内閣府
Cabinet Office, Government of Japan

New Basic Plan on Space Policy

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Office of National Space Policy, Cabinet Office, Japan

Transformation of Japan's Space Policy

● Strategic Headquarters for Space Policy (September 12, 2014)

- ◆ Recent changes of the security environment surrounding Japan.
- ◆ Growing importance of outer space in our national security.
- ◆ Needs of recovery and strengthening of the space industrial base.

Prime Minister Abe provided direction to formulate the New "Basic Plan for Space Policy"

● Strategic Headquarters for Space Policy (January 9, 2015)

The New "Basic Plan for Space Policy" was determined.

- ➢ Reflect the new national security policy shown in the National Security Strategy (NSS) (December 17, 2014).
- ➢ Establish long-term and concrete public investment plan for next 10 years foreseeing coming 20 years.

Structure of New Basic Plan on Space Policy

1　Environmental Awareness surrounding space policy

2　Goals of Japan’s space policy

3　Basic stance for fostering space policy

4　Concrete approach
（1）　policy framework for realization of goals
（2）　concrete initiatives

1 Environmental Awareness surrounding space policy

① Change in balance of power on space policy

－Transformation from the US-Soviet bipolar structure to multi-polarized structure

－Greater number of countries involved in space activities, and a corresponding growth in commercial space market.

② Growing importance of outer space for national security policy

－ Necessity to utilize space for the security area proactively based on the National Security Strategy

－Advent of a new era for Japan-US space cooperation

③ Growing risks against stable use of outer space

－ increased number of space debris and growing threats of ASAT attacks

－ necessity to cope with such risks sustainably and ensure stable use of outer space

④ Growing importance of the role of outer space to solve global challenges

－ Global challenges such as energy, environment, food and natural disasters have come to the forefront and posing severe threats to the international community

－Necessity to contribute to solve global challenges using space systems

⑤ Space industrial basis is at stake

－Industrial basis is essential for conducting space activities autonomously

－Lack of foreseeability of investments led to continuous business withdrawals and stagnated new entries into space industry

⑥ Lack of organic cycles among science & technology, national security and industrial vitalization

－Insufficient efforts of R&D in use of space for security purpose and of making the most of outcomes of R&D in civil space areas for industrial vitalization.

2 Goals of Japan's space policy

I Ensuring space security

① Ensuring stable use of outer space
② Strengthening security capabilities utilizing space
③ Strengthening Japan-US alliance through space cooperation

II Promoting use of space in civil area

① Utilization of space for tackling with global challenges and realization of safe and affluent society (national resilience)
② Creation of new Industries related to space (utilization of geospatial information)

III Maintaining and strengthening industrial and Science & Tech basis

① Maintaining and strengthening space industrial basis
② Maintaining and strengthening science and technology basis which contributes to realizing outcomes

3 Basic stance for fostering space policy

Giving consideration to shifts in policy environment, the GOJ proceeds space policies based on three guidelines below, **putting more emphasis on "ensuring space security"** among three-space policy goals.

I Prioritize realization of outcomes from use of space (exit strategy)

- Substantiate and clarify needs for space use for purposes such as security and industrial promotion.
- Sufficiently considering the contribution of space system to the needs specified.

II Prioritize realization of policy outcomes that match with budget allocations

- Set clear goals for outcomes for next ten years for each policy
- Fully enforcing the prior consideration and post implementation assessment. Pursuing maximal policy effects through cycles of demonstration, assessment and improvement.

III Rather than fixing rigid targets for each individual initiative, ensure targets are meaningful and in accordance with shifts in the environment

- Adjust policy targets flexibly in response to changes in the environment and results of examinations of progress status, and introduce new policy measures accordingly.
- Basic Plan on Space Policy consists of 2 parts ("**Main Text**" & "**Implementation Schedule**"), with the Schedule revised every year by the Strategic Headquarter for Space Policy.

4 Concrete approach（1） policy framework for realization of goals

I Ensuring space security

- Quasi-Zenith Satellite System (QZSS)
- Space Situational Awareness (SSA)
- X-band Satellite-Based Communication Network
- Information Gathering Satellite (IGS)
- Responsive Small Satellites
- Advanced optical & radar satellites

etc.

II Promoting use of space in civil area

- Geostationary meteorological satellites HIMAWARI
- GOSAT, environmental observation satellites
- QZSS, IGS
- Advanced optical & radar satellites
- Automation, unmanned and labor saving operations through GNSS and geospatial information
- Creation of new industries using satellite remote sensing data as big data

etc.

III Maintaining and strengthening industrial and Science & Technology basis

- **New-type core rocket and Epsilon rocket**
- **Engineering Test Satellite**
- **The GOJ steadily takes steps according to the schedule**
- Foster public-private efforts to achieve the cumulative market size of **5 trillion yen during 2015-2024 FY**.
- **Build organic cycles among science & technology, security and industrial promotion** through R&D activities by JAXA, public and private institutions based on utilization needs on outer space.

4　Concrete approach（2）　concrete initiatives

Satellite Positioning

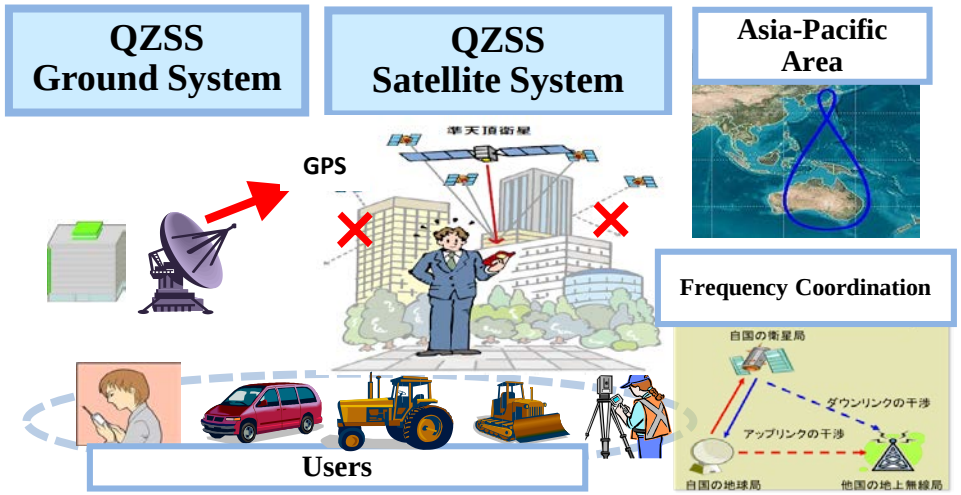
●Establish 7-satellite constellation of QZSS（Quasi-Zenith Satellite System）

- Begin deliberations on a successor to MICHIBIKI（the first QZSS）in FY2015.
- Begin project of additional 3 satellites around FY2017.
- Start operation of 7-satellite constellation around FY2023.
- Consideration will be given to reinforcement of coordination with the U.S. GPS.

（Organization in charge : CAO）

●Promote the utilization of QZSS, provide support for construction of electronic control point networks in Japan and other countries, primarily in the Asia-Pacific region.

（Organization in charge : CAO, MLIT, etc.）



MICHIBIKI（the first QZSS）

Electronic Control Point

Satellite Remote Sensing（1/3）

●Information Gathering Satellites（IGS）

- Consideration will be given to the reflection of user needs, the examination of operation outcomes, the state of information sharing, and the state of measures to ensure the resiliency of IGS.
- Begin development of a data-relay communication satellite in FY2015.
- Reinforce IGS framework on an ongoing basis, including increases in the number of satellites.

（Organization in charge : CAS）

●Responsive Small Satellites

- Begin research studies on the operational needs and concepts of Responsive Small Satellites in FY2015.
- Consideration will be given to the possibility of cooperation between Responsive Small Satellites and IGS.

（Organization in charge : CAS,CAO,MEXT, MOD, etc.）

Image of Responsive Small Satellites Operation

Satellite Remote Sensing（2/3）

●Advanced Optical Satellites

- Begin project around FY2015.
- Start operation around FY2019.

●Advanced Optical Satellites（successor model）

- Begin project around FY2022.
- Start operation around FY2026.

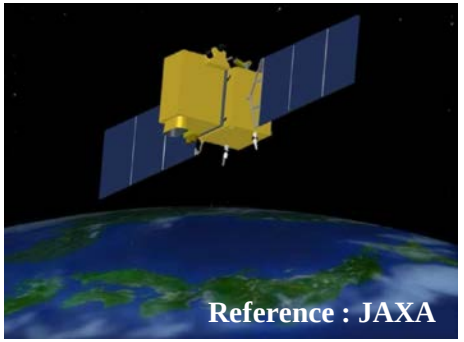


Image of Advanced Optical Satellites

- Resolution : 0.8 – 1.0 m
- Observation width : 50 – 70 km

●Advanced Radar Satellites

- Begin project around FY2016.
- Start operation around FY2020.

●Advanced Radar Satellites（successor model）

- Begin project around FY2023.
- Start operation around FY2027.

（Organization in charge : MEXT）

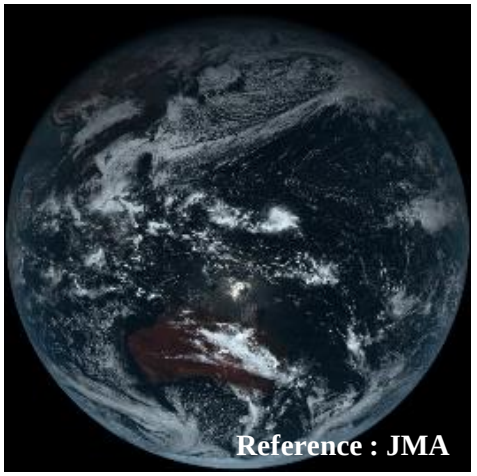
ALOS-2

- Resolution : 1 × 3 m
- Launch : May 24th, 2014

Satellite Remote Sensing（3/3）

●Geostationary Meteorological Satellites

- HIMAWARI 8 : Start operation 2015's summer
- HIMAWARI 9 : Start operation around 2022
- HIMAWARI（successor model）
  : Begin project around FY2023
  : Start operation around FY2029
  （Organization in charge : MLIT）



First Image of HIMAWARI 8

●Greenhouse Gases Observing Satellites（GOSAT）

- GOSAT 2 : Launch it around FY2017
- GOSAT 3
  : Begin project around FY2017
  : Aim to launch in FY2022
  （Organization in charge : MEXT, MOE）

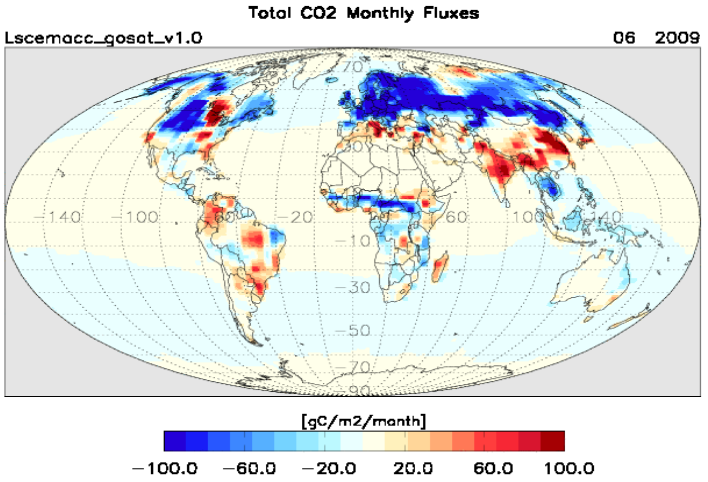


Image of CO2 monthly fluxes provided by GOSAT

Satellite Telecommunications and Broadcasting

●Next Engineering Test Satellites

・Aim to launch it around FY2021
（Organization in charge : MIC, MEXT, METI）

Engineering Test Satellite - VIII

●Data-relay communication satellite

・Begin project in FY2015
・Launch it around FY2019
（Organization in charge : MIC, MEXT）

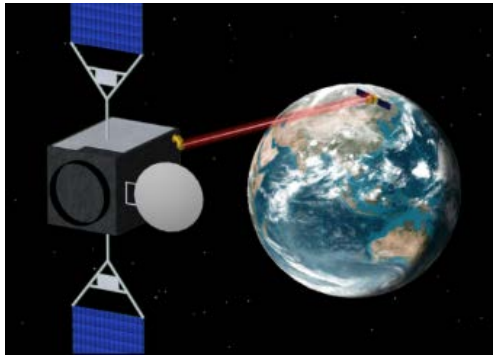


Image of Data-relay Communication Satellite

●X-Band Satellite-Based Defense Communication Network

・Begin project for the 3rd satellite around FY2015
（Organization in charge : MOD）

Image of X-Band Communication Satellite

Space Transportation Systems

●New-type core rocket

・Aim to launch 1st rocket in FY2020

（Organization in charge : MEXT）

H-IIA

H-IIB

●Epsilon rocket

・Complete improvements to launch capabilities and expansion of satellite envelope area by around the end of FY2015.

・Begin survey for next steps in FY2015.

（Organization in charge : CAS, MEXT, MOD, etc.）

Epsilon

●Launch sites and facilities

・Begin deliberations on Launch sites and facilities from the view point of resiliency in FY2015.

（Organization in charge : CAS, CAO, MEXT, MOD, etc.）

Space Situational Awareness

●By around the early 2020s, we will construct SSA-related facilities and an operational framework required for space situational awareness.

●We will advance discussions on reinforcement of partnerships between Japanese related governmental institutions and USSTRATCOM etc..

（Organization in charge : CAO, MOFA, MEXT, MOD, etc.）

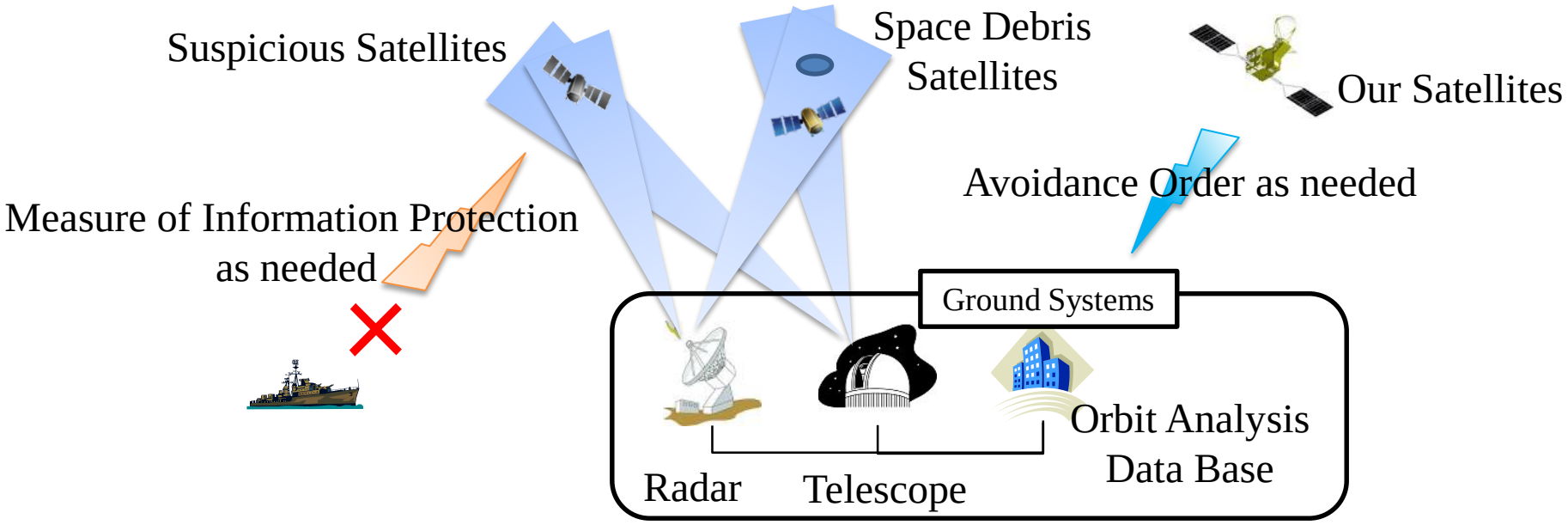


Image of SSA systems

MDA, Early warning, Resiliency

●Maritime Domain Awareness（MDA）

・Consideration will be given to the utilization of space technology for MDA through the experimental use of Japan's satellites, and from the view points of combinations with aviation, shipping and terrestrial infrastructure etc., the partnership with U.S., and so on, which will be summarized around the end of FY2016.

（Organization in charge : CAS, CAO, MOFA, MLIT, MOD, etc.）

●Early warning functions, etc.

・Consideration will be given to the utilization of early warning functions, etc. including its necessity, from the view points of the possibilities of alternatives, the technological feasibility, and cost-effectiveness.

（Organization in charge : CAS, CAO, MOD）

●Improving the resiliency of space systems

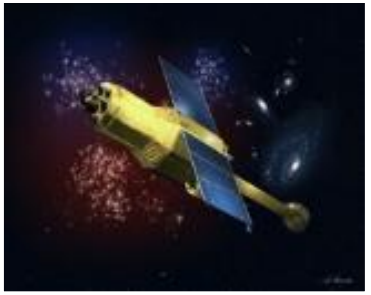
・Consideration will be given to the way to improve the resiliency of space systems, which will be summarized by the end of FY2015, and will be took necessary measures.

（Organization in charge : CAS, CAO, MOD, etc.）

Space Science and Exploration, Manned Space Missions

●Space Science and Exploration

・Launch 3 mid- & 5 small-sized space crafts in next 10 years in line with roadmap on space science and exploration.
（Organization in charge : MEXT）



X-ray Astronomical Satellite
（ASTRO-H）

Geo-Space Exploration Satellite
（ERG）

●International Space Station（ISS）

・Until 2020, cope with 2 HTVs and highly promising technology for future.
・As for the extension to 2024, consider cost-effectiveness etc. comprehensively, taking trends in other countries into account sufficiently.
（Organization in charge : MEXT）

Astronaut
Mr. Kimiya YUI
Expected to stay on ISS from May, 2015.

Strengthening of Industrial / Science and Technology Infrastructure

●Comprehensive initiatives aimed at encouraging new entrants to the field and expanding space utilization

・Law on space activities and law on satellite remote sensing
→ aim to propose the bills to the Diet in early 2016

（Organization in charge : CAO, MEXT, METI, etc.）

●Consolidation of Environment for steady supplies of essential parts and components for space systems

・Formulate a strategy on parts & components by around the end of FY2015, and reflect it to relevant plans

（Organization in charge : CAO, MEXT, METI, MOD, etc.）

●Initiatives aimed at expanding future space utilization

・Implementation of leading social demonstrations on cutting-edge space utilization taking the occasion of the 2020 Tokyo Olympics and Paralympics.

（Organization in charge : CAO, METI, etc.）

・Demonstration experiments of LNG propulsion system, research and development of reusable space transportation system, space-based solar power system, etc.

（Organization in charge : MEXT）

Strengthening of systems and frameworks for space development and utilization

●Comprehensive enhancement of policy implementation frameworks

・In order to utilize space for national security, we will continue to reinforce partnership between MOD and JAXA.

（Organization in charge : MEXT, MOD）

●Strengthening of survey, analysis and strategy formulation functions

（Organization in charge : CAO, MOFA, MEXT, etc.）

●Enhancement of domestic human resources and promotion of public understanding

（Organization in charge : MEXT, METI）

●Establishment of legal institutions

・Law on space activities and law on satellite remote sensing（again）

→ aim to propose the bills to the Diet in early 2016

（Organization in charge : CAO, MOFA, MEXT, METI）

Advancement of space diplomacy and reinforcement of overseas development strategies related to the space field

●Realization and strengthening of rule of law in outer space

- Work toward the establishment of international rules, in particular by promoting the formulation of the International Code of Conduct for Outer Space Activities.
- Proactively participate in and contribute to discussions in international conferences such as the United Nations COPUOU（Committee on the Peaceful Uses of Outer Space）

（Organization in charge : CAO, MOFA, MEXT, etc.）

●Strengthening international cooperation

- U.S., Europe, Australia, ASEAN, etc.

（Organization in charge :
CAS, CAO, MIC, MOFA, MEXT, MAFF, METI, MLIT, MOE, MOD, etc.）

APRSAF-21, Tokyo, Dec. 2014

●Establish “ Taskforce on Space-system overseas development “（provisional name）

- Establish a framework for joint public-private efforts to expand presence in international commercial space market.

（Organization in charge :
CAS, CAO, MIC, MOFA, MEXT, MAFF, METI, MLIT, MOE, MOD, etc.）

Future plan on implementation of Space Policy

- Prime Minister Abe evaluates the New Basic Plan on Space Policy as “ A historic turning point on Japan’s Space Policy. ”.

- To implement the space policy written in the New Basic Plan on Space Policy steadily, the “Implementation Schedule” is revised once a year, by the Strategic Headquarter for Space Policy.

- Through this cycle, and with the whole of government approach, each projects will be concretized.