

JAPANESE SPACE POLICY -WHERE IS SHE GOING?

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Abstract

Passing 25 years from 1970 when the first satellite was launched into the orbit, Japan developed and successfully launched H-II from Tanegashima Space Center in 1994. During those period, Japanese space policy has experienced a big shake from independent development to technology import from US, and back again to independent development. In general, the H-II rocket which was manufactured by 100 % domestic technology, brings Japan from the old era (experimental stage) to the new era (practical use stage).

Fundamental Policy of Japan's Space Activities, which decides such policy as mentioned, was revised in January, 1996 this year after an interval of 7 years. This revised outline confirms the result of Japanese space technology until present and identifies the future direction and framework of her space activities for a period of coming ten years on the basis of a long-term perspective towards the 21st century. However, when comparing with the last Fundamental Policy in 1989, there seems no big change in it, and a long-term perspective is also not seen there.

The description varies on some important points in international space law, like international cooperation, protection of environment, commercial use, etc. In addition, the immaturity as well as the necessity of broader discussion are felt because, for example, neither this Fundamental Policy nor The National Defense Program Outline treated any national and international security matters concerning outer space.

Considering the present time when Japan enters into the practical use of outer space, such as application, commercial use and launching service, it is doubtful whether new Fundamental Policy was properly planned or not. It seems necessary to use several measures by which the public opinion, opinions from industry field and deeper debate on the security are reflected in the law and policy making.

New Fundamental Policy of Japan's Space Activities

The policy concerning the Japanese space development is decided by Fundamental Policy of Japan's Space Activities. This outline is written by Space Activities Commission¹.

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It is 1978 that Fundamental Policy of Japan's Space Activities was planned for the first time. Afterwards, the Commission revised this Fundamental Policy twice on 1984 and 1989. Those revisions were to respond to the changes in the space development and use in Japan and the world. Upon the same reasons, new Fundamental Policy in January this year² was drafted and approved in order to identify the future direction and framework of Japan's space activities for a period of coming ten years on the basis of a long-term perspective towards the 21st century³.

Setting-up Chapters -The Structure

New Fundamental Policy consists of 6 chapters in it. They are,

Preface

- 1 Basic Policy and Implementation of Space Development
- 2 Development of Space Development Activities
- 3 Institutional Structure of Space Development
- 4 Promotion of International Cooperation
- 5 Encouragement of Space Activities in Private Sector, and
- 6 Preparation for Promotion of Space Activities.

When comparing title of each chapter with previous one, there is not a big difference. The almost same name is applied since Chapter 2. The setting up of previous Policy was

- 2 Space Development Activities
- 3 Organizational Framework
- 4 International Cooperation
- 5 Private Sector, and
- 6 Social Environment.

Especially, those changes are smaller in Japanese compared with English.

Moreover, the Chapter 1. does not have a big change either (in previous Policy: that was Fundamental Principles). It is thought that the present Policy succeeded to overall in structure.

New Direction of Fundamental Policy

Though there is not so big change in its structure, some policy changes are seen in the present Policy.

The first to be enumerated is recognition of the change in international environment. New fundamental Policy thinks that The US and Russia are now turning their emphasis in space development from military projects and matters of national prestige to cost/benefit context and high technology development by converting space technology from military use to commercial application. Those two countries as well as Europe and China are thought to put their resources to civilian use in future space activities.

Further, considering the international projects like the space station, international cooperation is respected in it. Upon the above mentioned recognition, the Policy says that Japan has to play an active role in international space endeavours from a global standpoint⁴.

Policy Change in Each Field

High priority areas are listed up in Section 1 of Chapter 2, and afterwards concrete contents of the activities are described in Section 2. Following are the main points in each field.

First of all, Subsection 1. Earth Observation and Earth Science, while developing a series of satellites, insists on establishing an information network for data use. This is a point that was not referred in the previous Policy which devoted attention only to satellite technology. In addition, the Policy offers a global earth observation system in harmony with other countries, which is one area of international cooperation. Regarding the reason why the description of meteorological satellites decrease, this technology reaches completely the practical use level.

Subsection 3 is devoted to the Moon Exploration. In this part, unmanned exploration and an international lunar observatory are planned.

About Communication, Broadcasting and Navigation (Subsection 4), much attention has been paid to the active development and use of personal satellite-based mobile communication, GPS, etc.

Subsection 6. Manned Space Activities newly enumerates acquiring experience and know-how through JEM (Japanese module of the space station) and the US space shuttle, and describes space medical science.

Subsection 7. Basic Technology for Satellite and Subsection 8. Space Infrastructure are planning development of satellites, transportation systems in the future. The new tendency in both subsections is a declaration of cost reduction. When a new satellite is built, cost reduction is essential, and cost cutting is also indicated in the transportation system. It is new that Subsection 8 describes H-IIA launch vehicle⁵, J-1 launch vehicle, HOPE-X⁶ (an experimental part of the reusable type transportation system), HTV⁷ for supplying logistics to the space station and a space plane. In addition, new landing field for HOPE-X and a monitoring system of space debris are listed up as new items.

In Chapter 3. Institutional Structure of Space Development and Chapter 4. Promotion of International Cooperation, the enhancement of national and international cooperation is requested. Especially, the reinforcement of cooperation with Asia-Pacific regions in some fields is pointed out in Chapter 4⁸.

Chapter 5. (Encouragement of Space Activities in Private Sector) newly refers providing the private sector the opportunities for verification and experiments, actively personnel exchange

between NASDA and the private sector and commercial launch service.

For the Preparation for Promotion of Space Activities (Chapter 6), it enumerates, as promotion measures, Internet, science museums, aero-space related centers, use of "Space Day"⁹, etc. In the field of manpower training, additional effort to foster personnel of humanities and social science such as space law and space psychology. Additionally, it is the first time that the space insurance is expressed in the Policy. This might be a result of recognition of entering the practical use stage.

Evaluation of New Fundamental Policy

As mentioned above, while keeping the same structure as a previous one, New Fundamental Policy has some changes and additions in part. Those changes and additions are made basing upon the history of space development inside Japan and related international environment for recent 7 years.

Whether Fundamental Policy is an appropriate compass for Japanese space policy should be carefully examined. Only this Policy can clarify the Japanese attitude responding the obligation of international space law, because there has been no fundamental law concerning the space development in Japan¹⁰.

Commercialization

Though the revised outline recognizes that the US and Russia are converting space technology from military use to commercial application. And further, there is growing emphasis among major space powers (US, Russia, Europe and China) on civilian use in future space activities, the direction of Japanese effort for commercialization remains ambiguous. The Policy declares that in its Preface "We should renew the significance of space development and recognize a world wide trend to

emphasize both civilian use and international cooperation in space activities. We have to play an active role in international space endeavours by enhancing the current level of our space technology and know-how, and by pursuing real utilization of space from a global standpoint."¹¹ However, the actual content of commercialization is not described. The definition of civilian use and commercial application is assumed to be vagueness. It only points out the necessity of cost reduction, active participation of private sector and introduction of space insurance. The border line between two categories, one is left for the national responsibility and the other is commercialized for private sector, is not drawn though Chapter 5 which newly introduced commercial launch service. Under such situation, the enterprise which positively executes the space activity is not to appear easily while some are included in national space projects as contractors or subcontractors.

Protection of Environment

Recently, the environmental issue has been important as a problem of pollution prevention of outer space itself by debris as well as a problem of the environmental protection of the earth by using remote sensing data from outer space.

New Fundamental Policy spares one paragraph for conducting research on space debris monitoring systems¹². Moreover, the environment problem is referred in each part and it offers the global observation system with other nations. Those are descriptions to consider the international contribution in this field.

International Cooperation

Regarding cooperation, Chapter 4 as a whole provides its promotion. To compare with the previous Policy, joint

establishment of observation system is newly proposed in this field. And the new Policy intends to expand cooperation especially with Asia-Pacific Regions¹³

Peaceful Character

International space law has made an effort to prevent outer space from the military expansion. That spirit appears to the Preface and Article 4 of Outer Space Treaty in 1967. Fundamental Policy, in only one sentence, says that Japan promotes its space development within a scope of peaceful purposes¹⁴. The description concerning peace and security is not seen in other parts at all. Japan interpreted 'peaceful' in outer space treaty as 'non-military' and does not change that interpretation at present. After the private sector came to use some space technologies generally, such space use is allowed to the military sector for the first time¹⁵. However, it should be discussed whether we continue this interpretation or not, even after Japan herself develops enough technology for launching satellites by which security data can be acquired from outer space. If 'peaceful' is interpreted as 'non-aggressive', information gathering from outer space can be done by Japanese military sector. New Fundamental Policy in 1996 does not refer at all on this issue, at the time when it is understood that the regional stability and security are kept with satellite data and analyzed information from that data. The National Defense Program Outline¹⁶, which decides the Japanese defense policy, also does not describe the space utilization yet, though that use is insisted on in the advisory report "The Modality of the Security and Defense Capability of Japan" submitted to the Prime Minister by his Advisory Group of Defense Issues¹⁷. The appropriate policy on this matter should be discussed inside and outside the Diet sufficiently and should be

reflected not only in the Fundamental Policy but also in the National Defense Program Outline in the near future.

This policy regarding the security use of outer space by Japanese military sector has related to the wide spread concern about the Self Defense Forces themselves. While the Advisory Group of Defense Issues submitted its report to the Prime Minister for considering the outer space utilization for national security¹⁸, there remains a strong concern for the military activities among the public opinion in Japan.

The good example was the failure in search and picking up the HYFLEX this year. On 12 February, 1996, the experimental equipment called HYFLEX (HYpersonic FLight EXperiment) was launched by J-1 rocket successfully. This launch was an experiment for acquiring the necessary data for future development of HOPE (H-II Orbiting Plane). After this HYFLEX was landed on the Pacific Ocean safely, NASDA lost it because it sunk into the deep sea. Though NASDA announced that they could get most of the data transmitted by electric wave, there was still unrecoverable damage for this failure. During this mission, Self Defense Force was never requested for support. It is natural that they might find and pick up the HYFLEX if they were asked cooperation in advance. Seeing the same case in US where Navy cooperates the national space activities positively, this example shows the Japanese unique attitude against the Forces.

As well known, it is needless to say that the national space activities which accompany the high risk need all related resources even in the country. However, in Japan, the appropriate situation where the Defense Forces support space activities and the public accepts the security use of outer space, seems far from the present.

Conclusion

The fundamental Policy of Japan's Space Activities in 1996 is thought to be the first Policy decided after Japan started practical use of outer space. This Policy successfully outlined continuous, mid-term targets for a period of coming 10 years, of which the term is intended by the planner, Space Activities Commission, from the beginning. On the other hand, Japan's long-term vision and philosophy in her space activities are not clear though this Policy is a steady forecast based upon the present technical achievements. It is rather difficult to see the policy and guidelines for the future legal structure which can appeal to the public domestically and internationally.

In order to solve the problem, the system by which the public opinion is considered and entered into the Policy is needed. In this case, the Diet where the public opinion as well as the opinion from the industries are reflected should be involved more in the policy and law making process.

Note

1. The Space Activities Commission (SAC) was founded in 1968 under the Law for the Establishment of SAC. This commission is composed of five members including a chairperson. The chairperson is the Director General of Science and Technology Agency.
2. The present Policy was revised on January 24, 1996.
3. Paragraph 15 of Preface.
4. *ibid.*
5. H-IIA is an advanced H-II launch vehicle to launch a 20 ton payload into low Earth orbit or a 4 ton payload into geostationary orbit with a drastic cost reduction.
6. HOPE is a H-II Orbiting Plane to develop the unmanned reusable winged space plane.

7. HTV is a H-II Transfer Vehicle with rendezvous and docking functions.
8. (5) of Chapter 4.
9. 12 September.
10. Though the Diet resolution recommended to make the Fundamental Law for Outer Space Exploration, there still is no such law in Japan.
11. Paragraph 12 of Preface.
12. Chapter 2, Section 8 Space Infrastructure, (3) Support System, (iii) Monitoring Space Debris.
13. note 8, *supra*.
14. Chapter 1, 1-1. Basic Policy
15. In 1985, Japanese government announced in the Diet that interpretation.
16. This Outline was approved by the Cabinet on 28 November, 1995.
17. The Modality of the Security and Defense Capability of Japan -The Outlook for the 21st Century (August 12, 1994)-
18. Chapter 3 The Modality of Defense Capability in the New Age, Section 3 Maintenance and Qualitative Improvement of Self-Defense Capability, (4) Specific Measures of Reform.