SPACE STRATEGY FUND

Overview of the Space Strategy Fund (SSF)

Japan Aerospace Exploration Agency (JAXA)
Space Strategy Fund Department

JAXA's New Role: The Space Strategy Fund (SSF)

"Basic Plan on Space Policy" – Cabinet decision on June 13, 2023

"**Strengthen JAXA's strategic and flexible funding function. By doing so, JAXA will be utilized as a hub** for technology development and demonstration, human resources, and technical information among industry, academia, and government, both domestically and internationally"

"Comprehensive Economic Measures" – Cabinet decision on November 2, 2023

"**Establish a 10-year "Space Strategy Fund**" at the Japan Aerospace Exploration Agency (JAXA) …
with the aim of providing support of **1 trillion yen (approx. 6.7 billion $) in total as soon as possible**."

FY2023 Supplementary budget for the 1st phase Fund: JPY 300 billion (approx. 2.0 billion $)
(MEXT: JPY 150 billion, METI: JPY 126 billion, MIC: JPY 24 billion)

FY2024 Supplementary budget for the 2nd phase Fund: JPY 300 billion (approx. 2.0 billion $)

(MEXT: JPY155 billion, METI: JPY 100 billion, MIC: JPY 45 billion)

JAXA Missions

Space Strategy Fund

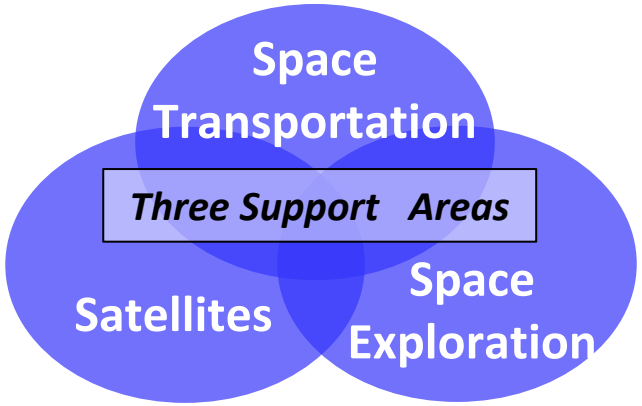
NEW! Since 2024

SSF Objectives/ Scheme

SPACE STRATEGY FUND

- The fund aims to accelerate and strengthen the achievements of the three goals.

*Remarks: This fund is for entrustment and grant allocation, not for equity investment



Three goals

- Expanding the space market

Double the size of Japanese domestic space market (4T JPY → 8T JPY (approx. 60B USD) in the early 2030s)

- Solving global and social issues

Contribute to solving global and social issues by utilizing space

- Pioneering frontier

Deeper exploration of knowledge in the universe, and stronger basic and fundamental technologies

SSF Direction of Technology Development

SPACE STRATEGY FUND

Space Transportation

- ✓ Establish low-cost space transportation systems that can accommodate the diversifying launching needs for satellites manufactured both in Japan and overseas.
  KPI: Improve Japan’s rocket launching capabilities by securing approx. 30 flagship and private rocket launches annually by the first half of 2030s.
- ✓ Establish industrial infrastructure to achieve the above target and ensure its independence and autonomy, while acquiring the technology required to realize new space transportation systems and enhance Japan’s overall international competitiveness.

Satellite

- ✓ Realize autonomous satellite systems that will increase international competitiveness of Japanese private companies (including startups) providing small to large-scale satellite services (communications, observation, etc.) and on-orbit servicing.
  KPI: Establish more than five satellite systems through domestic private companies by early 2030s.
- ✓ Establish the domestic industrial infrastructure to achieve the above target and ensure its independence and autonomy, while acquiring innovative satellite infrastructure technologies to improve Japan's overall international competitiveness.
- ✓ Expand space-related markets through the use of satellite systems, including those mentioned above.
  KPI: By the early 2030s, complete implementation of more than 30 major communications and satellite data utilization services by domestic private companies, etc. in Japan and overseas.

Exploration

- ✓ Ensure Japan's international presence in space explorations to the Moon, Mars and beyond, and initiatives to expand realms of human activity.
  KPI: By the early 2030s, ensure that domestic private companies, universities, etc. will participate in more than 10 new missions and projects to explore the Moon, Mars and beyond.
- ✓ Create and expand post-ISS businesses initiated by Japanese private companies from 2030 onwards.
  KPI: By the early 2030s, create more than 10 new business projects by Japanese companies utilizing low Earth orbit.
- ✓ In addition, leverage these opportunities to accomplish exceptional scientific results in fields such as solar system science and astrophysics, and contribute to large-scale international projects.

SSF Basic policy and Implementation policy

SPACE STRATEGY FUND

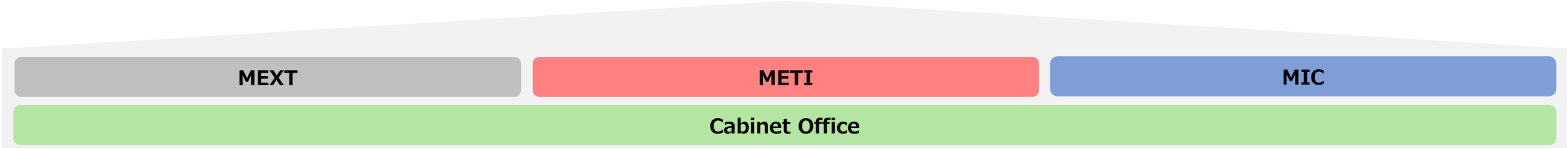
- The Ministries set the overall system design of the entire project as "Basic Policy" and specific details of the goals and content of each technology development theme as "Implementation Policy."
- In setting the technology development themes, reference is made to the technology items identified in the Space Technology Strategy.
- Themes that can be more effectively promoted by private companies and universities, rather than by JAXA itself, will be set as technology development themes.

Basic Policy

- Objectives and overview
- Goals, direction of technological development
- Setting of technological development themes and concept of goals
- Method of implementing technological development
- Technology development management
- Economic security considerations

Implementation Policy

- Technology development theme name
- Theme goal
- Technology development implementation content
- Technology development implementation structure
- Support method
- Evaluation and review points
- Technology development management



SPACE STRATEGY FUND

Summary of 1st Phase

(FY2023 Supplementary budget)

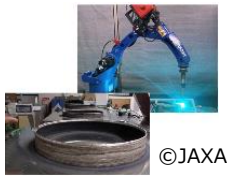
Technology Development Themes – 1st Phase 1/2

SPACE STRATEGY FUND

Transportation

【MEXT】Innovative technology for light weight- high performance and lower cost. (12B Yen) 4

【MEXT】Ground systems for future transportation. (15.5B Yen) 2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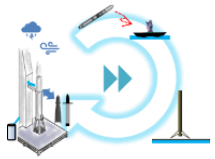
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【METI】Mass production technology development for main materials of solid rocket motor. (4.8B Yen) 1

【METI】Development of integrated navigation system for space transportation. (3.5B Yen) 1

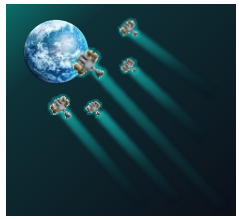

Experiment of Solid rocket booster

Satellites

【MEXT】Optical observation satellite system with high resolution/high frequency. (28B Yen) 1

【MEXT】Innovative satellite LiDAR technology utilizing high power laser. (2.5B Yen) 1

【MEXT】High accuracy satellite formation flight technology. (4.5B Yen) 3


Formation Flight image

【METI】Accelerating commercial satellite constellation deployment. (95B Yen) 4

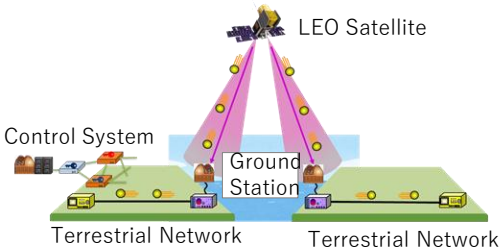
【METI】Development/verification of parts/components for establishing satellites supply chain. (18B Yen) 10

【METI】Feasibility study of overseas demonstration of satellite data utilization system. (1B Yen) 7

【MIC】Development/verification of satellite communication technology with quantum cryptography. (14.5B Yen) 1

【MIC】Supporting implementation of communication technology required for satellite constellation. (1.9B Yen) 1


Satellite Constellation



Quantum Cryptography Network

# of proposals selected

Technology Development Themes – 1st Phase 2/2

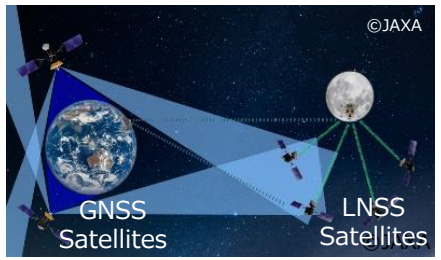
SPACE STRATEGY FUND

Exploration

Lunar Development

【MEXT】Development of Lunar Positioning System Technology. (5B Yen) 1

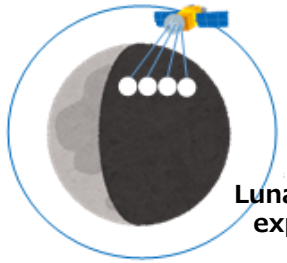
【MEXT】Development of Regenerative Fuel Cell System. (23BYen) 1



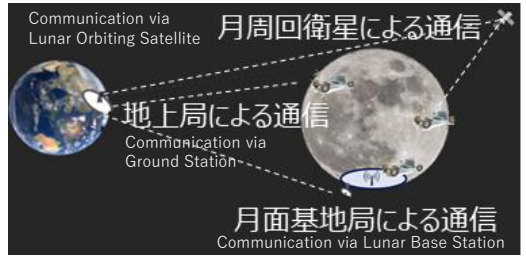
Lunar Positioning System Image

【MEXT】Fundamental technology for Semipermanent power supply. (1.5B Yen) 1

【MIC】Technology for lunar water resource exploration. (6.4B Yen) 1


Lunar water resource explaration Image

【MIC】Feasibility Study for development/verification of Cislunar communication. (0.5B Yen) 2



Cislunar commnication system Image

LEO Utilization

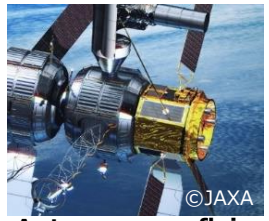
【MEXT】Technology for cargo delivery system with international competitiveness and independence. (15.5B Yen) 2

【MEXT】Technology for LEO autonomous flying module system. (10B Yen) 1

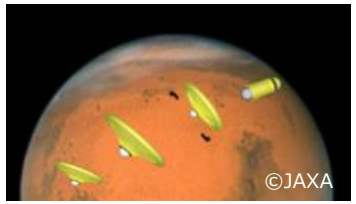
【MEXT】Technology for LEO universal experiment system. (2B Yen) 1

Mars Exploration

【MEXT】Fundamental low cost technology for atmospheric entry/aerodynamic damping. (10B Yen) 1



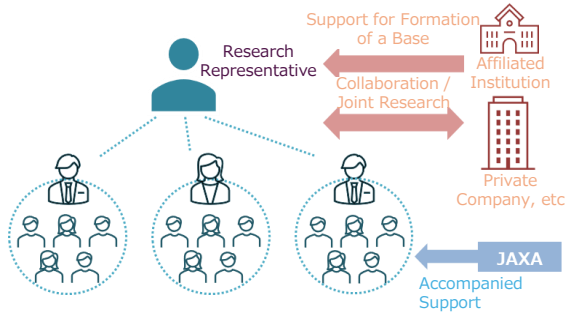
Automomous flying module image



Expanded Aeroshell Image

Common Development

【MEXT】SX research and development site (11B Yen) 5



Selection Results – 1st Phase – Transportation

SPACE STRATEGY FUND

Domain		Technology Development Themes		Representative Organization	selection date
Transportation	1	【MEXT】Innovative technology for light weight- high performance and lower cost of of space transportation systems	A	MaruHachi	January 30, 2025
			B- 1)	Nikon	October 25, 2024
			B- 2)	SHIMIZU	October 25, 2024
				Mitsubishi Heavy Industries	October 25, 2024
	2	【MEXT】Ground systems for future transportation	Recovery	Nippon Yusen Kabushiki Kaisha	December 20, 2024
			Ground	SPACE COTAN	January 17, 2024
	3	【METI】Development of integrated navigation system for space transportation		Mitsubishi Precision	November 15, 2024
	4	【METI】Mass production technology development for main materials of solid rocket motors		IHI Aerospace	January 31, 2025

Selection Results – 1st Phase – Satellites

SPACE STRATEGY FUND

Domain		Technology Development Themes		Representative Organization	selection date
Satellites	1	【MEXT】High accuracy satellite formation flight technology		Interstellar Technologies	December 20, 2024
				The University of Tokyo	December 20, 2024
				Nagoya University	December 20, 2024
	2	【METI】Accelerating commercial satellite constellation deployment		ArkEdge Space	November 29, 2024
				iQPS	November 29, 2024
				Synspective	November 29, 2024
				NEC	November 29, 2024
	3	【METI】Development/verification of parts/components for establishing satellites supply chain	(A)	WEL Research	February 28, 2025
				NEC Space Technologies	
				NU-Rei	
				Composite Tailors	
				SHARP ENERGY SOLUTIONS	
				GS Yuasa Technology	
				Mitsubishi Electric	
			(B)	Mitsubishi Electric	February 28, 2025
			(C)	INDUSTRIAL-X	February 28, 2025
				ASTEC	
	4	【MEXT】Optical observation satellite system with high resolution/high frequency		Marble Visions	November 29, 2024
	5	【MEXT】Innovative satellite LiDAR technology utilizing high power lasers		Kyoto University	November 29, 2024
	6	【METI】Feasibility study of overseas demonstration of satellite data utilization system.	(A)	UMITRON	February 7, 2025
				Ocean Eyes	
				OCEAN SOLUTION TECHNOLOGY	
				Space Tech Accelerator	
				Solafune	
				PACIFIC CONSULTANTS	
			(B)	Japan Space Forum	
	7	【MIC】Development/verification of satellite communication technology with quantum cryptography		National Institute of Information and Communications Technology	December 20, 2024
	8	【MIC】Supporting implementation of communication technology (optical router) required for satellite constellation.		NEC	November 22, 2024

Selection Results – 1st Phase – Exploration/Common Development

SPACE STRATEGY FUND

Domain		Technology Development Themes		Name of Representative Organization	Selection date
Exploration	1	【MEXT】Lunar positioning system technology		ArkEdge Space	November 22, 2024
	2	【MIC】Development/verification of technology for lunar water resource exploration（sensing technology）		Institute of Science Tokyo	February 14, 2025
	3	【MIC】Development/verification of a lunar-earth communication system (FS)		KDDI	November 15, 2024
				Fukui University of Technology	November 15, 2024
	4	【MEXT】Technology for LEO universal experiment system		Space BD	November 22, 2024
	5	【MEXT】Technology for LEO autonomous flying module system		Japan LEO Shachu	November 15, 2024
	6	【MEXT】Technologies related to internationally competitive, self-reliant, and flexible material supply systems	A)	Japan LEO Shachu	December 13, 2024
			B)	IHI Aerospace	December 13, 2024
	7	【MEXT】Regenerative fuel cell systems		TOYOTA MOTOR	November 29, 2024
	8	【MEXT】Fundamental low cost technology for atmospheric entry/aerodynamic damping		Next generation Space System Technology Research Association	January 10, 2025
	9	【MEXT】Fundamental technology for semi-permanent power supply systems		Japan Atomic Energy Agency	January 10, 2025
Common Development	1	【MEXT】SX research and development site		National Astronomical Observatory of Japan	January 31, 2025
				The University of Tokyo	
				The University of Tokyo	
				Nagoya University	
				Ritsumeikan Trust	

SPACE STRATEGY FUND

Introduction of 2nd Phase

(FY2024 Supplementary budget)

Technology Development Themes – 2nd Phase
Transportation (5 themes) 1/2

SPACE STRATEGY FUND

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

Total amount（max）: approx. 8.5B Yen
# of Project TBE : 1～2
Timing of SG : approx. 3rd year
Period（Max） : approx. 5 years

Developing and demonstrating fundamental system technology for automated launch site operation and improving usability, aiming to realize unprecedented “smart launch site” to secure and strengthen business viability.

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

Total amount（max） : approx. 0.5B Yen
# of project TBE : approx. 1
Timing of SG : approx. 1st year
Period（max） : 2 years

Researching and verifying the cost-effectiveness and development/production of common equipment (e.g. interfaces of fuel supply to launch vehicles from launch facilities) to reduce the workload of launch vehicle operators.

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

Total amount（max） : approx. 10B Yen
# of project TBE : approx. 2～4
Timing of SG : approx. 2nd year
Period（max） : approx. 3 years

Developing core technologies (manned cabin, anomaly detection & emergency evacuation systems) for future commercial space transportation services, such as fast point-to-point transportation
and space tourism.

Technology Development Themes – 2nd Phase
Transportation (5 themes) 2/2

SPACE STRATEGY FUND

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

Total amount（max）: approx. 24.5B Yen
# of Project TBE : approx. 10
Timing of SG : approx. 2nd year
Period（max）: 4 years

Image of rocket structure

Developing innovative technology for the rocket manufacturing process for high-frequency launches by improving the efficiency of difficult and special machining of rocket structures, improving the efficiency of manual work such as assembly, and improving the efficiency of quality assurance inspections to shorten lead times and reduce costs.

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

Total amount（max）: approx. 19.5B Yen
# of Project TBE : approx. 10
Timing of SG : approx. 2nd year
Period（max）: 4 years

Image of rocket parts

Developing technologies for mass production of rocket components, fuel, and other parts and components, as well as for downsizing, weight reduction, increased functionality, and lower cost to achieve globally competitive high-frequency launches.

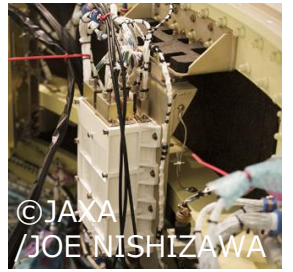


Image of rocket component

Technology Development Themes – 2nd Phase
Satellites (11 themes) 1/3

SPACE STRATEGY FUND

On-orbit Servicing

【MEXT】Technology to realize flexible spatial mobility

Total amount（max） : approx. 30B Yen
# of Project TBE : approx. 3～6
Timing of SG : approx. 2nd、4th 、6th year
Period（max） : approx. 6 years

Integrally promoting development and demonstration of the orbital transfer vehicle and development of core technologies for on-orbit refueling, as well as R&D for space logistics that enable integrated operation of the services.

【MEXT】Technology to realize flexible utilization of on-orbit environment

Total amount（max） : approx. 16.5B Yen
# of Project TBE : approx. 4～7
Timing of SG : approx. 2nd or3rd year
Period（max） : approx. 5 years

Developing and demonstrating on-orbit manufacturing and assembly technology without the constrains of launching capabilities and developing on-orbit removal technology, space situational awareness technology.

Technology Development Themes – 2nd Phase
Satellites (11 themes) 2/3

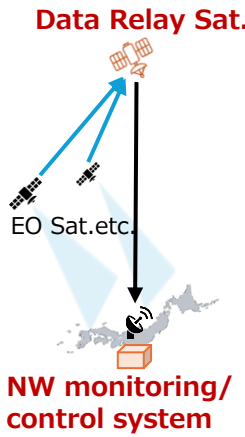
SPACE STRATEGY FUND

Telecommunication Servicing

【MIC】Research and development for data relay services with satellite optical communications

Total amount（max） : approx. 23.5B Yen
# of Project TBE : 1
Timing of SG : approx.3rd year
Period（max） : approx. 5 years

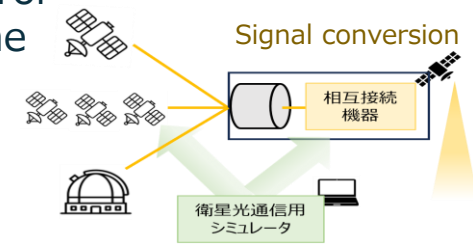
Establishing satellite optical communication technology (data relay) between GEO and LEO etc., and developing a system controlling and monitoring the network, for commercial provision of orbital data relay services by Japanese operators.



【MIC】Development of terminal interconnection technology to expand the deployment of satellite optical communications

Total amount（max） : approx. 3B Yen
# of Project TBE : 1～2
Timing of SG : approx. 1st year
Period（max） : 3 years

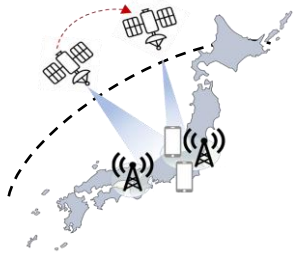
Developing satellite optical communication terminal interconnecting technology and software to support acquisition, tracking, satellite attitude control and etc. to expand the deployment and use of satellite optical communication.



【MIC】Development of frequency sharing, etc. for integrated satellite and terrestrial operations

Total amount（max） : approx. 11B Yen
# of Project TBE : 1
Timing of SG : approx. 3rd year
Period（max） : approx. 5 years

Developing and demonstrating frequency-sharing technology on non-GEO satellites and terrestrial communications for integrated operations controlled by Japanese operators.



Technology Development Themes – 2nd Phase
Satellites (11 themes) 3/3

SPACE STRATEGY FUND

Satellite Data Servicing

【MEXT】Advanced technology to accelerate the use of Earth observation data

Total amount（max） : approx. 4B Yen
# of Project TBE : 3
Timing of SG : approx. 3rd year
Period（max） : approx. 6 years

Developing and demonstrating integrally multimodal innovative solutions and user interface, to expand market with new end-users, utilizing satellite earth environmental data that are currently not fit for commercial usage.

【METI】Implementation of satellite data utilization system

Total amount（max） : approx. 17.6B Yen
# of Project TBE :
（A）approx.30（B）approx.5（C）1～3
Timing of SG : approx. 2nd year
Period（max） : 5 years

(A)Developing satellite data application systems, (B) Establishing foundations for overseas deployment, and (C) Developing mechanisms for satellite data application systems to gain satellite data solution businesses (observation, positioning, etc.).

Satellites Common Technology

【MIC】Feasibility study for satellite bus and terminal for optical communications

Total amount（max） : approx. 0.4B Yen
# of Project TBE : 2
Timing of SG : approx. 1st year
Period（max） : 2 years

Feasibility studying technical requirements, prices and etc. to ensure the global competitiveness of satellite buses and terminals for optical communications and studying measures to establish the industrial base in 2030s and beyond.

Satellites Common Technology

【MIC】Technology for globally competitive communications payloads

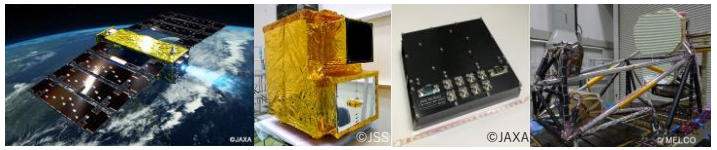
Total amount（max） : approx. 5.8B Yen
# of Project TBE : 1
Timing of SG : approx. 2nd year
Period（max） : approx. 5 years

Developing and demonstrating technologies for the advanced communication payloads to meet the needs of flexibility of satellite functions, etc., to achieve international competitiveness in function and price, and to ensure independent production capabilities of communication payloads.

【MEXT】Technology to enhance capability of next generation earth observation satellites

Total amount（max） : approx. 10B Yen
# of Project TBE : 3
Timing of SG : approx.3rd 、5th year
Period（max） : approx. 6 years

Developing and demonstrating innovative earth observation technologies (contributing to enabling new observation functions, higher resolution, wider coverage, and reduced mass/size) needed for internationally competitive next-generation earth observation satellites.



【METI】Innovative Satellite Mission Technology

Total amount（max） : 12B Yen
# of Project TBE : approx. 3
Timing of SG : approx. 2nd year
Period（max） : 5 years

Accelerating the development and demonstration of systems and business models for new satellite services that capture large future markets through advanced and innovative technology, with the aim of developing global competitive Japanese satellite business, attracting businesses outside the space industry.

Technology Development Themes – 2nd Phase

Exploration (5 themes)

SPACE STRATEGY FUND

LEO Utilization ©JAXA

【MEXT】Technology to develop LEO orbital data center

Total amount（max） : approx.13.5B Yen
# of Project TBE : approx. 1
Timing of SG : approx. 2nd year
Period（max） : approx. 5 years

Developing and demonstrating the technology required for an orbital data center embedded in a module with advanced processing and optical communication capacity as well as high usability to build the hub for on-orbit data processing and communications.

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

Total amount（max） : approx. 6.5B Yen
# of Project TBE : approx. 1
Timing of SG : approx. 2nd year
Period（max） : approx. 5 years

Developing and demonstrating the technology for improved external environment utilization efficiency using AI and IoT to improve usability and reduce the cost of external experiments in space environment.

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

Total amount（max） : approx. 2.5B Yen
# of Project TBE : approx. 1
Timing of SG : approx. 2nd year
Period（max） : approx. 3 years

Developing and demonstrating the technology for a high-frequency cargo return system from LEO to retrieve samples from the on-orbit station on a highly frequence and immediate basis.

Lunar Development

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

Total amount（max） : approx.20B Yen
# of Project TBE（max） : approx. 1
Timing of SG : approx. 2nd 、3rd year
Period（max） : approx. 4 years

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

Total amount（max） : approx.8B Yen
# of Project TBE : approx. 3～5
Timing of SG : approx. 2nd、4th year
Period（max） : approx. 5 years

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
Common Development (3 themes)

SPACE STRATEGY FUND

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

Total amount（max） : approx.11B Yen
# of Project TBE : approx. 5
Timing of SG : approx.3rd （and 5th ） year
Period（max） : approx. 5 years

Creating innovative results in featured technologies and fields through introducing non-space sectors' technologies and creating seeds leading to new space businesses by establishing a system with university researchers as its core to build internationally competitive centers focusing on such system and the region.

【METI】Solutions for spacecraft environmental testing challenges

Total amount（max） : approx.23B Yen
#of Project TBE（A）approx. 2 （B）approx.4
Timing of SG : approx.2nd year、4th year
Period（max） : approx. 5 years

Aiming to establish a space industry ecosystem, developing technologies to expand test capabilities, improve efficiency, reduce costs, and diversify and optimize test evaluation criteria, etc., to solve problems in (A) various environmental tests (excluding radiation tests) and (B) radiation tests for spacecraft, etc.

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

Total amount（max） : approx.10B Yen
# of Project TBE : approx.20～40
Timing of SG : approx.2nd year
Period（max） : approx. 3 years

Developing and conducting early demonstration of challenging and exploratory elemental technologies with the participation of various players from private companies and universities in the areas ("thermal and device" and "motion and control") identified to address bottlenecks in future space development and utilization.

Image of environmental test

※For proposals involving space demonstrations that require launch and other coordination, the period may be extended depending on the results of the SG evaluation and other factors.
※Expenditures other than the above will be made as general and administrative expenses.

FAQ about SSF

Q1: Is the SSF for equity investment?

- No. SSF is used for entrustment and subsidy from JAXA.

Q2: Can foreign companies apply to the SSF?

- The eligible applicants are private companies, universities, National Research and Development Agencies, etc. incorporated under the laws of Japan and having its R&D place in Japan. In addition, only residents of Japan are qualified to be Principle-Investigator or Co-Investigator of applicants.

Q3: How foreign companies can contribute to?

- We would like foreign companies to partner with Japanese companies. The Japanese companies can apply an international project proposal to the SSF.

  e.g., FS of overseas demonstration of satellite data utilization system. (1B Yen in 1st Phase)

Q4: How foreign Space Agency can cooperate with JAXA?

- We are considering a co-fund like scheme (TBD) in which both space agencies subsidize to an international project in which Japanese and foreign companies are partnering. The scheme is under discussion.

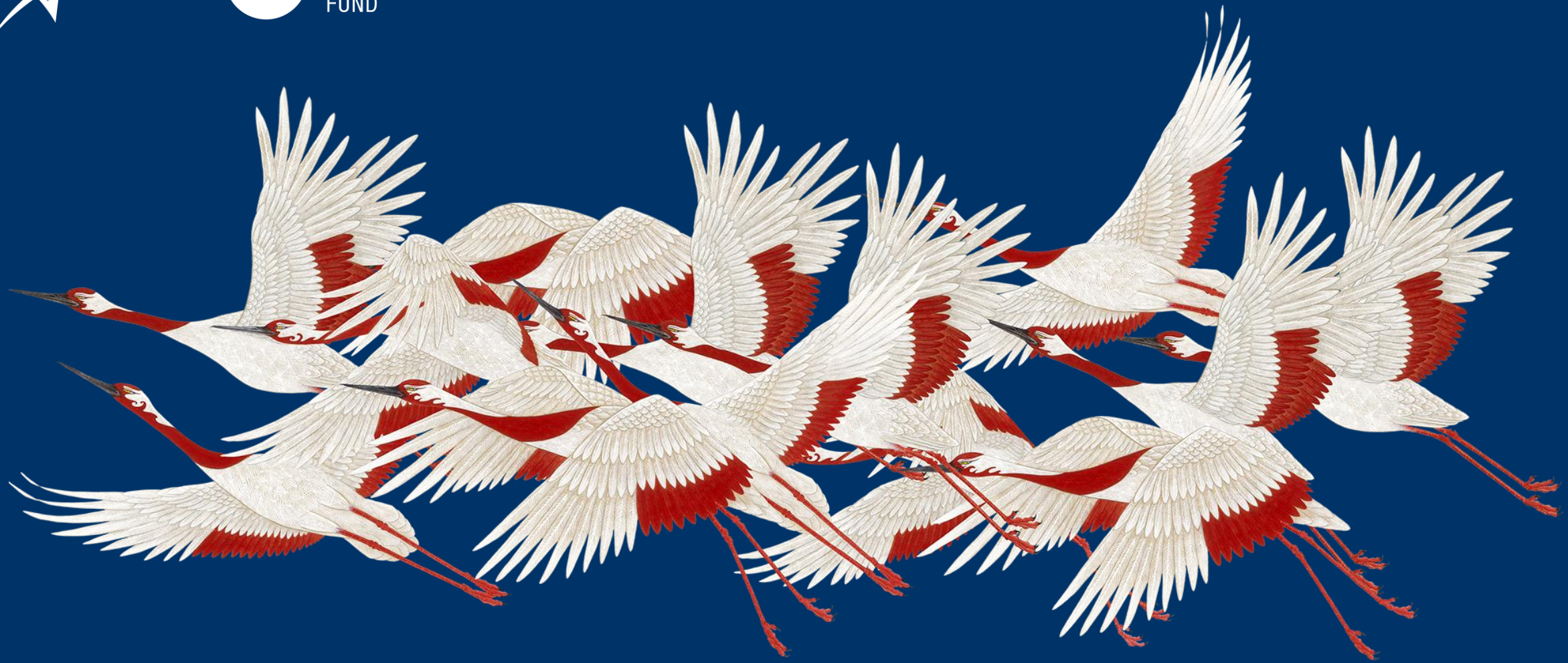
Detailed Information of SSF (Sorry, Japanese only)

Cabinet Office HP
The Space Strategy Fund

JAXA The Space Strategy Fund website

JAXA

SPACE
STRATEGY
FUND



Cranes have been loved as a good-luck charm in Japan since ancient times, and in winter they migrate to faraway wintering grounds. When they do so, **they fly in formation**, and it is said that they can fly farther as a flock by riding the air currents created by the flapping wings of the bird in front. **Three birds can fly farther than one.**

This overlaps with the Space Strategy Fund's desire to “catapult Japan's space industry forward" as a hub for industry, academia, and government.