Cabinet Office

Overview of Japan's Space Policy on luna activities

- Internet X Space Summit-

June, 2026

National Space Policy Secretariat
Cabinet Office, Government of Japan

Government Structure on Space Policy

Prime Minister TAKAICHI

Outer Space Development Strategy Headquarters

- Chief: Prime Minister
- Deputy Chiefs: Chief Cabinet Secretary and Minister of State for Space Policy
- Members: All Ministers of State Other than the Chief and the Deputy Chiefs

Minister ONODA

-Basic Plan on Space Policy
-Implementation Plan (annually)

recommendations

Committee on National Space Policy

Cabinet Office

National Space Policy Secretariat (NSPS)

Minister of State for Space Policy

Quasi-Zenith Satellites System Strategy Office

Cross-governmental Cooperation

CSICE	MLIT	MAFF	MOE	MOD	MIC	MEXT	METI	MOFA	NPA etc…
Intelligence	Weather Satellite	Smart Agriculture Fisheries	Greenhouse Gases Observing	National Defense	Communications & Broadcast	Science & Technology	Space Industry	Foreign Affairs	

National Research and Development Agency
Japan Aerospace Exploration Agency

CSICE: Cabinet Satellite Intelligence Center
MLIT: Ministry of Land, Infrastructure, Transport and Tourism
MAFF: Ministry of Agriculture, Forestry and Fisheries of Japan
MOE: Ministry of the Environment

MOD: Ministry of Defense
MIC: Ministry of Internal Affairs and Communications
MEXT: Ministry of Education, Culture, Sports, Science and Technology

METI: Ministry of Economy, Trade and Industry
MOFA: Ministry of Foreign Affairs of Japan
NPA: National Police Agency

The 5th Basic Plan on Space Policy (June 2023)

- **Human activities are expanding into outer space in earnest**, **the space system contributes to solving various issues on the earth** as well as to strengthening security-related efforts.
- As the economic and social transformation brought about by activities on the frontier of space (**i.e., space transformation**) is becoming a global trend, Japan needs to **maintain and strengthen its independence in space activities and lead the world**. To realize this, the Basic Plan on Space Policy was revised on June 13th, 2023.

Goals and Future Vision

(1) Ensure Space Security

(2) Ensure national resilience, tackle global-scale issues and achieve innovation

(3) Create new knowledge and industries in space science and exploration

(4) Strengthen the industrial base to support space activities

To make the space industry **a growth industry in the Japanese economy**, we aim to double its market size from **4.0 trillion yen in 2020 to 8.0 trillion yen in the early 2030s**.

Basic Principles for Space Policy Promotion

(1) Implement policies for actual deployment in missions such as those of security, space science and exploration as well as commercialization

(2) Strengthen technology R&D based on the "Space Technology Strategy"

- Implement a cross-sectional study of security and civilian sectors. Strengthen the supply chain

(3) Strengthen international partnerships with allies, like-minded countries and others

- Formulate international norms and rules, and promote international cooperation utilizing Japan's strengths, etc.

(4) Support and develop internationally competitive companies in a strategic manner

- Support R&D of advanced technologies and private sector-led projects

(5) Strengthen JAXA's role and functions as a core agency for space development

- Strengthen JAXA's strategic and flexible funding capabilities, making it a nodal point for industry, academia and government

(6) Use human, financial and other resources in an effective and efficient manner

- Effective and efficient use of resources based on the "Implementation Plan" and the "Space Technology Strategy"

Specific Approaches to Space Policy

(Provisional Translation)

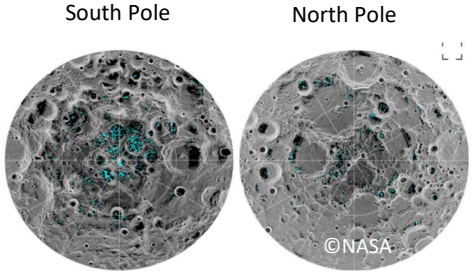
Importance of Lunar Activities

- Creation of new knowledge and industries through space science and exploration (Basic Plan on Space Policy)
  - Lunar water resources could support sustained human presence through life support and energy production
  - The Moon may also contain silicon and metal resources, including iron and aluminum
  - The Moon is expected to serve as a testbed and operational hub for future deep-space exploration

Water Resources

- Water resources have been identified in the lunar south polar region.

Potential uses include water supply for human activities, as well as the production of oxygen for breathing and fuel through electrolysis.

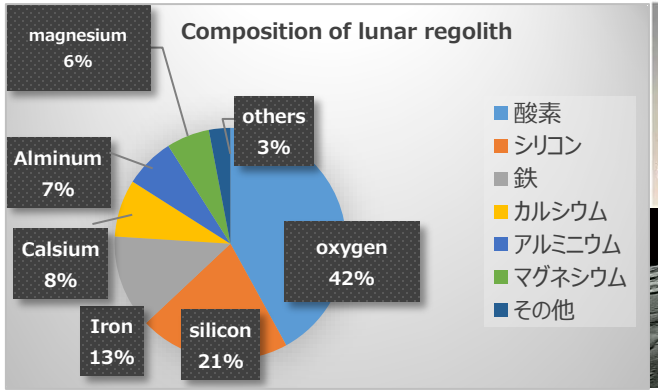


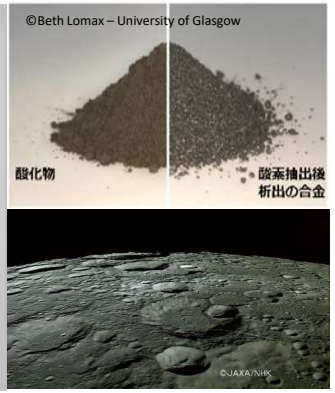
Water distribution at the lunar poles.
Water ice is believed to remain in permanently shadowed areas (light blue).

metals and other resources

- Lunar regolith contains large amounts of oxides, including silicon and metallic resources such as iron and aluminum.
- Helium-3 and rare earth elements are also present.

Potential uses include materials production, including semiconductors, and oxygen production through electrolysis.





Prepared by the National Space Policy Secretariat based on publicly available information.

Support for development toward the promotion of lunar industries

- In addition to JAXA's technology development, Japan supports private-sector lunar activities, including startups and non-space companies, through programs such as SBIR, the Stardust Program, and the Space Strategy Fund.

SBIR Program
(Small Business Innovation Research Program)

Led by the Cabinet Office, the program provides integrated support across ministries, from early-stage R&D to government procurement and commercial use, with the aim of promoting innovation and creating unicorn companies.

●Development and demonstration of lunar landers

- Technologies and expertise for the development, launch, and operation of lunar landers
- Interface design technologies for integration with Japanese launch vehicles
- Operation technologies for lunar landers, including orbital insertion, navigation, lunar landing guidance and control and the establishment of communications and power supply after landing

Source: METI

Stardust Program
(Strategic Program for Accelerating Research, Development and Utilization of Space Technology)

The program promotes cross-ministerial R&D projects, including lunar development and the strengthening of satellite technologies.

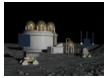
●Positioning and communications
- Lunar positioning systems
- Optical communications between the Moon and Earth

Optical Communications Source：JAXA

●Construction
- Geological survey and autonomous construction technologies
- Construction materials using lunar resources
- Simple habitat construction technologies

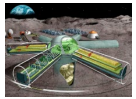
Autonomous lunar construction Source: JAXA

●Resources and energy
- Water resource exploration technologies
- Water electrolysis technologies for the lunar environment
- Power generation, storage, and transmission technologies



Lunar resource utilization plant Source: JAXA

●Food and biotechnology
- Production technologies for rice, soybeans, algae, and cultured meat
- Closed-loop recycling technologies for waste and human by-products



Lunar plant factory Source: JAXA

Study on a proposed architecture for lunar activities

- The Basic Plan on Space Policy (Cabinet Decision of 13 June 2023) states that, with a view to expanding sustainable human activities and creating new markets, the Government of Japan and JAXA will advance studies on architectures for lunar activities while conducting technology benchmarking in light of developments under the Artemis Program and other initiatives.

- Against this background, studies on lunar activities were conducted during FY2023–FY2024 through commissioned research with experts and stakeholders from industry, academia, and government.

- These studies summarized recent domestic and international developments and possible future lunar activities while reviewing Japan's lunar-related initiatives, including JAXA projects, the Stardust Program, and the SBIR program.

- The following slides present a proposed "Architecture for Lunar Activities" as a tool for further discussions with a broader range of domestic and international stakeholders.

Proposed Lunar Activities Architecture

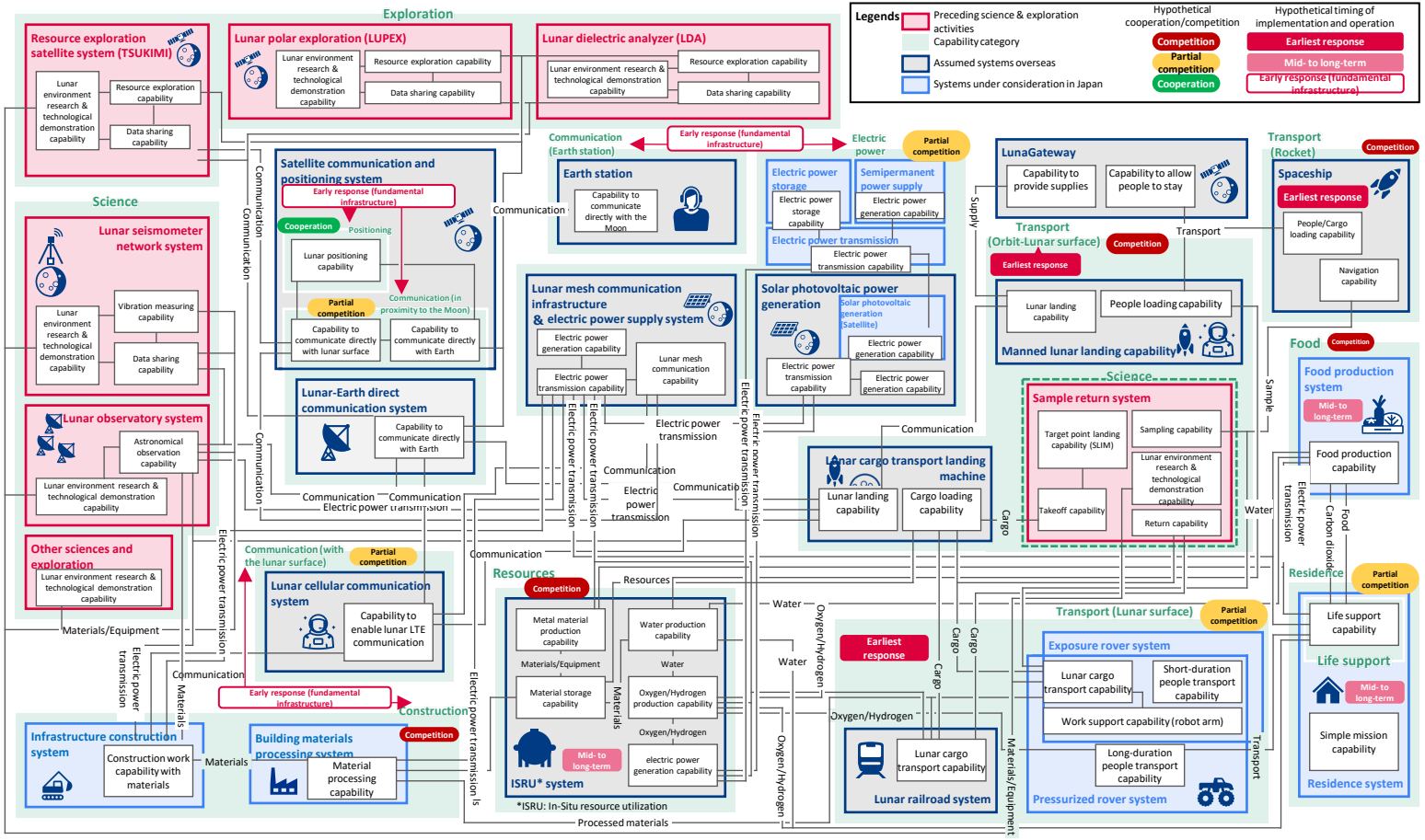
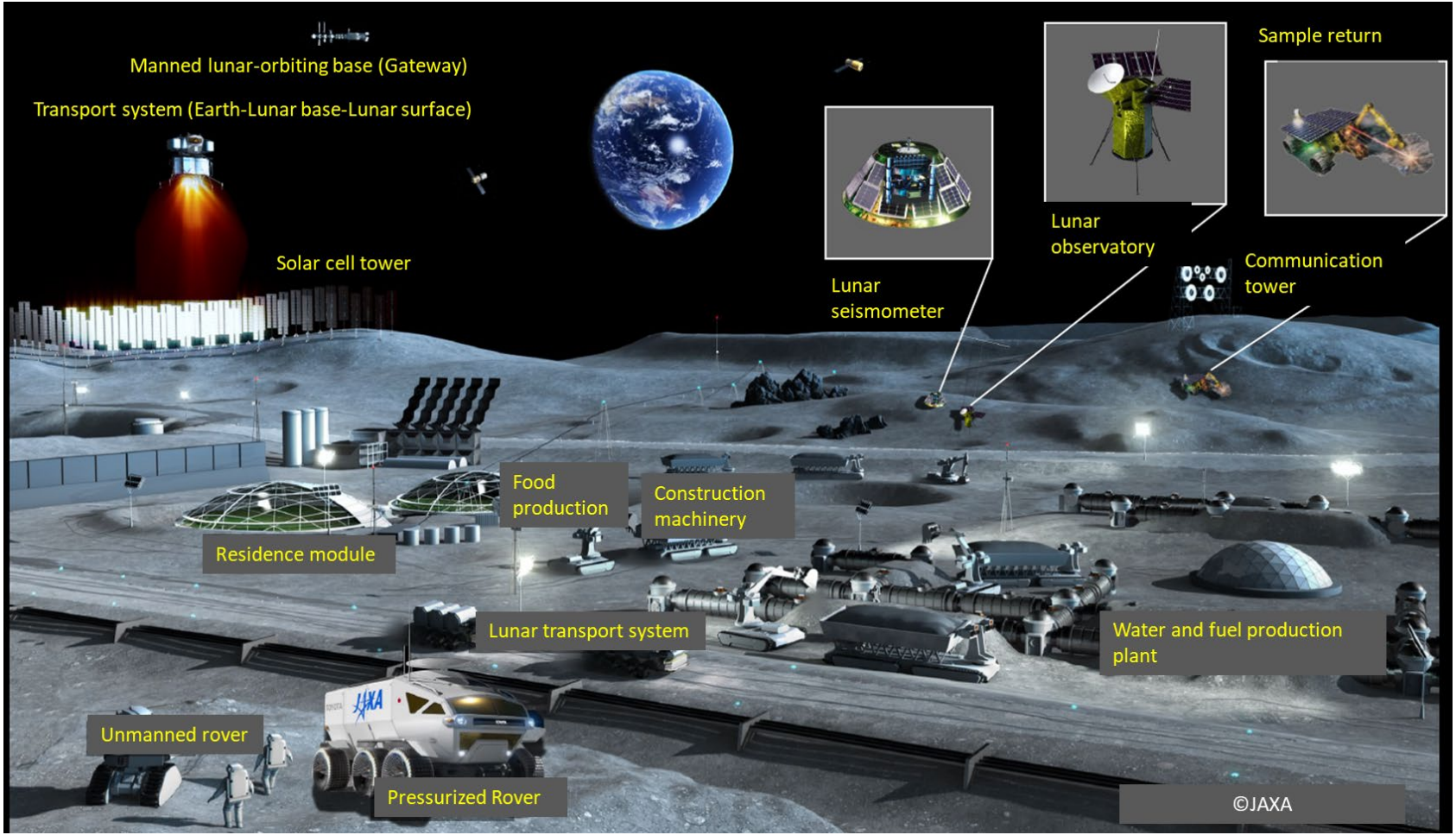


Image of Possible Lunar Activities



Japan Growth Strategy (Space Sector)

- Aviation and Space is one of the 17 strategic sectors of the Japan's Growth Strategy.
- From the perspectives of "crisis management investment" and "growth investment," discussions focused on:
  - Rockets and launch sites
  - Satellites and services
  - **Lunar exploration and LEO technologies**
- While addressing both civilian and national security needs, Japan aims to further strengthen the growth of the space sector **through high-frequency launches, government procurement (anchor tenancy), and support for strategically important and commercially competitive technologies.**

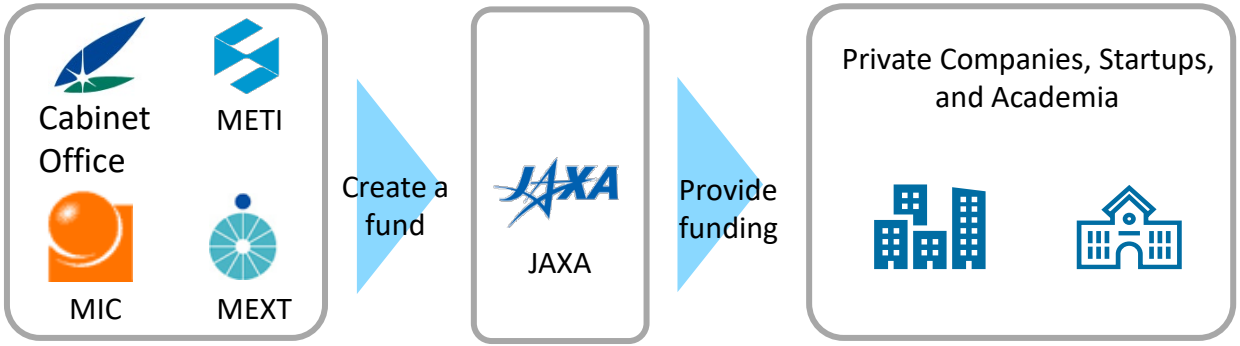
Lunar Exploration and LEO technologies	
The current status	• Amid intensifying U.S.–China competition, lunar and LEO activities are shifting from government-led programs to an era of public-private co-creation • Japan has strengths in transportation technologies and terrestrial industries but faces high access costs. • Artemis Program and post-ISS initiatives are creating new markets with growing private-sector participation.
Direction	• International contributions through Japan's core space technologies as crewed pressurized lunar rovers and the development and procurement of space station cargo transportation systems. • Supporting the development and demonstration of lunar technologies by private-sector companies. • Aiming to secure Japan's share in future lunar infrastructure market and commercial space station market.

Outline of Space Strategy Fund

- In 2023, Japan established the **Space Strategy Fund** at JAXA, fostering Japanese space policy and activities. This fund enables Japan-based private companies, including startups and non-space-related companies, and academia to further engage in research and development.
- With the target of about **1 trillion yen** (about $6.3B or €5.4B※) to be reached as soon as possible, the current funding is 0.8 trillion (about $5B or €4.3B) yen as of 2025. Japan began selecting companies and research institutions in 2024.

※exchange rate: 1$=159yen, 1€=185yen (As of January 2026)

- This fund currently supports **65** research and development themes and would plan to expand them for the other research and development themes in the future.



Overview of Japan's Initiatives on Space Resource Activities

- Various space resource activities related to the Moon and asteroids are being pursued by different countries.
- In 2021, Japan became the fourth country in the world, following the United States, Luxembourg, and the UAE, to enact national legislation on space resources through the Act on the Promotion of Business Activities for the Exploration and Development of Space Resources (Space Resources Act).
- As international rules on space resources continue to evolve, Japan seeks to contribute to international discussions on norms and rules together with allies and like-minded countries, while supporting the development of its space industry.

Promotion of private-sector space resource activities

- As the fourth country in the world to establish national legislation on space resources, Japan promotes efficient space resource development through the proper implementation of the Space Resources Act and support for private-sector activities.
- In 2022 and 2024, Japan authorized i-space's lunar landing missions under the Act and publicly released the business activity plans on the Cabinet Office's website to ensure transparency.
- Japan will continue to support technology demonstration and commercialization for space resource activities, including through the Space Strategy Fund.

Source : METI

Leading role in the development of international norms and rules

- As space resource activities expand, international discussions on principles governing such activities are also advancing in fora such as the United Nations (UN).
- In 2021, Working Group on Space Resources was established under the Legal Subcommittee of UN COPUOS. The Artemis Accords, to which Japan is a signatory, also address compliance with the Outer Space Treaty in the exploration and use of space resources.
- Japan will continue to contribute to the development of international rules on space resources, including commercial activities, by drawing on its national legislation, technological capabilities, and best practices for ensuring transparency.

Thank you very much.

Cabinet Office

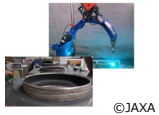
Appendix

Technology Development Themes - 1st phase (total 22)

Transportation

【MEXT】Innovative technology for light weight- high performance and lower cost. (12B Yen)

【MEXT】Ground systems for future transportation. (15.5B Yen)



【METI】Mass production technology development for main materials of solid rocket motor. (4.8B Yen)

【METI】Development of integrated navigation system for space transportation. (3.5B Yen)

Experiment of Solid rocket booster.

Satellite

【MEXT】Optical observation satellite system with high resolution/high frequency. (28B Yen)

【MEXT】Innovative satellite LiDAR technology utilizing high power laser. (2.5B Yen)

【MEXT】High accuracy satellite formation flight technology. (4.5B Yen)

Formation Flight image

【METI】Accelerating commercial satellite constellation deployment. (95B Yen)

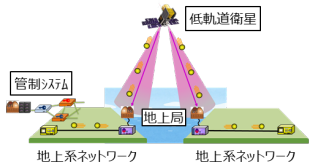
【METI】Development/verification of parts/components for establishing satellites supply chain. (18B Yen)

【METI】Feasibility study of overseas demonstration of satellite data utilization system. (1B Yen)

【MIC】Development/verification of satellite communication technology with quantum cryptography. (14.5B Yen)

【MIC】Supporting implementation of communication technology required for satellite constellation. (1.9B Yen)

Satellite Constellation



Quantum Cryptography Network

Technology Development Themes - 1st phase (total 22)

Exploration

Lunar Development

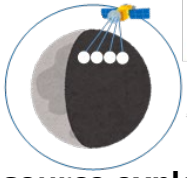
【MEXT】Development of Lunar Positioning System Technology (5B Yen)

【MEXT】Development of Regenerative Fuel Cell System (23B Yen)

Lunar Positioning System Image

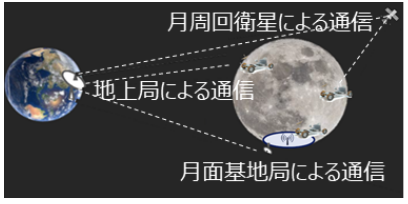
【MEXT】Fundamental technology for Semipermanent power supply. (1.5B Yen)

【MIC】Technology for lunar water resource exploration. (6.4B Yen)



Lunar water resource exploration image

【MIC】Feasibility Study for development/verification of Cislunar communication. (0.5B Yen)



Cislunar commnication system Image

LEO Utilization

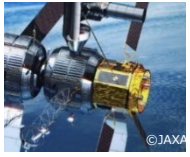
【MEXT】Technology for cargo delivery system with international competitiveness and independence.(15.5B Yen)

【MEXT】Technology for LEO autonomous flying module system. (10B Yen)

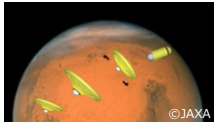
【MEXT】Technology for LEO universal experiment system (2B Yen)

Mars Exploration

【MEXT】Fundamental low cost technology for atmospheric entry/aerodynamic damping. (10B Yen)



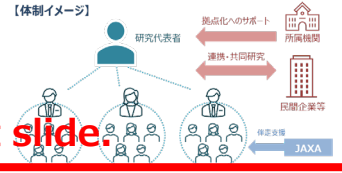
Automomous flying module image



Expanded Aeroshell Image

Common Development

【MEXT】SX research and development site (11B Yen))



See next slide.

Technology Development Themes - 1st phase (total 22)

【MEXT】SX Research and Development Sites Related to Space Resources

- Space Resource Development Hub for Lunar Surface Development
- Space Equipment Development and Human Resource Development Hub for the Industrialization of Lunar Exploration and Utilization

Technology Development Themes – 2nd phase (total 24)

Transportation

【MEXT】 Fundamental system technology to realize “smart launch site”

【MEXT】 Fundamental technology to secure safety of manned space transportation systems

【METI】 Development of rocket parts, components and etc. for high-frequency launches.

【METI】 Feasibility study on the common range facilities for high-frequency launches

【METI】 Innovation of rocket manufacturing process for high frequency launches

Technology Development Themes – 2nd phase (total 24)

Satellites

●On-orbit Servicing
・【MEXT】 Technology to realize flexible spatial mobility
・【MEXT】 Technology to realize flexible utilization of on-orbit environment

●Telecommunication Servicing
・【MIC】 Research and development for data relay services with satellite optical communications
・【MIC】 Development of terminal interconnection technology to expand the deployment of satellite optical communications
・【MIC】 Development of frequency sharing, etc. for integrated satellite and terrestrial operations

●Satellites Common Technology
・【MIC】 Feasibility study for satellite bus and terminal for optical communications

●Satellite Data Servicing
・【MEXT】 Advanced technology to accelerate the use of Earth observation data
・【METI】 Implementation of satellite data utilization system

●Satellites Common Technology
・【MIC】 Technology for globally competitive communications payloads
・【MEXT】 Technology to enhance capability of next generation earth observation satellites
・【METI】 Innovative Satellite Mission Technology

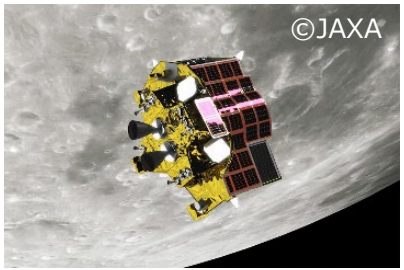
Technology Development Themes – 2nd phase (total 24)

Exploration

Lunar Development

【MEXT】Technology to realize high-precision landing in the lunar polar region

Developing and demonstrating high-precision landing technology for the lunar polar region and other regions that are challenging for private businesses by advancing the high-precision landing technology acquired through the SLIM project.



【MEXT】Elemental technology for lunar surface infrastructure

Developing key elemental technologies contributing to lunar surface infrastructures by using small payloads to quickly produce results, which lead to acquisition of lunar environment data and to quickly demonstrate key technologies for future lunar activities.

Technology Development Themes – 2nd phase (total 24)

Exploration

LEO Utilization

【MEXT】Technology to develop LEO orbital data center

【MEXT】Technology to improve efficiency of LEO external environment utilization

【MEXT】Technology to develop high frequence return cargo system from LEO

Common Development

【MEXT】Space diversion and new space industry seeds creation site

【MEXT】SX (space transformation) core area breakthrough researches

【METI】Solutions for spacecraft environmental testing challenges

Technology Development Themes – 3rd phase (total 19)

Transportation

【MEXT】 Marine application technologies for launch systems

【MEXT】 Thermal protection technologies for atmospheric re-entry of space transportation vehicles

【METI】 Acceleration of private-sector rocket launch demonstration

【METI】 Efficiency improvement and functional enhancement of rocket flight operations

Exploration, etc.

●Lunar Development & Deep-space Exploration
・【MIC】 Development and demonstration of ground stations required for lunar–earth communication infrastructure
・【MEXT】 Technologies for the moon, asteroid, and other space resource utilization

●Low Earth Orbit Utilization, ISS, etc.
・【MEXT】 Technologies to promote LEO utilization
・【MEXT】 LEO base reboost technologies

Common Development

【METI】 SX technology seeds integration and human resource development hub

【METI】 Research in development of SX foundational areas

Technology Development Themes – 3rd phase (total 19)

Satellites, etc.

Satellite Common Technologies & On-orbit Servicing, etc.

【MIC】 Development and demonstration of security technologies related to satellites (technologies against jamming and interception of radio signals)

【MEXT】 Optical and quantum sensing technologies for satellite applications

【MEXT】 Innovative space system technologies enabled by physical AI, etc.

【METI】 Reforming satellite development and manufacturing processes and technology development and demonstration for function enhancement based on digital technologies

【METI】 Development and demonstration of technologies to achieve low-cost, high-frequency on-orbit demonstration using satellites to expand opportunities for demonstration in space

【METI】 Acceleration of commercialization to secure autonomy for space traffic management

Telecommunication & Observation

【MIC】 Development of general-purpose ground antennas to expand the use of satellite communications

【MIC】 Development and demonstration of Q/V-band, etc. communication equipment

【MIC】 Development and demonstration of innovative onboard satellite antennas for next-generation satellite communications