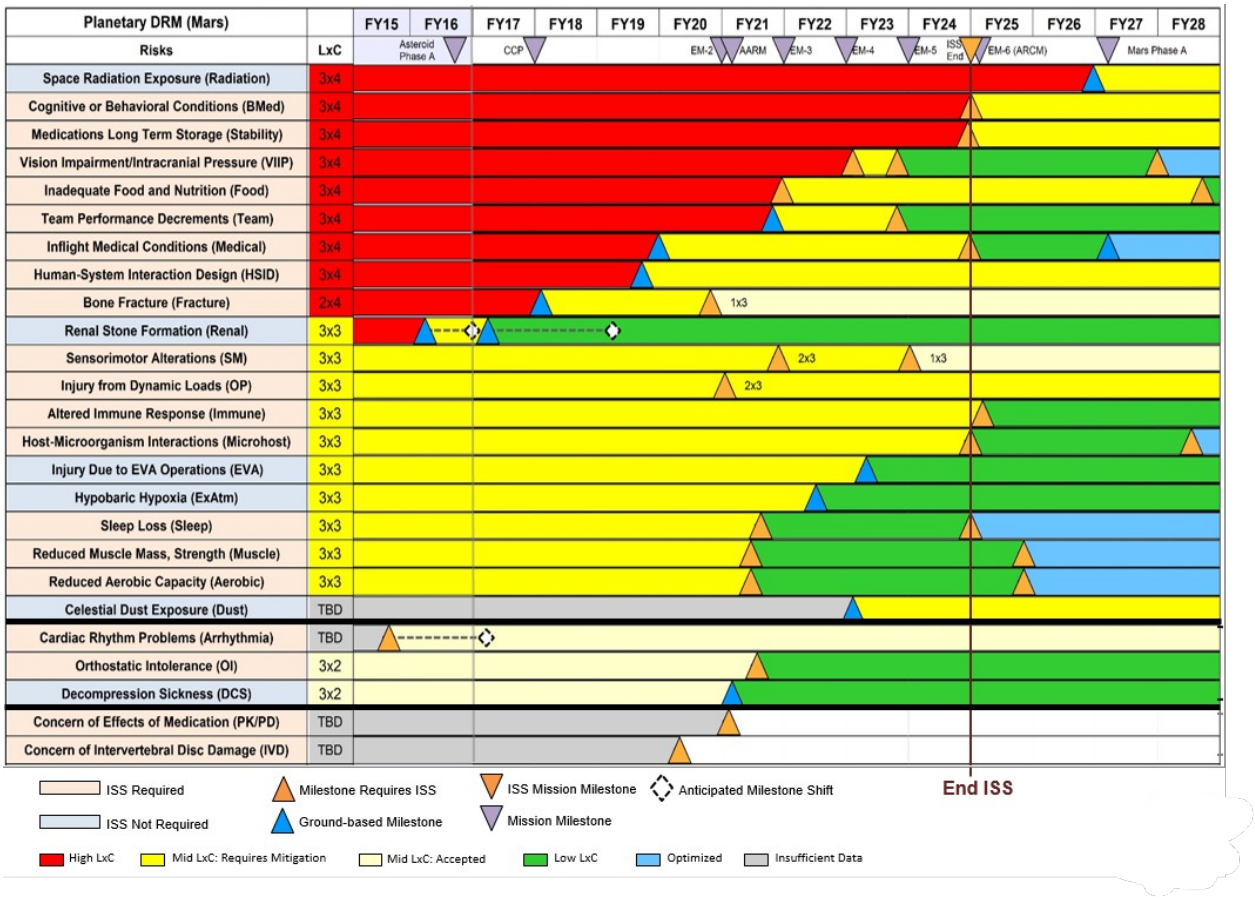

Figure 3: NASA's Human Research Program Integrated Path to Risk Reduction [Source: NASA]

In 2022, NASA published an update to the International Space Station Transition Report. The report details NASA's future goals for LEO and provides an implementation strategy through the end of the ISS, as well as a strategy for transitioning to commercial space stations. The report highlights the importance of continued robust utilization of the ISS as part of the transition. It also describes the steps NASA is taking to support both the supply and demand sides of the LEO economy. [40]

Commercial LEO Development Program

NASA has established the Commercial Low Earth Orbit Development program at Johnson Space Center to support the growth of the LEO economy and stimulate commercial activity in LEO.

[39] NASA, *Humans in Space, Private Astronaut Missions*, https://www.nasa.gov/humans-in-space/private-astronaut-missions/

[40] NASA, *International Space Station Transition Report*, (January, 2022), https://www.nasa.gov/wp-content/uploads/2015/01/2022_iss_transition_report-final_tagged.pdf

The program is responsible for facilitating the development of commercially owned and operated space stations (hereafter referred to as "Commercial LEO Destinations" or "CLDs") from which NASA, along with other customers, can procure services.

NASA's commercialization efforts are motivated by the belief that a robust LEO economy will reduce NASA's LEO operational costs, freeing up resources for deep space exploration and other Agency objectives.[41] NASA hopes to achieve significant cost savings by transitioning from the ISS to CLDs. In the 2022 ISS Transition Report, NASA estimates savings of "approximately $1.3 billion in 2031, ramping up to $1.8 billion by 2033."[42]

NASA has implemented a phased approach to CLD development, initially supporting the maturation of CLD concepts and subsequently facilitating the certification of selected platforms and the procurement of services from them.[43]

Phase 1

In the first phase, NASA has focused on supporting the design and development of several CLDs and related technologies through both funded and unfunded agreements.[44]

In 2020, NASA awarded Axiom Space a firm-fixed-price contract to attach a commercial module to the ISS, with a plan to ultimately separate and operated as a free-flying CLD.[45] In December 2024, in coordination with NASA, Axiom revised the deployment sequence for Axiom Station to deconflict with USDV docking requirements. Axiom now plans to attach the Payload, Power, and Thermal module to the ISS in 2027. Axiom plans to follow this module with the launch and in-flight assembly of Habitat 1; Axiom Station would become a free-flying space station and progressively add more modules.[46]

In 2021, NASA signed three Space Act Agreements (SAAs): one with Blue Origin and Sierra Space (Orbital Reef); one with a consortium of Nanoracks, Voyager Space, and Lockheed Martin (Starlab); and one with Northrop Grumman.[47] Northrop withdrew from its Agreement in 2023 and joined the Starlab team. Under these SAAs, NASA is supporting the formulation and design of CLD capabilities that meet Government and private-sector customer needs.[48] By the end of

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[41] NASA, *Johnson Space Center, Commercial Low Earth Orbit Development Program*, https://www.nasa.gov/johnson/commercial-low-earth-orbit-program-office/
[42] See supra note 39, p. 12.
[43] NASA, Humans in Space, Commercial Space Stations, https://www.nasa.gov/humans-in-space/commercial-space/commercial-space-stations/
[44] See supra note 42.
[45] NASA, *NASA Selects First Commercial Destination Module for International Space Station*, (Jan. 27, 2020), https://www.nasa.gov/news-release/nasa-selects-first-commercial-destination-module-for-international-space-station/
[46] Jeff Foust, SpaceNews, *Axiom Space revises space station assembly plans*, (Dec. 18, 2024), https://spacenews.com/axiom-space-revises-space-station-assembly-plans/
[47] NASA, *NASA Selects Companies to Develop Commercial Destinations in Space*, (Dec. 02, 2021), https://www.nasa.gov/news-release/nasa-selects-companies-to-develop-commercial-destinations-in-space/
[48] See supra note 46.

Phase 1, the providers' CLD concepts are expected to reach a Preliminary Design Review level of maturity.[49]

The Orbital Reef station is designed as a "mixed-use business park 250 miles above Earth," providing users with a location in orbit for research, tourism, or logistics.[50] In April 2025, Blue completed a human-in-the-loop testing milestone focused on the design of its station. This step was critical to the design process and provided the research team with insights that informed recommendations on the layout, usability, and positioning of the equipment within the station design.[51] The Starlab station, which will host the George Washington Carver Science Park, is "dedicated to conducting advanced research [and] fostering commercial industrial activity."[52] In July 2025, Starlab completed five development and design milestones, including a preliminary design and safety review of its station's architecture and systems.[53]

In 2023, NASA also partnered with Blue Origin, Northrop Grumman, Sierra Space, SpaceX, ThinkOrbital, Vast, and Special Aerospace Services through the unfunded Commercial Space Capabilities-2 initiative (CCSC-2) to advance commercial space station efforts.[54]

Phase 2 & Proposed Changes

When the CLD program was initiated, NASA planned to continue Phase 1 through 2025 and to issue the Phase 2 Request for Proposals in late 2025, anticipating contract awards in 2026. Under this structure, in Phase 2, NASA would support the work required to begin operations on CLDs by awarding one or more firm-fixed-price contracts to certify selected CLDs for NASA use and, ultimately, procure services from them when available.[55]

However, on August 4, 2025, then-Acting NASA Administrator Sean Duffy issued a directive updating the CLD acquisition strategy. Instead of moving forward with a firm-fixed-price contract for CLD certification and services in Phase 2, NASA would continue to support U.S. industry in the design and demonstration of CLDs through multiple funded SAAs for the next phase. Under the revised Phase 2, NASA will issue a minimum of two Agreements to support the

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[49] Selection Statement For Commercial LEO Destinations, (Dec. 01, 2021), https://spaceexplored.com/wp-content/uploads/sites/10/2022/01/Selectionstatement_CDFF_final_Signed.pdf
[50] Sierra Space, *Orbital Reef, A Mixed-Use Business Park In Space*, https://www.sierraspace.com/commercial-space-stations/orbital-reef-space-station/
[51] NASA, *Commercial Low Earth Orbit Development Program, NASA Sees Progress on Blue Origin's Orbital Reef Design Development*, (Apr. 16, 2025), https://www.nasa.gov/humans-in-space/commercial-space/leo-economy/nasa-sees-progress-on-blue-origins-orbital-reef-design-development/
[52] See supra note 46
[53] NASA, *Commercial Low Earth Orbit Development Program, NASA Sees Key Progress on Starlab Commercial Space Station*, (Jul. 16, 2025), https://www.nasa.gov/humans-in-space/commercial-space/leo-economy/nasa-sees-key-progress-on-starlab-commercial-space-station/
[54] Roxana Bardan, NASA, *Seven US Companies Collaborate with NASA to Advance Space Capabilities*, (Jun. 15, 2023), https://www.nasa.gov/news-release/seven-us-companies-collaborate-with-nasa-to-advance-space-capabilities/
[55] Commercial LEO Destinations, Announcement JSC-CLD-01, DRAFT, (May 17, 2021)

maturation of CLD systems to a Critical Design Review level of readiness, as well as an in-space crewed demonstration of four crew members for a minimum of 30 days.[56]

NASA's updated phased approach will culminate in a follow-on Phase 3, which will consist of awarding one or more firm-fixed-price contracts, through full and open competition, to support formal design acceptance and certification, ensuring the CLDs meet NASA's safety requirements. The contracts will also be used to procure CLD services once they are available. NASA stated that this change "better aligns with enabling development of commercial platforms utilizing a process that provides greater flexibility for industry to align schedule with NASA's needs."[57]

NASA plans to continue to support Phase 1 activities through March 2026 and is preparing to issue a solicitation for the Phase 2 SAAs.[58] While the Agency has not announced the path forward for the CLD program, in January, NASA published an update stating that "procurement activities remain ongoing as the agency works to align acquisition timelines with national space policy and broader operational objectives" and that providers "should anticipate that additional clarity regarding procurement milestones will be provided in the coming weeks."[59] However, a formal path forward for the program has not yet been established.

NASA ASAP Report on CLD Program

The 2025 NASA Aerospace Safety Advisory Panel (ASAP) Report discussed the transition from the ISS to CLDs, noting NASA "lacks a clearly defined and executable path to transition to a CLD before or immediately after the ISS end of life (EOL)." The Panel emphasized the need for NASA to detail the Agency's future objectives in LEO, identify NASA's roles and responsibilities in the transition process, and outline operations on CLDs. The Panel also highlighted the importance of NASA determinations on: the engineering maturity of CLD platform designs; the business models and incentives of potential CLD providers; how to maintain proper oversight and gain technical insight into key interfaces with NASA operations; how to ensure clarity about authorities and responsibilities, especially with respect to managing anomalies; and what role NASA will assume and communicate relative to long-term risk and safety management in support of its personnel.[60]

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[56] NASA, Directive on Revised Commercial Low Earth Orbit (LEO) Destinations (CLD) Phase 2 Acquisition Strategy, (Aug. 4, 2025), https://www.nasa.gov/wp-content/uploads/2025/08/nasa-cld-directive-aug-4-2025.pdf
[57] See supra note 58.
[58] SAM, *Contract Opportunity, Commercial Low Earth Orbit (LEO) Development Program Phase 2- SAA, (Aug. 28, 2025, 3:47 PM CDT), https://sam.gov/workspace/contract/opp/e7ae31136402440bb7442c622857834f/view*
[59] NASA, *JSC-OP-Sub, Commercial Destinations – Development and Demonstration Objectives (C3DO) Space Act Agreement (SAA)*, (Jan. 28, 2026), https://www.nasa.gov/johnson/jsc-procurement/c3do/
[60] See supra note 8.

LEO Economy and Market

Space-based research, In-Space Manufacturing (ISM), and space tourism are the top projected revenue generators within LEO. The ISS has been critical for scientific research in medicine, physiology, and life sciences; NASA seeks commercial space stations that offer similar capabilities. NASA's Human Research Program (HRP) depends on access to LEO to continue its work on human performance in space research. Currently, the HRP is researching the effects of spaceflight on vitamin B levels, cerebrospinal fluid pressure, radiation levels, and behavioral performance.[61]

Being in LEO provides a unique opportunity to conduct research in microgravity, where Earth's gravity is eliminated. This environment allows astronauts to conduct experiments to examine the effects of heat and mass transport on materials in near-zero gravity, and to understand how gravity affects the physical and life sciences. ISM opportunities are also extensive, including more efficient crystal growth, DNA amplification and sequencing, and 3D printing for advanced manufacturing.[62]

The biomanufacturing and pharmaceutical markets also benefit from microgravity. Crystals produced in microgravity can provide insight into a protein's function, supporting developments in biology.[63] 3D tissue engineering and bioprinting also benefit when the environment allows the formation of more complex, physiologically relevant tissues.[64]

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[61] Taylor Rajic, Lauren Williams, and Matt Pearl, *Maintaining the Space Edge, Strategic Reforms for U.S. Dominance in Low Earth Orbit*, (February 2026), https://csis-website-prod.s3.amazonaws.com/s3fs-public/2026-02/260202_Rajic_Space_Edge.pdf

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