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Government Space Programs

A comprehensive overview of government space strategies,
activities, and budgets until 2033

A Novaspace Report

December 2024
24th Edition

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ABOUT THIS MARKET INTELLIGENCE REPORT

Scope

Government Space Programs is a comprehensive assessment covering more than 90 countries and organizations investing today or tomorrow in space, with detailed analysis of their national programs and space budgets.

The report is built on Euroconsult's extensive heritage in estimating government space budgets, an activity that began in the early 1990s. Since then, the Government Space Programs (GSP) report has evolved into a continuous, year-round data-gathering exercise led by a dedicated team of space experts.

Extensive figures & analysis for the coming decade

This report contains the following information:

- **A Strategic Outlook** presenting and analyzing global trends, forecasts and benchmarks by regions and space applications.
- **Detailed profiles of 90+ world space programs**, each including policy and strategy objectives, governance tables and organigrammes, space expenditures, civil space programs, defense & security space programs and mission roadmaps, covering **six world regions**: North America, South America, Europe, Russia & Central Asia, Middle East & Africa, and Asia.
- **Two time periods of reference**: 2014-2023 for historical trends and 2024-2033 for future forecasts and an **extensive Excel budget database**, with thousands of data points covering annual space budgets from 1990 to 2033.



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Government Space Programs

Benchmarks, Profiles & Forecasts for the next decade.

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<p>Analysis of 90 national government space programs and budgets in PDF format, including strategic priorities, space policy analysis, space program description by application, and 10-year space mission roadmap.</p> <p>Excel database including historical data and forecasts of consolidated space budgets split by space application and geographical region</p>		<p>All classic options</p> <p>Individual online country profiles and budget data updated quarterly</p> <p>Online interactive analytics and graphs</p> <p>Access to last 5 editions of the report (PDF format) Dedicated presentation session by Novaspace expert.</p>	

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A global picture of government space programs

Government Space Programs (GSP), now in its 24th edition, is designed to provide an economic and strategic assessment of government space programs worldwide. This flagship market intelligence product provides an analysis and benchmark of all public spending and space programs. It further identifies global trends related to government space policies, programs, and budgets.

The report is built on Novaspace's extensive heritage in estimating government space budgets, an activity started in the early 1990s. Since then, the Government Space Programs (GSP) report has evolved into a continuous, year-round data-gathering exercise led by a dedicated team of space experts.

Disclaimer

Exchange rates used in this report's budget are annual averages, the latest being 2022. 2022 averages have been chosen to minimize exchange rate volatility.

Further macroeconomic data have been used; 2022 PPP conversion rates from the IMF have been chosen to harmonize with exchange rates. World bank 2024 population and 2022 GDP forecasts were utilized to calculate per-capita and GDP spending.

Due to strong uncertainties and the current geopolitical situation, the Ukrainian profile has not been actualized in this edition of the report.

This report contains the following information:

A Strategic Outlook presenting and analyzing global trends, forecasts and benchmarks by regions and space applications.

Detailed profiles of more than 90 space programs, covering virtually all countries and international organizations (EU, ESA, ESO, and EUMETSAT) currently investing in space.

A factsheet with high-level takeaways and key metrics of each space program, including total space budget in 2024, top 3 applications, space spending per capita and as a % of GDP, select high-profile missions and satellites launched, data availability score, and more.

Civil & Defense organizations investing in space, assessed both jointly and separately.

Six world regions: North America, South America, Europe, Russia & Central Asia, Middle East & Africa, and Asia.

Detailed profiles of 90 world space programs, each including policy and strategy objectives, governance tables and organigrammes, space expenditures, civil space programs, defense & security space programs and missions' roadmap.

Two time periods of reference: 2014-2024 for historical trends and 2025-2033 for future forecasts and an **extensive Excel budget database**, with thousands of data points covering annual space budgets from 1990 to 2033.

List of analyzed countries and organizations

GSP includes the analysis of space budgets and space programs of nearly every country in with a dedicated space budget envelope, totaling 94 governments and international organizations such as the European Space Agency (ESA), the European Southern Observatory (ESO), the European Union (EU), and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT). The list of countries and organizations evolves each year according to the latest news in the sector.










Countries and organizations are organized in six world regions. The nine space applications included in this report and their definitions are included in the table on the right.

2024 - Methodology update

Starting with the 2024 edition, only half of the 90+ country and organization profiles will be updated annually. This approach allows for a more in-depth focus on countries of greatest interest and those experiencing significant developments in recent months. Regional organizations such as EUMETSAT, ESA, ESO, and the EU will continue to be analyzed each year. Similarly, countries with the largest space budgets will also receive yearly updates.

Meanwhile, the profiles of countries with fewer developments in their space sectors will be updated biennially. However, budget forecasts for these countries will still be refreshed annually to ensure accurate calculations of global governmental space expenditures for the current year and beyond.

Main satellite applications

Application	Definition
 Earth Observation	Satellites for electro-optical and radar observation of the Earth both for operational and research purposes. Also includes GNSS radio occultation (GPS-RO) and IMINT satellites for defense agencies
 Satellite Communications	Satellites for communications services including voice, data, internet, and TV / radio broadcasting.
 Navigation	Includes Global Navigation Satellite Systems (GNSS) providing positioning, location and time information, as well as Satellite-Based Augmentation Systems (SBAS)
 Meteorology	Satellites monitoring weather and climate
 Security	Satellites for space situational awareness (SSA), missile early warning, near-Earth object monitoring, electrical intelligence (ELINT), RF monitoring, and space weather
 Technology	Technology-development satellites built to test new technologies; some technology-development satellites may serve other applications on a non-operational basis.
 Science & Exploration	Spacecraft for Moon, Mars, other deep space exploration as well as Astronomy, astrophysics and heliophysics, and solar-terrestrial interactions among others
 Human Spaceflight	Includes the development and operation of orbital infrastructures and transportation vehicles designed to carry cargo and humans into Earth orbit, around and on the Moon, and potentially beyond
 Launch activities	Includes the development of rocket technologies and spaceports, excluding crewed transportation technologies

Additional applications are included for some countries such as on-orbit services, early warning, etc.

Budget calculation methodology

Budgets are categorized as either civil or defense, depending on the funding source. For example, all investments made by the Ministry of Defense – or equivalent – are considered defense spending, while space expenditures by civil organizations fall under civil spending.

Different sources of information were used to calculate and estimate countries' space budgets:

- **Desk research:** official government space budgets, press releases, media reports, specialized subscription-based articles, and more.
- **Internal estimates:** based on a bottom-up approach, we apply pricing estimates for space missions according to factors and proxies such as a mission's complexity, mass, orbit, payload, bus, and application. Internal operations expenditures are calculated based on similar entities. Regarding our forecasts, national strategies are considered, as well as other documents, to estimate the feasibility of these public objectives. In some cases, future and unannounced satellites are included based on some factors such as the need for satellite replacement. A top-down final review for each profile ensures that estimated government space budgets conform with known metrics and factors.
- **Stakeholder consultations:** for each country, an official representative is contacted (either at the civil or defense level), if possible, within space agencies or ministries in charge of space activities, to confirm our assumptions, verify the accuracy of some information and better refine our predictions.

The specific case of European countries

States' contributions to ESA, EUMETSAT, and ESO are included in the countries' civil space budgets, though they constitute separate budget lines. This calculation is based on official reports provided by these organizations, as well as forecasts for years to come.

To avoid double counting, EU member states' contributions to the EU's space programs are excluded from national civil budgets and counted as EU spending, under the EU profile and budget.

Data availability score

Country and organization profiles now include information regarding the public availability of government space budgets, measured on scale ranging from 1 (lowest score, no information available) to 5 (highest score, detailed information available):

Score	Rationale
1	No public information regarding the budget and/or space activities is available
2	Some information regarding the country's space activities is available, notably through 3 rd party sources such as press releases or analysts' estimates.
3	Government information regarding the country's total space budget (though not broken down by program) and activities is available and/or national space representatives have provided Novaspace with data via a written/oral interview
4	Official, detailed government sources on civil space expenditures (i.e., government budgets) are publicly made available, but no detailed defense information (if applicable)
5	Civil and defense space budgets, as well as detailed information regarding space activities, are available (only the civil if the country has no defense budget)

01

Executive summary

GLOBAL TRENDS FOR SPACE BUDGETS

Record growth in government space budgets

In 2024, government space budgets surged to \$135 billion, marking a 10% increase compared to 2023 and setting a record high for government space investments.

During the 2000s, space budgets grew rapidly, particularly in defense, driven by geopolitical tensions in the Middle East and the aftermath of the September 11 attacks in the U.S. This growth slowed in the 2010s due to financial constraints caused by the global financial crisis and the end of the Iraq War in 2011. However, since 2016, the sector has seen consistent and uninterrupted growth.

Anticipated stabilization in the near future

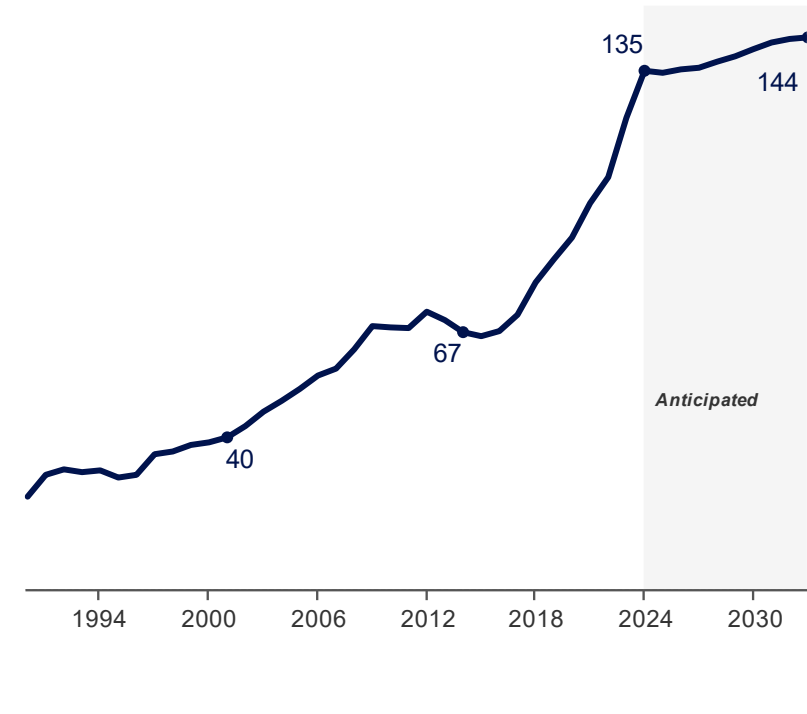
In the near future, government space budgets are projected to stabilize, with growth moderating to around 1% annually from 2025 to the end of the decade. While governments remain focused on accomplishing ambitious goals across civil and defense space initiatives, the rapid growth of previous years is expected to normalize. This change highlights the mounting challenges of sustaining significant budget increases, given fiscal pressures and competing policy demands.

Rising defense dominance in government space budgets

In 2024, civil space budgets reached almost \$62 billion, while defense spending exceeded \$73 billion, accounting for 54% of total expenditures. Since 2022, defense budgets have consistently surpassed civil space investments, with the gap widening due to recent surges in government funding for defense-related initiatives. However, this disparity is projected to narrow slightly by the end of the decade.

World total government space expenditures (1990-2033)

In billion USD



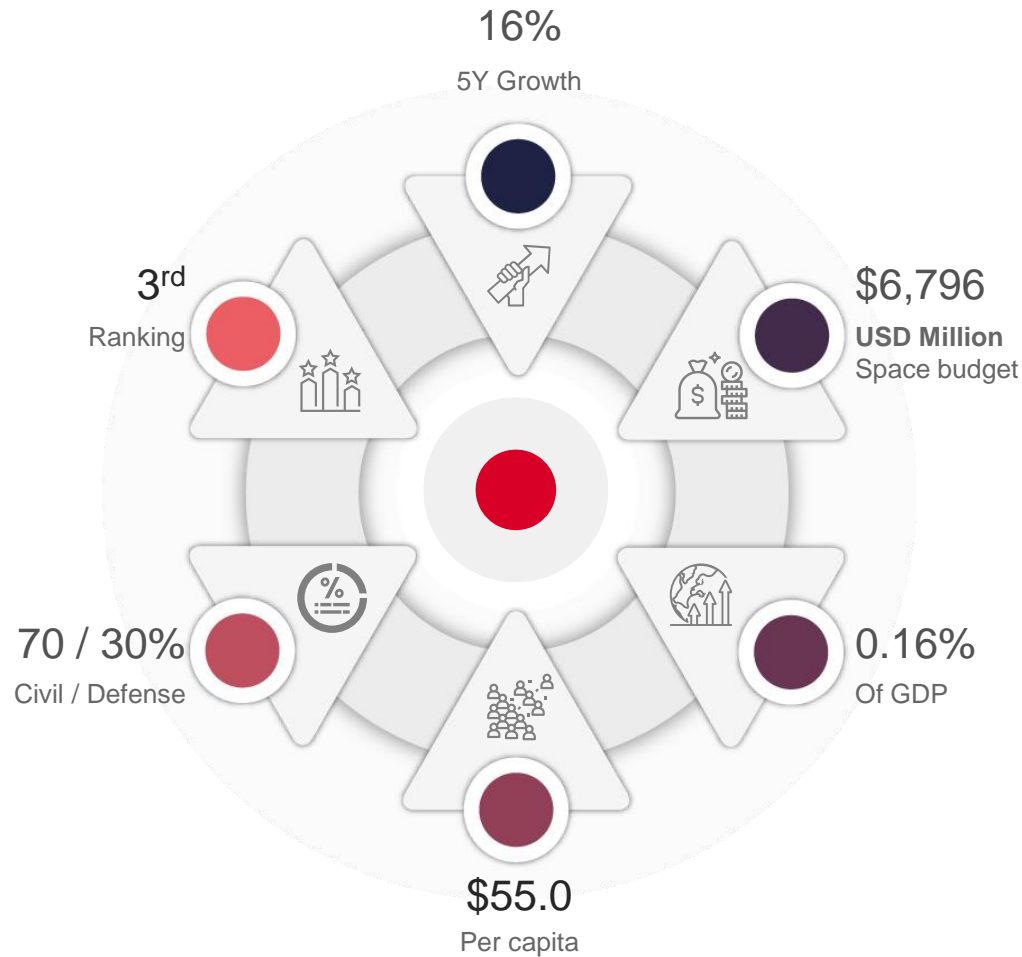
02

Government space programs profiles

Extract from the Japan profile

Japan 2024

Updated August 2024



Data Availability



Top 3 applications



USD million

2,897 (43%)

1,582 (23%)

475.9 (7%)

5Y CAGR

84%

9%

31%

Sample of selected missions



2025
ETS-9



2025
QZSS-6



2024
ALOS-4



2027
Himawari-10



2023
SLIM



2024
S. Furukuwa



2026
H3



2023
IGS Radar 7

JAPAN POLICY AND STRATEGIC OBJECTIVES

Revision of the Space Policy Roadmap

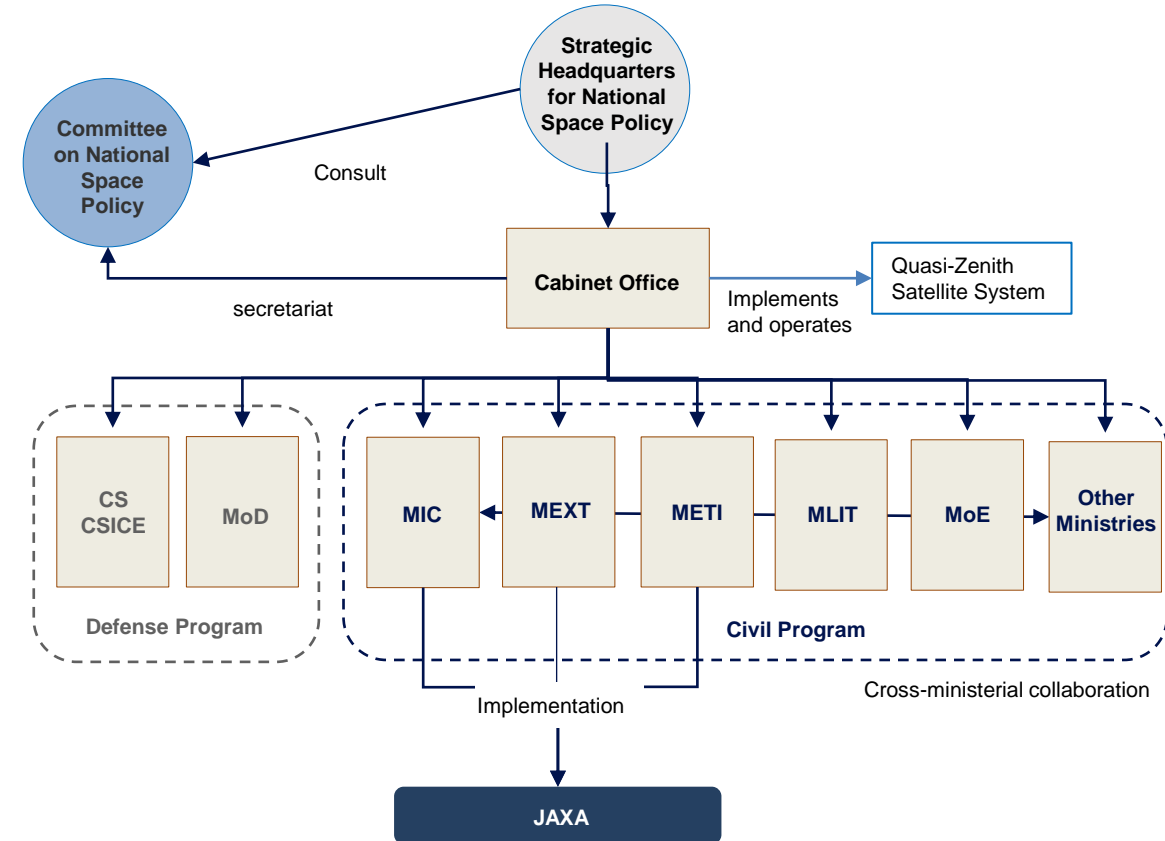
In 2023, Japan initiated its 5th Basic Plan on Space Policy, outlining a 20-year roadmap. The new plan targets expanded space utilization and self-sustenance, organized around four core pillars, which encompass multiple initiatives:

- **Ensuring space security** by enhancing satellite constellations, communication networks, and satellite positioning, ensuring safe utilization of space systems, contributing to international norms, and using civilian space technology for security.
- **Realizing national resilience and responding to global issues**, notably by developing next-gen communication, remote sensing and positioning technologies to address disasters, infrastructure management, carbon neutrality, and innovations like automated driving and smart cities.
- **Creating new knowledge and industries in space science and exploration** by developing lunar exploration, enhancing international perspectives, collaborating on large-scale space telescope programs and promoting private sector engagement.
- **Strengthening comprehensive infrastructure** to enhance launch capabilities, counter space debris, and establish norms for Space Traffic Management (STM).

Japan’s space policy centers on advancing technology, fostering collaborations, supporting competitive industries, and envisions implementing and commercializing space technology for government-led missions. The updated roadmap highlights key milestones: a strategic “Space Technology Strategy” guides technology development and promote demonstrations; the establishment of a Space Domain Awareness System (SDA); a 2025 SAR constellation; Martian Moons eXploration (MMX) to be launched in 2026; Japanese lunar missions, and private sector collaboration for crewed rovers. Japan enacted a dedicated space resource exploration law in 2021, allowing private operators to exploit space resources.

Organization

● Space agency ● Government ministry ● Other institutional body



CS: Cabinet Secretariat
 CSICE: Cabinet Satellite Intelligence Center
 MoD: Ministry of Defense
 MOE: Ministry of the Environment
 JAXA: Japan Aerospace Exploration Agency

METI: Ministry of Economy, Trade and Industry
 MLIT: Ministry of Land, Infrastructure, Transport and Tourism
 MIC: Ministry of Public Management, Home Affairs, Posts and Telecommunications
 MEXT: Ministry of Education, Culture, Sports, Science and Technology

JAPAN POLICY AND STRATEGIC OBJECTIVES

Adoption of the first space security blueprint

Japan’s space security strategy has evolved from focusing solely on peaceful space use to a more proactive and interconnected approach. The turning point came with the 2018 **National Defense Program Guidelines** (NDPG), addressing defense-related space activities. More recently, Japan adopted strategic documents in 2022, **the National Security Strategy (NSS), National Defense Strategy (NDS), and Defense Buildup Program (DBP)** which outline a three-fold approach:

1. **Security from space:** focusing on establishing a high-precision information collection system, resilient communication infrastructure, advanced satellite positioning.
2. **Security in space:** enhancing Space Domain Awareness (SDA), optimizing satellite life cycles, enabling swift government responses, and contributing to global space norms.
3. **Support and development of the space industry:** strengthening technology development capabilities, improving public-private collaboration.

New Space Technology Strategy

In 2023, the government announced the launch of a 10-year ¥1 trillion (\$7.6 billion) Space Strategy Fund. This fund aims to support private companies and universities in developing and commercializing advanced space technologies.

By March 2024, the government completed this initiative by adopting the **Space Technology Strategy**, which outlines a roadmap specifying priority technology areas and timelines for diverse kinds of satellites, space transportation, space science and exploration, and other technologies. The strategy also provides guidelines for ministries on selecting technology development themes for the Space Strategy Fund.

Document	Content	Date
Basic Space Law	Japanese Law that defines the basic framework for space development and utilization in Japan.	Enacted in 2008
Basic Plan on Space Policy	Formulated to develop policies regarding Japan's space development; based on the Basic Space Law .	1st: 2009, 2nd: 2013, 3rd: 2015, 4th: 2020
Implementation Schedule of the Basic Plan	Description of the targets, their annual status and level of achievement, and initiatives for the following year for each measure in the Basic Space Plan .	Introduced from the third Basic Space Plan. Revised every year.
National Security Strategy (NSS)	National security policy with a focus on diplomacy, defense, and a long-term perspective, including efforts to enhance space security.	Approved in 2022
National Defense Strategy (NDS)	Implement a three-pronged approach to meet Japan's defense objectives, including space capability development, based on the NSS .	Approved in 2022
Defense Buildup Program (DBP)	Aligned with the NSS and NDS , Japan's defense program aims to establish military forces that can engage in versatile and coordinated operations to potential armed conflict, by notably relying on space capabilities.	Approved in 2022
Space Technology Strategy	Provides a roadmap guiding the implementation of the Space Strategy Fund in four sectors (satellites, space transportation, space science & exploration, and other technologies)	Approved in 2024

JAPAN SPACE EXPENDITURES

National spending boosted by the Strategy Fund

In 2024, Japan's government allocated ¥894 billion (approximately US\$6.8 billion) for space-related expenditures. This budget, distributed across nine ministries, the Prime Minister's Cabinet Office, and the Cabinet Secretariat, marks a significant increase of over 46% compared to the previous year's budget of ¥612 billion. The significant increase in funding is primarily due to major investments in Technology, spurred by the recent creation of the Space Strategy Fund. This fund has pledged ¥1 trillion (US\$7.6 billion), with approximately ¥300 billion (US\$2.2 billion) already invested in 2024 across both the civil and defense sectors.

Japan's civil space budget, at ¥621 billion (US\$4.7 billion), is well-diversified, with JAXA investing across all applications. In 2024, the highest spending areas were in Technology at ¥306 billion (\$2.3 billion) (+431%) due to the adoption of the Space Strategy Fund.

Other top applications included Earth Observation (¥73 billion / \$554 million) with the launch of ALOS-4 and the development of new projects such as AMSR3, followed by Launch activities (¥46 billion /\$352 million) and Navigation (¥34 billion /\$260 million). The Meteorology budget has also encountered a surge (¥24 billion /\$185 million) due to new investment in the Himawari program.

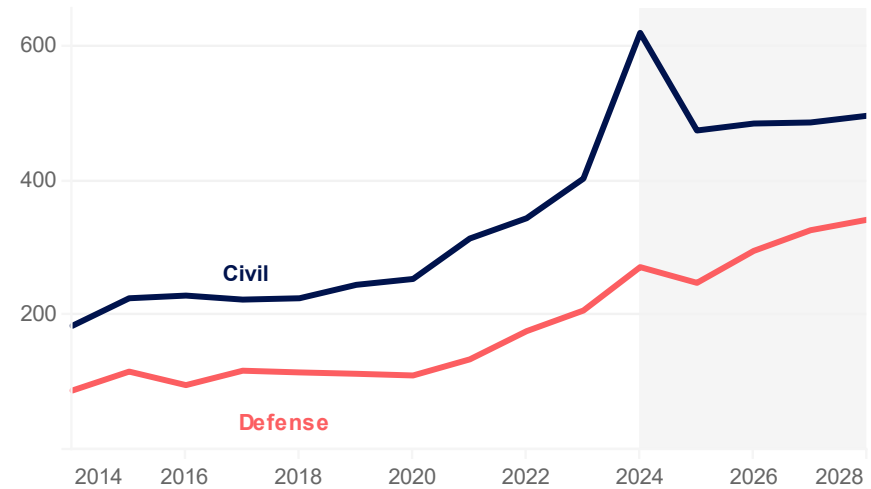
Surge in defense and security budget

Following the revision of the three main defense and security documents defining the national security and program, the government aims to invest ¥43 trillion over 5 years, targeting military spending at 2% of GDP by 2027, with a landmark budget of ¥1.5 trillion (~\$10 billion) allocated for space defense across 5 years. Japan's space defense spending totaled ¥272 billion (\$2.1 billion) in 2024.

Half of this budget was dedicated to Earth Observation (EO), including the IGS program, the acquisition of commercial EO data, and the exploration of satellite constellations for missile defense. Furthermore, approximately ¥29 billion (\$217 million) was spent in 2024 on defense telecommunications programs, specifically for the development of X-band communication satellites. An additional 12% of the budget was invested in space security, with a focus on Space Situational Awareness (SSA) to enhance the country's Space Domain Awareness capabilities.

Japan government space expenditures

In JPY billions



Source: National budget, Novaspace estimates

GOVERNMENT SPACE



Government Space Programs



Major Program Tracker



Prospects for Space Exploration



Space Situational Awareness

Available upon request
China Space Ecosystem

Contact us for
more information

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Satellite Connectivity & Video Market



Military Satellite Communications



FSS Capacity Pricing Trends



Prospects for Maritime Satellite Communications



FSS Operators: Benchmarks & Performance Review



Prospects for Direct to Handheld & IoT Markets



Prospects for In-Flight Entertainment & Connectivity

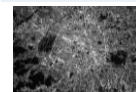


Universal Broadband Access

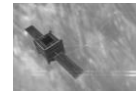
SPACE INDUSTRY



Satellites to be Built & Launched



Space Market Monitoring



Prospects for the Small Satellite Market



Ground Segment Market Prospects



The Space Economy Report



Financing & Transactions Database

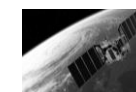


SpaceX Business Outlook

EARTH OBSERVATION



Earth Observation Data & Services Market



Earth Observation Satellite Systems

Flagship report

Connecting Industry Leaders Worldwide



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The unrivalled event for the French & European space sectors

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- 35+ countries



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- 70% of C-level in attendance



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