

CURRENT STATUS AND RECENT DEVELOPMENTS IN JAPAN'S NATIONAL SPACE LAW AND ITS RELEVANCE TO PACIFIC RIM SPACE LAW AND ACTIVITIES

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I. JAPAN'S SPACE DEVELOPMENT AND ITS CHARACTERISTICS

A. Japan as a Spacefaring Nation

Japan is a latecomer in the field of national space legislation. It is the fourth nation to have joined an exclusive space club, when, in February 1970, it launched a domestic communication satellite with its own solid propellant rocket from a launching site in its own territory.¹ Since then, Japan has extensively conducted exploration and use of outer space through its own program and through international cooperation. With respect to its national program, Japan has launched various kinds of space science and application satellites. Approximately 120 satellites have been placed into orbit to date. As for launch vehicles, after the N-1 (1975-1982), N-II (1981-1987), and H-I (1986-1992) rockets that were manufactured with the help of United States technology, the purely Japanese domestic H-II rocket was successfully launched in 1994. A current domestic mainstay rocket, H-IIA, conducted fourteen successful launches out of 15, and has proved to be a matured launch vehicle.

Japan is an active player in various universal cooperation programs such as the action plans of UNISPACE III under the auspices of the U.N.; the Group on Earth Observation (GEO); Committee on Earth Observation Satellites (CEOS); IGOS-P;

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¹ Even today, only eight countries have shown such an independent national space capability: the former U.S.S.R. (now Russian Federation), the U.S., France, Japan, China, India, Israel, and Iran.

and, the International Charter "Space and Major Disasters." It has also been participating in major space projects among spacefaring nations such as the *International Space Station (ISS)* project since its inception.

Cooperation between Europe and Japan started in 1972 mostly on scientific programs.² One of the recent cooperative projects with the European Space Agency (ESA) includes the *BepiColombo* Mercury mission to conduct comprehensive observation of Mercury's magnetic field and magnetosphere.³ Within Asia-Pacific countries, for Japan, the most important platform for cooperation is the Asia-Pacific Regional Space Agency Forum (APRSAF) established in 1993. The 2005 annual APRSAF meeting set up a Disaster Management Support System (DMSS) in the Asia-Pacific Region. It is a best-efforts, voluntary initiative by the participating organizations. The first step for DMSS is a pilot project, *Sentinel Asia*. It will be followed by the establishment of an Earth observation and satellite communications system (2008-2009); and, then finally, a comprehensive DMSS (2010), using regional satellites including Japan's remote sensing satellite *ALOS-1 (Daichi)* and the *Wideband InterNetworking engineering test and Demonstration Satellite (WINDS) (Kizuna)*.⁴

As the U.S. being the only ally for Japan, Japan-U.S. bilateral space cooperation is the most important as far as Japan is concerned. The Japan-U.S. Exchange of Notes Constituting an Agreement Concerning Co-Operation in Space Activities for

² Examples are observation of aurora and thermal energy balance of ionosphere by sounding rockets from, e.g., Norway or Greenland, Denmark as well as observation of planets, comets, and solar activity by space probes. See Japan Aerospace Exploration Agency (JAXA), *International Cooperation*, http://www.jaxa.jp/about/int/index_e.html (last visited Nov. 7, 2009).

³ JAXA is responsible for the manufacturing of the *Mercury Magnetospheric Orbiter (MMC)* and ESA takes charge for the development of *Mercury Planetary Orbiter (MPO)* and the launcher that will place *BepiColombo* into Mercury's orbit. MMC and MPO will be launched by the *Soyuz-Fregat 2 B* rocket in 2013 and will observe Mercury for about one year. JAXA, *Mercury Exploration Mission "BepiColombo"*, http://www.jaxa.jp/projects/sat/bepi/index_e.html (last visited Nov. 7, 2009).

⁴ See, e.g., *Sentinel Asia, Disaster Management Support System in the Asia-Pacific Region, Welcome to the Sentinel Asia Website*, <http://dmss.tksc.jaxa.jp/sentinel/> (last visited Nov. 7, 2009).

Peaceful Purposes in 1969⁵ and two successive Exchange of Notes in 1975⁶ and 1980⁷ permitted U.S. industry to contract with the Japanese government or industry to provide unclassified technology, which accelerated Japan's ability to develop liquid propellant engines that enabled Japan to place a heavier satellite in a higher orbit.

As described above, Japan is undoubtedly one of the space-faring nations. However, it was not until June 20, 2007 when the Basic Space Bill, the first administrative bill on space activities, was submitted to the Diet⁸ by the ruling coalition of the Liberal Democratic Party (LDP) and New Komeito. Almost a year later, May 21, 2008, the Basic Space Law was voted into a full-fledged law and made effective on August 27, 2008.⁹ Until that time, approximately 15 nations had already legislated national space laws.¹⁰

⁵ Exchange of Notes Constituting an Agreement Concerning Co-Operation in Space Activities for Peaceful Purposes (with attachment) (Proclaimed July 31, 1969), registered by the USA Mar.4, 1970, No.10342, available at http://untreaty.un.org/unts/1_60000/21/5/00040220.pdf.

⁶ Exchange of Notes Constituting an Agreement Relating to the Furnishing of Satellite Launching and Associated Services, May 23, 1975, registered by the USA Mar. 11, 1976, No.14641, available at http://untreaty.un.org/unts/1_60000/28/11/00054507.pdf.

⁷ Exchange of Notes Constituting an Agreement Relating to Space Launch Assistance, Dec. 3, 1980, registered by the USA Mar. 1, 1982, No.20830, available at http://untreaty.un.org/unts/60001_120000/9/8/00016378.pdf.

⁸ Uchū kihonhōan [Basic Space Bill] Bill No.50 of 2007, available at http://www.shugiin.go.jp/index.nsf/html/index_gian.htm (last visited Nov. 7, 2009). The Diet is Japan's bicameral legislature, consisting of the House of Representative (the Lower House) and the House of Councillors (the Upper House).

⁹ Uchū kihonhō [Basic Space Law] Law No.43 of May 28, 2008, available at <http://law.e-gov.go.jp/announce/H20HO043.html> (see unofficial English translation of the Basic Space Law, *Fundamental Act of Outer Space*, (Law No.43, 2008), 34 J. SPACE L. 471 (2008).

¹⁰ Such nations include Norway (1969), Sweden (1982), U.S. (1984), UK (1986), South Africa (1993), Russia (1993), Ukraine (1996), Australia (1998), Brazil (2001), China (2001), Korea (2005), Belgium (2005), Canada (2005), Netherlands (2006) and Germany (2006). In the case of Brazil and China, although their regulations are not formal laws but merely administrative regulations or decrees, they are included in this list because such regulations contain provisions to license private entities for participating in space utilization including commercial launching. About two weeks after Japan's first national space law was voted into law, on June 3, 2008, the French Law Relating to Space Operations was made into law. See Lucian Rapp, *When France Puts Its Own Stamp on the Space Law*, 35 J. SPACE L. 313-336 (2009).

*B. The Reasons Japan Was so Late in Enacting
National Space Legislation*

Why has Japan not had any space legislation until May of 2008 if it is a spacefaring nation? The simple answer is that it was not specifically needed due to insufficient activities by non-governmental entities. Under normal circumstances, there are three reasons that seem to require national space legislation. The first is to implement international treaties. The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty)¹¹ obligates States-Parties, now numbered at 100, to make sure that space activities by their respective non-governmental entities abide by international rules, including the Art. VI obligation of “authorization and continuing supervision.”¹² Accordingly, the more privatized that space activities become, the more State regulations are required. The second reason is to promote and assist the space industry as a national project. History shows that large national space industry develops only when substantial governmental assistance was conferred. Thus, the government nurtures the space industry in a variety of ways: transfer of technology with preferable conditions; a longtime commitment to purchase private space services (anchor tenancy); partial acceptance by the government of third-party liability caused by private space activities; and refraining from conducting space activities that preclude or compete with those of non-governmental entities. National laws address arrangements for the development of space industry. The third reason is to fill in the gaps of the current international space law regime. It does not properly address recent issues such as a joint launching of multinational enterprises; sub-orbital space tourism; and on-orbit transfer of ownership of satellites. Such necessity stems from the fact that the last of the UN space treaties, the Agreement Governing the

¹¹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

¹² *Id.* at art. VI.

Activities of States on the Moon and Other Celestial Bodies (Moon Agreement)¹³ was adopted in 1979. This third reason is also strongly connected with the growing commercialization of space activities. In short, the growth of private activities in the development and use of space necessitates national space laws.

In Japan's case, almost no private entities were engaged in space activities until recently. Until August 2008, Japan never conducted a commercial space launch, nor did Japan have a private remote sensing satellite in operation until today. Two reasons seem to explain the situation. The first is Japan's interpretation of "peaceful uses of outer space" as being "non-military" which prohibits space agencies from participating in any defense-related, "non-aggressive" use of outer space. This interpretation was officially adopted in 1969 in the form of a Diet Resolution.¹⁴ It is often pointed out that without a continuous governmental military program, it is difficult to establish a robust space industry under which the private business sector can flourish. Yet, given such circumstances, the commercialization of satellite manufacturing almost started through a series of governmental contracts relating to communications, broadcasting, and meteorological satellites by the end of the 1980s.¹⁵

¹³ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *opened for signature* Dec. 18, 1979, 1363 U.N.T.S. 3 [hereinafter Moon Agreement].

¹⁴ House of Representatives, 35 *Shūgiin kaigiroku* [Minutes of Plenary Session] 1 (May 9, 1969) [hereinafter *May 9, 1969 Minutes of House of Representatives*], available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=14849&SAVED_RID=4&PAGE=0&POS=0&TOTAL=0&SRV_ID=4&DOC_ID=580&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=16999; House of Councillors, 9 *Kagakujijutsu shinkōtaisaku tokubetsu iinnkai* [Minutes of Special Committee on the Science and Technology Promotion Measures] 1 (June 13, 1969) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=14849&SAVED_RID=1&PAGE=0&POS=0&TOTAL=0&SRV_ID=4&DOC_ID=495&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=21303.

¹⁵ Relevant governmental ministries and agencies ordered a series of communications, broadcasting and meteorological satellites to the Mitsubishi Heavy Industry (MHI), Toshiba and NEC respectively to advance satellite manufacturing business of the 3 companies. Nihon kōkūchū kōgyōkai [The Society of Japanese Aerospace Companies], 1990 nen no Nichibei eiseigōi izenno Jinkōeisei no seihuchōtatsu ni tsuite [Governmental Procurement of Satellites in Japan before the 1990 Japan-US Satellite Procurement Agreement], at 4-8 (2006) (unpublished, on file with author).

Then came the escalating trade friction between the U.S. and Japan, which resulted in the U.S.-Japan Satellite Procurement Agreement (Procurement Agreement) in 1990.¹⁶ This is deemed to be the second reason for delaying Japan's space commercialization. The Procurement Agreement requires Japan to open its non-research and development (non-R & D) satellite procurement to foreign satellite manufacturers. That provision was tantamount to a death sentence to the embryonic Japanese satellite industry. Needless to say, European countries, China, and India are not under such obligations with the U.S. The difference in the satellite manufacturing capability of, respectively, the U.S. and Japan resulted in the outcome of Japan's satellite procurement. Since 1990, 12 out of 13 non-R & D satellites procured by the Japanese government and its related corporations such as NHK (Japan Broadcasting Corporation) are U.S. made. Looking at the other spacefaring nations developing their commercial use of outer space in the 1990s, Japan could not participate in that trend, for it was caught in a vicious circle as it had to invest more resources into "R & D satellites" which fell outside the open bidding process. Thus, entering the 21st century, Japan had become a type of a spacefaring state which is strong in space science but weak in space commercialization.

In addition, the official non-military use policy, maintained since 1969, brought about increasing concerns among policymakers facing the growing threat from North Korean ballistic missiles. North Korea had already launched twice towards Japan in the 20th century in 1993 and 1998. By 2005, it was keenly felt by the members of Parliament that Japan's space policy had to be streamlined.

C. Recent Developments: The Beginning of Privatization of Space

The U.S. and ESA have constructed robust commercial launching industries since the 1980s. China joined this category around the beginning of 1990. Additionally, Russia is now a strong competitor in this regard, often having set up joint ven-

¹⁶ Agreement on Satellite Procurement, U.S.-Japan, 1990, available at <http://www.mac.doc.gov/japan/sector-specific/ta90061b.htm> (last visited Nov. 7, 2009).

tures with European and U.S. companies since the 1990s. India also succeeded in its first commercial launch in April 2007 and another in 2008. It was only Japan among the major spacefaring nations that had not experienced a commercial launch by the end of 2007.

However, the situation finally started to change by the special efforts taken both by the government and private industry including the then already started efforts to legislate a national space law to promote the commercialization of space. For instance, in April 2007, H-IIA rockets were transferred from Japan Aerospace Exploration Agency (JAXA) to the private Mitsubishi Heavy Industries (MHI), and it successfully conducted its first commercial launch of a private communications satellite, *Superbird-7* in August 2008. *Superbird-7*, operated by JSAT Corporation, was also made by a Japanese company, Mitsubishi Electronics. For JSAT, *Superbird-7* is the first Japanese satellite among its approximately 20 satellites to date. Then, in January 2009, MHI announced the conclusion of a contract for the commercial launch of a Korean multi-purpose satellite, *Kompsat-3*. Another private company, Galaxy Express Corporation (GALEX) is developing a GX rocket to launch medium-size satellites in cooperation with the U.S. company, Lockheed Martin, JAXA, and the Ministry of Economy, Trade and Industry (METI).¹⁷ In addition, several other entrepreneurial ventures are developing small rockets for suborbital flight.

The satellite manufacturing industry has also started to show signs of industrialization: Mitsubishi Electronics entered a contract with a multinational satellite operating company based in Singapore to make a communications satellite in December 2008.¹⁸ Finally, it seems that Japan also feels it is imperative to

¹⁷ After the completion of this article, on Aug. 25, 2009, the governmental participation in the GX rocket program was cancelled, except for the development of its LNG engine by the Strategic Headquarters for Space Development which was created by the Basic Space Law. See GX rocketto no kongo no susumekata ni tsuite [Decision on the Future of the GX Rocket], Aug.25, 2009 <http://www.kantei.go.jp/jp/singi/utyuu/gxrocket.pdf>.

¹⁸ See, e.g., Mitsubishidenki, Singaporu to Taiwan no jiki shōyō tsūshinisei ST-2 wo juchū [Mitsubishi Electronics Gets an Order for the Next Commercial Telecommunication Satellite "ST-2" from Singapore and Taiwan], Dec.3, 2008, <http://www.rbbtoday.com/news/20081203/56187.html>.

have a series of national space laws on a par with the other spacefaring nations.

This article addresses the current status and recent developments in Japan's national space law and how it will influence Pacific Rim Space Law and Activities. First, the organizational structure of Japan's space activities is explained. Second, the newly enacted Basic Space Law and the just-released first Basic Plan for Space Policy are considered in some detail. Third, the current Japanese laws and administrative regulations that relate to the authorization and continuing supervision of nongovernmental entities will be considered. The laws and regulations currently controlling JAXA and MHI launch activities and private sector telecommunications satellite operations will be included in the Space Activities Act, which is, at present, being drafted.¹⁹ This part of the law will not be drastically changed from the current practice. Therefore, studying current Japanese national laws and administrative regulations merits analysis. The article briefly concludes by discussing the implication of Japan's space laws in the broader perspective of Pacific Rim space laws and activities.

II. ORGANIZATIONAL STRUCTURE OF JAPAN'S SPACE ACTIVITIES

It has been less than a year since the application of the Basic Space Law started on 27 August 2008.²⁰ The government is in the midst of reviewing the purposes; functions; scope of the mandates; organized structures; and the administrative organs of JAXA and the other agencies that deal with space development and use in accordance with Art. 3 of the Basic Space Law's Supplementary Provisions in order to meet the basic principles provided for in the Law.²¹ The government is also reviewing

¹⁹ The Working Group to Study a Space Activities Act was formed on October 1, 2008 by the decision of the Experts Research Committee on Space Development Strategy under the Strategic Headquarters for Space Development. See *Uchū katsudō ni kansuru hōsei kentō working group no secchi ni tsuite* [Decision on the Establishment of a Working Group to Study a Space Activities Act], Oct. 1, 2008 available at <http://www.kantei.go.jp/jp/singi/utyuu/pdf/7.pdf>.

²⁰ Basic Space Law, *supra* note 9, at 483.

²¹ Item 5 of the resolutions adopted at the Cabinet Standing Committee of both Houses while considering the Basic Space Bill also required the review of the JAXA Law

relevant ministries and organizations which have jurisdiction to authorize and supervise R & D and use of space by JAXA and other agencies in order to promote Japan's space activities in a comprehensive and integrated manner as required by Art. 4 of the Supplementary Provisions. Thus, the supervisory authority for JAXA may be changed as well as the scope of the JAXA's mandates. Discussions are especially heated about under which ministry or ministries JAXA should be placed, which is, as of June 2009, still very much uncertain. Thus, in this section, Japan's present organizational structure, which already experienced substantial change in January 2001 due to the comprehensive governmental reform concerning space activities, is explained.

A. Agencies to Make Space Policy: Space Activities Commission (SAC) and Council for Science and Technology Policy (CSTP)

1. Space Activities Commission

Space Activities Commission (SAC), established under the Prime Minister's Office²² in 1968, used to plan, discuss, and decide Japan's comprehensive space policy and submitted its decision to the prime minister.²³ Once made, SAC's decision had to be respected by the Prime Minister.²⁴ SAC made Japan's national space policy titled, "Outlines of Space Development Policy" in 1978, 1984, 1989, and 1996. SAC made its last Japanese space policy, "Mid-to-Long Term Strategy for Space Develop-

for that purpose within about one year from the effective date of the Basic Space Law. See Cabinet Standing Committee, House of Representatives, *Uchū no kaihatsu oyobi riyō no suishin ni kansuru ken* [Issues Concerning the Promotion of Development and Use of Space] (May 9, 2009), http://www.soranokai.jp/pages/kihonhouA_ketsugi.html; Cabinet Standing Committee, House of Councillors, *Uchū kihonhōan ni taisuru hutaietsugi* [Attached Resolution Concerning Basic Space Bill] (May 20, 2009), available at http://www.soranokai.jp/pages/kihonhouA_080523b.html.

²² Prime Minister's Office was abolished on January 5, 2001. Sōrihu secchihōtō no haishi [Annulment of the Act for the Establishment of the Prime Minister's Office, etc.] (Dec. 22, 2000) available at <http://www.kantei.go.jp/jp/cyuo-syocho/990427honbu/seibi-2s3sh.htm>.

²³ See *Uchū kaihatsu iinkai secchihō* [Act for the Establishment of the Space Activities Commission], Act No. 40 of May 2, 1968, art. 1, <http://www.houko.com/00/01/S43/040.HTM>.

²⁴ *Id.* at art. 3.

ment” in December 2000. This was just before the supervisory authority for SAC was moved from the Prime Minister’s Office to the Ministry of Education, Culture, Sports, Science and Technology (MEXT) on 6 January 2001 and in the midst of central government reform.²⁵

Under MEXT’s jurisdiction, SAC was only permitted to make policy concerning JAXA’s space development and use; it was not permitted to make policy concerning other agencies or organizations dealing with space affairs. However, when the “Japanese Long-Term Program for Space Activities” (endorsed on 28 June 2001) was drafted by SAC as the first space activities plan under the jurisdiction of MEXT, it was treated as if it had been a guideline for a comprehensive national space policy. The reason is that, first, due to the non-military policy maintained in Japan and the scant participation by the private sector in space utilization, the science and technology policy for space was similar in content to the total space policy in Japan and, second, most of space development and use was carried out by JAXA.

Although to a smaller degree, the Ministry of Internal Affairs and Communications (MIC) has been conducting space development and use with JAXA and, until August 2006, so did the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). Therefore, the 2001 Long-Term Program for Space Activities was endorsed by MEXT, MIC, and MLIT. MLIT ceased to supervise JAXA as its meteorological satellite, *GMS-5 (Himawari-5)*, which was developed by JAXA, stopped all functions in 2006 and *GMS-5*’s successor, *MTSAT-1R (Himawari-6)*, was purchased from the U.S.²⁶ As of April 2009, JAXA is under the

²⁵ Monbukagakushō secchihō [Act for the Establishment of the Ministry of Education, Culture, Sports, Science and Technology], Act No. 96 of July 17, 1999 [hereinafter Act for the Establishment of the Ministry of Education], available at <http://law.e-gov.go.jp/htmldata/H11/H11HO096.html> Establishment of the SAC is based on the Act for the Establishment of the Ministry of Education and National Government Organizational Law. See Kokka gyōsei soshikihō [National Government Organizational Law], Law No. 120 of July 10, 1948, art. 8, available at <http://law.e-gov.go.jp/htmldata/S23/S23HO120.html>.

²⁶ *GMS-5* was made by JAXA and NEC, a Japanese company, before the Procurement Agreement was adopted, and launched in 1995. *GMS-5* ceased its function as a meteorological satellite in 2003, but it continued working as a data relay satellite while

control of MEXT for all its activities and MIC retains some control on the small portions of those activities.

2. Council for Science and Technology Policy

Under the 2001 central governmental reform, the newly established Council for Science and Technology Policy (CSTP) became the authority to make a comprehensive science and technology strategy relating to national goals, and it drafted the “5-year Science and Technology Basic Plan.” CSTP, chaired by the Prime Minister, reports its strategy, plans, and opinions on important issues of science and technology when it deems necessary to the Prime Minister and/or other relevant Ministers.²⁷ CSTP consists of a maximum of 14 members including the Prime Minister; competent Ministers; relevant high-ranking governmental officials; and people of learned knowledge, who are appointed by Prime Minister. As of April 2009, the Chief Cabinet Secretary, MIC, the Minister of Finance (MOF), MEXT, METI, and the Minister of State for Science and Technology Policy are members, along with people of learned knowledge from academia and industry.

In the field of development and use of space, CSTP submitted a “Basic Strategy of Space” to the Prime Minister in June 2002 and September 2004.²⁸ Since 2001, therefore, CSTP makes

Japan leased a U.S. GOES-9 as a substitute of GMS-5 until 28 June 2006. MLIT supervised JAXA with respect to the operation of GMS-5 until August of 2006. MEXT and MIC, Dokuritsughōseihojin uchūkōkūkenkyūkai hatsukikō no gyōmuunei narabini zaimu oyobi kaikei ni kansuru shōrei no ichibu wo kaiseisuru shōrei [Ministerial Ordinance to Amend the Part of the Management, Finance and Account Concerning Independent Administrative Agency Japan Aerospace Exploration Agency] MEXT and MIC Ministerial Ordinance No.1 of August 31, 2006, available at <http://www.lawdata.org/law/htmldata/H17/H17F11002004001.html>.

²⁷ CSTP was founded under the Act for the Establishment of the Cabinet Office and the Cabinet Order for the Establishment of the Council on Science and Technology Policy. See Naikakuhū Secchihō [Act for the Establishment of the Cabinet Office], Act No. 89 of July 16, 1999, arts. 18 & 26-36, available at <http://law.e-gov.go.jp/htmldata/H11/H11HO089.html>; Sōgō kagakugijutsu kaigirei [Cabinet Order for the Establishment of the Council on Science and Technology Policy], Cabinet Order No.258 of 2000, available at <http://www.kantei.go.jp/jp/singi/index/kagaku/konkyo.html>.

²⁸ Only 16 months after the first space strategy was adopted, again the CSTP began studying the long-term strategy of Japanese space, taking the special note of the rapid change of international political ramification and space improvement. See Kōgō no uchūkai hatsuriyō ni kansuru torikumi ni tsuite [Basic Measures of Space Development

comprehensive science and technology space policy relating to comprehensive national goals, while MEXT/SAC makes the basic long-term space plans to advance the frontier of scientific knowledge and advance cutting-edge space technology. Unlike the national space policy of other spacefaring nations, which contain necessary measures to promote commercialization and international cooperation including space diplomacy, both CSTP and MEXT/SAC deal with only science and technology issues.

Unfortunately, due regard has not necessarily been paid to the Basic Strategy of Space adopted by CSTP. This is mainly because CSTP is not authorized to request appropriations and partly because CSTP is not a competent authority to supervise JAXA which conducts most of the existing Japanese space activities.

A Strategic Headquarters for Space Development was established in August 2008 (Strategic Headquarters)²⁹ and it seems to require the demarcation of the mandates between the Strategic Headquarters and CSTP. While it is still premature to determine the precise demarcation, it is expected that CSTP will be in charge of selecting the space technology to be given priority in space programs pursued under the Basic Plan for Space Policy,³⁰ and it will evaluate the results of science and technological aspects of individual space projects approved by the Strategic Headquarters. In July 2009, CSTP will have completed the mid-term-evaluation of the third 5-year Science and Technology Basic Plan (2006-2010). Two of the space projects, the *Space Transportation System* (H-IIB rocket, H-II Transfer Vehicle (HTV), and successor to the M-5 solid propellant rocket) and the *Ocean and Earth Observation and Monitoring System*, are currently included as the Nation's most important strategic technology.³¹

and Use in the Near Future] (June 19, 2002), available at http://www8.cao.go.jp/cstp/output/iken020619_5.pdf; Wagakuni ni okeru uchūkai hatsuriyō no kihonsenryaku [Japan's Basic Strategy of Space Development and Use] (September 9, 2004) available at http://www8.cao.go.jp/cstp/output/iken040909_1.pdf.

²⁹ Basic Space Law, *supra* note 9, at 480-482, ch. IV.

³⁰ See, *infra* note 51; see, also, Appendix of this article.

³¹ See generally, Science and Technology Policy Council for Science and Technology Policy, <http://www8.cao.go.jp/cstp/english/index.html> (last visited Nov. 7, 2009).

*B. JAXA: Primary Organization to Conduct R & D
in Outer Space*

Facing the challenges of far-reaching administrative reform, three formerly independent organizations were consolidated into one independent administrative agency named JAXA³² on October 1, 2003. This was done in order to streamline Japan's aeronautical and aerospace research, development, and applications. Prior to the integration, the Institute of Space and Astronautical Science (ISAS),³³ the National Aerospace Laboratory of Japan (NAL),³⁴ and the National Space Development Agency of Japan (NASDA)³⁵ had conducted slightly overlapping mandates for air and space research and development. ISAS and NAL had been supervised by the Ministry of Education, while NASDA had been subject to the direction of the Science and Technology Agency (STA).³⁶

³² Dokuritsughöseihöjin uchükökü kenkyūkaihatsu kiköhö [Law Concerning Japan Aerospace Exploration Agency], Law No.161 of Dec. 12, 2002 [hereinafter JAXA Law], available at <http://law.e-gov.go.jp/htmldata/H14/H14HO161.html>; unofficial English translation available at <http://www.oosa.unvienna.org/oosadb/showDocument.do?documentUId=330&node=docs&country=JPN&cmd=add> (last visited Nov. 7, 2009). See also Dokuritsughöseihöjin tsüsokuhö [General Provisions Law Concerning Independent Administrative Agency], Law No.103 of July 16, 1999 [hereinafter General Provisions Law], available at <http://www.kantei.go.jp/jp/cyuo-syocho/990427honbu/houjin1-h.html>. The General Provisions Law stipulates general rules for all newly founded independent administrative agencies. *Id.*

³³ ISAS was founded in the University of Tokyo in 1964, which successfully launched Japan's first satellite into orbit in 1970 as the 4th nation in the world. In 1981, ISAS was restructured as a joint research organization among Japanese universities. Institute of Space and Aeronautical Science, <http://www.isas.ac.jp/e/index.shtml> (last visited Nov. 7, 2009).

³⁴ The NAL, originally named as the National Aeronautical Laboratory, was founded in 1955. The space division was added in 1963 and renamed as the National Aerospace Laboratory of Japan. NAL became an independent administrative corporation in 2001 even before integrated into JAXA. Japan Aerospace Exploration Agency, http://www.jaxa.jp/index_e.html (last visited Nov. 7, 2009).

³⁵ NASDA, a special public corporation, was established in 1969 to conduct space activities directly related to daily life of the citizenry. NASDA developed liquid propellant rockets and application satellites, while ISAS developed solid propellant rockets for scientific satellites. See Law Concerning the National Space Development Agency of Japan, Law No.50 of June 23, 1969, as amended [hereinafter NASDA Law], unofficial English translation available at <http://www.oosa.unvienna.org/oosadb/showDocument.do?documentUId=301&node=docs&cmd=add> (last visited Nov. 7, 2009).

³⁶ Ministry of Education and STA were integrated into the present Ministry of Science, Culture, Sports, Science and Technology on 6 January 2001 due to the Japan's

The objectives of JAXA are to facilitate (a) the development of academic research at universities or other institutes;³⁷ (b) the enhancement of the level of space and aeronautical science and technology;³⁸ and (c) the promotion of space development and utilization through the development, launch, tracking, and operation of “satellites.” Here “satellite” means satellites; flying objects to be launched beyond Earth orbit; artificial objects to be placed on celestial bodies; the rockets used to launch them;³⁹ and activities relating thereto.⁴⁰

Under the JAXA Law, conditions for aerospace and aeronautical research, development, and use differ. Aerospace research, development, and use shall be conducted “exclusively for peaceful purposes” and in an integrated and programmatic manner.⁴¹ Aeronautics shall be carried out only “in an integrated manner.”⁴² The requirement of “peaceful purposes” is only imposed on aerospace research, development, and use.

C. Other Organizations That Conduct Outer Space R & D

JAXA is overwhelmingly the most important space R & D organization. However, there are several other ministries, independent administrative agencies, and other agencies that also have special ties with the central government and which conduct research, development, and use of space either with JAXA or on their own.

central government reform. *See, e.g.*, Chüōshōchōtō kaikaku kihonhō [Basic Law for the Reorganization of the Central Government Ministries and Agencies] Law No.103 of June 12, 1998. *available at* <http://www.kantei.go.jp/jp/gyokaku/980303houan.html>.

³⁷ For that objective, JAXA is to conduct “academic research concerning Space Science in collaboration with universities or otherwise”. *See* JAXA Law, *supra* note 32, at art. 4.

³⁸ For that objective, JAXA is to conduct (i) basic research on aerospace and aeronautical science and technology, and (ii) “Fundamental Research and Development” concerning space and aeronautics. *Id.* (“Fundamental Research and Development” is defined in art. 2(2)).

³⁹ *Id.* at art. 2(3) (for definition of “Satellites”).

⁴⁰ *Id.* at art. 4.

⁴¹ *Id.*

⁴² *Id.*

i. Ministry of Internal Affairs and Communications

MIC deals with the development of space communications mainly through its independent administrative agency, the National Institute of Information and Communications Technology (NICT), which was established in 2004 by the joining the Communications Research Laboratory (CRL), an independent administrative agency, with the Telecommunications Advancement Organization (TAO), a chartered corporation. NICT designs, develops, and operates advanced communications satellites primarily in cooperation with JAXA. One of the recent examples is *WINDS (Kizuna)* launched in 2008 and *Engineering Test Satellite VIII (Kiku No.8)* launched in 2006. As already mentioned, MIC co-supervises JAXA with MEXT regarding the telecommunication affairs of MIC.

ii. Ministry of Economy, Trade and Industry

METI, does not co-supervise JAXA and carries out its space research and development through the New Energy and Industrial Technology Development Organization (NEDO), an independent administrative agency under METI, and the Institute for Unmanned Space Experiment Free Flyer (USEF), a foundation under METI. METI plays an important role in promoting space industrialization. Currently, METI is involved with the development of the next generation advanced sensors for the Earth observation satellites as well as small satellites. By 2008, METI successfully completed the parts of the development of a smaller GX rocket for the LNG engine for which it was responsible, and which was co-developed with MEXT and private companies.⁴³

iii. Ministry of Land, Infrastructure, Transport and Tourism

MLIT co-supervised JAXA until August 2006 because the Meteorological Agency, a part of MLIT, used to develop and operate meteorological satellites in cooperation with

⁴³ Concerning the GX rocket program, *see, supra* note 17.

NASDA/JAXA. Since 1990, the Meteorological Agency has leased one satellite (*GOES-9*) from the US, procured two satellites (*MTSAT-1*⁴⁴ and *MTSAT-1R*) from the U.S., and procured *MTSAT-2* from Mitsubishi Electronics, the first Japanese-made satellite built since the 1990 Procurement Agreement.

iv. MEXT, MIC, METI, MLIT, and the private sector:
MEXT-JAXA as a Linchpin in an all Japan Quasi-Zenith
Satellite Systems

All the space-related ministries, MEXT, MIC, METI, and MLIT have been involved with Japan's supplementary navigation system for the U.S. Global Positioning Systems (GPS), called *Quasi-Zenith Satellite Systems (QZSS)* project, to be composed of three geo-synchronous satellites.⁴⁵

While it was expected to proceed as a public-private joint project, almost ten years later, there were still no formal plans for the *QZSS*. Therefore, the Positioning and Geographic Information System Promotion Council announced in March 2006 that MEXT, through JAXA, would be primarily responsible to develop the first *Quasi-Zenith Satellite (QZS)* based on the Basic Policy on the Promotion of *QZSS Project*.⁴⁶ The Basic Policy stated that a 2-phased incremental development for *QZSS* was planned. The first phase would demonstrate the technological validation to enhance GPS availability, performance, and application by using the first *QZS* which was to be launched in 2010 by the H-IIA launcher. In the second phase, a public-private partnership (PPP) will be introduced to achieve a three *QZS* constellation to complete the *QZSS*. That policy was confirmed by the Basic Plan for the Advancement of Utilizing Geospatial

⁴⁴ The launching of *MTSAT-1*, in November 1999, by H-II 8 failed. Nihon no kokusan roketto H-II8gōki no uchiage shippai [Launch of Japan's H-IIA8 Failed] (Nov. 15, 1999) <http://www.astroarts.co.jp/news/1999/11/991115H2/index-j.shtml>.

⁴⁵ See, e.g., JAXA, Quasi – Zenith Satellite System, http://qzss.jaxa.jp/index_e.html (last visited Nov. 10, 2009).

⁴⁶ See, e.g., Cabinet Office, *Juntenchōeisei shisutemu keikaku no suishin ni kakaru kihonhōshin [Basic Policy on the Promotion of the Quasi-Zenith Satellite Systems Project]* (Mar. 31, 2008) available at <http://www.cas.go.jp/jp/seisaku/sokuitiri/180331/kihonhousin.pdf>.

Information adopted by the Cabinet Meeting in April 2008.⁴⁷ Section 3 of the Basic Act on the Advancement of the Utilizing Geospatial Information (NSDI Act of Japan),⁴⁸ made into law in May 2007, refers to the satellite navigation system. It obligates the State to take necessary measures to coordinate the work with the ministry that operates global satellite navigation systems⁴⁹ and to promote R & D as well as experiments on the operation of satellite navigation so as to increase the use of such satellite data.⁵⁰ The NSDI Act of Japan is expected to play a pivotal role in developing QZSS as a national project. The Basic Plan for Space Policy, approved by the Strategic Headquarters on 2 June 2009, indicates the possibility that eventually seven QZS may be put into orbit to advance the well-being of the citizenry and public safety.⁵¹ While it is highly ambiguous if the seven QZS constellation is to be truly realized, the Basic Space Law and Basic Plan for Space Policy at least show the determination to make Japan stronger in space applications and to make it a real spacefaring nation.

⁴⁷ Geographical Survey Institute of MLIT, *Chirikūkan jōhō katsuyō suishin keikaku* [Basic Plan for the Advancement of Utilizing Geospatial Information] 18-19 (Apr.15, 2008), available at <http://www.gsi.go.jp/common/000003539.pdf>; (unofficial English translation by the Geographical Survey Institute, Government of Japan, available at <http://www.gsi.go.jp/common/000043664.pdf>).

⁴⁸ *Chirikūkan jōhō katsuyō suishin kihonhō* [Basic Act on the Advancement of Utilizing Geospatial Information], Act No. 63 of May 30, 2007 [hereinafter NSDI Act of Japan], available at <http://www.cas.go.jp/jp/seisaku/sokuitiri/tirikuukan/pdf/houritu.pdf> (unofficial English translation by the Geographical Survey Institute, Government of Japan, available at <http://www.gsi.go.jp/common/000002047.pdf>). See also, unofficial translation of Geospatial Information Utilization Promotion Bill, 33 J. SPACE L. 457 (2007)).

⁴⁹ NSDI Act of Japan, *supra* note 48, at art. 20.

⁵⁰ *Id.* at art. 21.

⁵¹ Basic Plan for Space Policy, released on 2 June 2009, suggests the possibility of eventually operating 7 QZS. See Strategic Headquarters, *Basic Plan for Space Policy* 19 (June 2, 2009), available at http://www.kantei.go.jp/jp/singi/utyuu/basic_plan.pdf; See also, Chapter III 1 (1)D (Navigation Satellite System) of the Appendix of this article. The Basic Plan for Space Policy was summarized by the present author in June 2009. See Appendix of this article. Just before the publication of this article, the Strategic Headquarters offered the complete translation of the Basic Plan for Space Policy on October 23, 2009.

v. CSICE

The introduction of the Information Gathering Satellites (IGS) was decided in December 1998 at a Cabinet Meeting after the North Korean intermediate ballistic missile, *Taepodong-1*, was launched and flew over Japanese territory on 31 August 1998. IGS were developed by JAXA, and are subject to the jurisdiction of Cabinet Satellite Intelligence Center (CSICE) under the Cabinet Intelligence and Research Office (CIRO) of the Cabinet Secretariat. The mandate of CSICE includes IGS operation, analysis of IGS images, and analysis of the images of other satellites with information collected by any other means.⁵² IGS is defined as “artificial satellites in order to collect imaging information useful for assuring Japan’s security, addressing large-scale disasters, and other important policy matters of the Cabinet.”⁵³

It merits raising here why it was not the Japan Defense Agency (that is, the Ministry of Defense as of 9 January 2007) but rather the civilian CIRO/CSICE that operates IGS. When the NASDA Law was passed in 1969, Diet Resolutions were also adopted by both Houses to assure that Japanese space activities would be kept within the limits of “exclusively for peaceful purposes.”⁵⁴ The interpretation of “exclusively for peaceful purposes” is not necessarily restricted to “non-military” uses of outer space. Such interpretation would certainly be contradicted by State practice since the advent of space exploration and use. It is widely understood that “all military uses are permitted and lawful as long as they remain ‘non-aggressive’ as per Article 2(4) of the U.N. Charter, which prohibits ‘the threat or use of force.’”⁵⁵ However, it was repeatedly stated in the debate of the resolutions, that, for Japanese purposes, the term “peaceful pur-

⁵² Naikakukanbō soshikirei [Cabinet Order on the Organization of Cabinet Secretariat], Cabinet Order No. of 219 of July 31, 1957 as amended, at art. 4-2(2)2-3, available at <http://www.houko.com/00/02/S32/219.HTM>.

⁵³ *Id.* at art. 4-2(2)1.

⁵⁴ *May 9, 1969 Minutes of House of Representatives*, *supra* note 14.

⁵⁵ Ivan A. Vlasic, *The Legal Aspects of Peaceful and Non-Peaceful Uses of Outer Space*, in *PEACEFUL AND NON-PEACEFUL USES OF SPACE* 37, 40 (Bupendra Jasani, ed., 1991).

poses” shall be interpreted as strictly “non-military” irrespective of the international standard of interpretation.⁵⁶ Because both resolutions were adopted unanimously, this position was particularly strong.⁵⁷

The non-military principle caused a series of difficulties for the practical use of space by the Self Defense Forces (SDF). First, the question was asked if SDF could use the CS-2 telecommunication satellite that was operated by the International Telegraph and Telephone Corporation (KDD), a public corporation, for civil use.⁵⁸ Then, the legality of the SDF asking for a UHF equipment budget to receive radio waves from the U.S. navy *Fleetsat* telecommunication satellites in joint training was raised.⁵⁹ These circumstances resulted in the release of the “governmental unified view” in February 1985. That view stated that SDF could be a user of satellites which had already been widely used in the everyday life of Japan’s civil society and satellites with similar functions.⁶⁰ Based on that unified view, SDF

⁵⁶ See, e.g., House of Representatives, 11 *Kagakujutsu shinkôtai saku tokubetsu iinkaigiroku* [Minutes of Special Committee on Science and Technology Promotion Measures] 5 (May 8, 1969) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=11764&SAVED_RID=1&PAGE=0&POS=0&TOTAL=0&SRV_ID=4&DOC_ID=726&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=11914.

⁵⁷ Law making in the Japanese Diet starts with the introduction of a bill for topics that are capable of becoming law, either as a matter of politics or because of legal content. Some topics which do not have enough political support to become a law or which do not involve legal matters can be introduced and adopted as Diet resolutions. In other words, usually, a Diet resolution involves more controversial subjects. While Diet resolutions are not legally binding, they can be strong politically, because the executive branch has to act in line with the Diet resolutions. All Diet resolutions, by nature, consist of two resolutions: one from the House of Representatives and one from the House of Councilors.

⁵⁸ See, e.g., House of Representatives, 5 *Yosan iinnkaigiroku* [Minutes of the Standing Budget Committee] 14 (Feb 5, 1983) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=14599&SAVED_RID=2&PAGE=0&POS=0&TOTAL=0&SRV_ID=5&DOC_ID=6311&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=14932.

⁵⁹ See, e.g., House of Representatives, 4 *Yosan iinnkaigiroku* [Minutes of the Standing Budget Committee] 4 (Feb.5, 1985) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=14599&SAVED_RID=3&PAGE=0&POS=0&TOTAL=0&SRV_ID=6&DOC_ID=1508&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=15949.

⁶⁰ See, e.g., House of Representatives, 5 *Yosan iinnkaigiroku* [Minutes of the Standing Budget Committee] 3 (Feb.6, 1985) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=14599&SAVED_RID=4&PAGE=0&POS=0&

has become a user of the IGS that have been operated since March 2003 by the CSICE.

In order to observe the conditions imposed on the SDF by the governmental unified view of 1985, the resolution of IGS images should not be better than the resolution available from other satellites in the market. Likewise, for instance, early warning satellites are beyond the reach of the SDF since that kind of satellite cannot be widely used in civil life. Because the JAXA Law proscribes the military use of space,⁶¹ even after the Basic Space Law lifted the long-standing ban of military-use of space, JAXA cannot engage in the manufacturing or the operation of military reconnaissance satellites unless the JAXA Law is amended.

III. JAPAN'S FIRST SPACE LAW: THE BASIC SPACE LAW

A. Drafting Process

Mr. Takeo Kawamura was Minister of MEXT from April 2003 until November 2004. As soon as he resigned in November 2004, Mr. Kawamura started working to enact a framework law in order to design Japan's comprehensive space policy. His terms as Minister of MEXT were turbulent when it came to the space activities of NASDA/JAXA. During that time, the operation of *ADEOS-II (Midori-II)*, a remote sensing satellite, had to be terminated in October 2003, within a year of its launch; the launch of H-IIA 6 failed, thereby losing two of the IGS satellites in November 2003; and the placing of the science probe *Planet-B (Nozomi)* in an Mars orbit had to be abandoned in December 2003. Concerned about the successive failures and insufficient commercialization in contrast to other spacefaring nations, Mr. Kawamura was quick to act. In February 2005, the Study Group to Design a National Space Strategy was set up in which Vice-Ministers and Parliamentary Secretaries of the relevant ministries participated. After meeting 10 times, the study report was

⁶¹ JAXA Law, *supra* note 32, at art. 4.

submitted to the Chief Cabinet Secretary. At the same time, the LDP Space Development Special Committee was established. That committee made a report in April 2006 to urge the LDP to take appropriate measures to submit a Basic Space Bill to the Diet. For that purpose, the ruling coalition parties, the LDP and the New Komeito formed a project team in November 2006. The two parties consulted more than thirty times and completed a draft Basic Space Bill.⁶² The bill was submitted to the House of Representatives on 20 June 2007.⁶³

Deliberations on the Basic Space Bill were not undertaken for ten months because other bills were given priority in the “twisted” Diet where the two legislative houses were controlled by different parties. The ruling coalition parties had seats at the more important House of Representatives in contrast to the House of Councillors, which was overwhelmed by the largest opposition party, the Democratic Party of Japan (DPJ). In the mean time, the DPJ expressed the intention to submit its version of a space bill. A breakthrough came in late in April 2008 when the DPJ supported the coalition bill. It was, in a way, natural for the difference of policy between the LDP and DPJ, especially on security use of space, was smaller than that of the LDP and the New Komeito. The New Komeito had been adamant to keep the interpretation of “peaceful” as meaning “non-military.”

On 9 May 2009, the bill submitted the previous June was withdrawn and a new bipartisan Basic Space Bill⁶⁴ proposed by the LDP, the New Komeito, and the DPJ was submitted. The new bill, submitted to the House of Representatives, was substantially identical to the older bill; only some words were changed or added in order to highlight the necessity of space commercialization, strongly urged by DPJ.

The new bill was voted for by an overwhelming majority at the Cabinet Standing Committee on 9 May and then at the Ple-

⁶² Unpublished documents on the drafting process of the Basic Space Bill are on file with author.

⁶³ Bill No. 50 of June 20, 2007, *supra* note 8.

⁶⁴ Uchū kihonhōan [Basic Space Bill] Bill No. 17 of May 9, 2008. *available at* http://www.shugiin.go.jp/index.nsf/html/index_gian.htm.

nary on 13 May.⁶⁵ Then it was sent to the Cabinet Standing Committee of the House of Councillors and voted for at the Cabinet Standing Committee on 20 May and at the Plenary on 21 May. The bill passed with an overwhelming majority of 221 in favor, 14 against, and no abstentions. On 21 May, the Basic Space Bill was made into a full-fledged law. A week later, on 28 May, it was promulgated, and became effective on 27 August in accordance with Article 1 of the Supplementary Provisions of the Basic Space Law.

The Cabinet Standing Committees of both Houses adopted the Diet Resolutions, the contents of which are identical.⁶⁶ The Diet Resolutions provided for the composition of the Secretariat of the Strategic Headquarters. Also, both resolutions set a time-frame on the restructuring of JAXA, SAC, and other agencies as well as the making of the Space Activities Act. Restructuring of space-related agencies was recommended to be completed within one year after the entry into force of the Basic Space Law, and the Space Activities Act, which is currently being made, must pass within two years. The Chief Cabinet Secretary stated that the contents of the both resolutions would be duly respected.⁶⁷

B. The Contents of the Basic Space Law

i. Summary

The Basic Space Law contains thirty-five articles, four supplementary provisions, and consists of five chapters. Chapter 1, General Provisions, provides for the Purpose of the Law,⁶⁸ Basic

⁶⁵ The number concerning in favor and against the bill was not recorded.

⁶⁶ See, *supra* note 21.

⁶⁷ House of the Representatives, 14 *Naikaku iinkaigiroku* [*Minutes of Cabinet Standing Committee*] 16 (May 9, 2008) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=16987&SAVED_RID=1&PAGE=0&POS=0&TOTAL=0&SRV_ID=9&DOC_ID=8732&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=17093; House of Councillors, 14 *Naikaku iinkai kaigiroku* [*Minutes of Cabinet Standing Committee*] 15 (May 20, 2008) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=16987&SAVED_RID=2&PAGE=0&POS=0&TOTAL=0&SRV_ID=9&DOC_ID=13261&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=17595.

⁶⁸ Basic Space Law, *supra* note 9, at 472, art.1.

Principles,⁶⁹ and the concrete obligations of the national Government as well as the local Governments to implement the Basic Principles.⁷⁰ Chapter 2, Basic Measures, requires the realization of the Basic Principles.⁷¹ Chapter 3, specifies the necessary contents and the procedures on the Basic Plan for Space Policy to be drawn up by the Strategic Headquarters.⁷² Chapter 4, Strategic Headquarters for Space Development, provides for its organizational rules in Art. 25-Art. 34. Finally, Chapter 5, Enactment of Legislation with regard to Space Activities in Article 35, sets out the obligation of the Government to legislate a Space Activities Act. The supplementary provisions cover not only the procedural decisions on the effective date,⁷³ but also the more substantial requirements on the future management structures which are supposed to be completed within approximately one year after the entry into force of the Basic Space Law. This includes, establishing an office to conduct the day-to-day Strategic Headquarters affairs⁷⁴ (Art. 2); review of JAXA modalities and other space institutions;⁷⁵ and review of the administrative organizations as a whole in order to enhance Japan's space capability in a comprehensive and integrated manner.⁷⁶

The provisional office of the Strategic Headquarters is responsible for drafting the first Basic Plan for Space Policy with the help of the Experts Research Committee on Space Development Strategy (Experts Research Committee). This Committee has 16 members and was established on 12 September 2008. The Experts Research Committee has two working groups: the Working Group on the Study of the Restructuring for the Organization for Space Development and Use with eight members and the Working Group to Study a Space Activities Act with

⁶⁹ *Id.* at 472-474, arts. 2-7.

⁷⁰ *Id.* at 474-475, arts. 8-12.

⁷¹ *Id.* at 475-478, arts. 13-23.

⁷² *Id.* at 478-479, art. 24.

⁷³ *Id.* at 483, art. 1 of the Supplementary Provisions.

⁷⁴ *Id.* at 483, art. 2 of the Supplementary Provisions.

⁷⁵ *Id.* at 483, art. 3 of the Supplementary Provisions.

⁷⁶ *Id.* at 483, art. 4 of the Supplementary Provisions.

eleven members. Both were established on 1 October 2008.⁷⁷ The Basic Plan for Space Policy was approved by Strategic Headquarters on 2 June 2009.⁷⁸

ii. Basic Principles

The purpose of the Basic Space Law is to comprehensively and systematically promote Japan's space development and use in order to improve the lives of its citizens and to promote national economic development, international peace, and the welfare of humankind as a whole.⁷⁹

The Basic Principles of the Law include: peaceful use of outer space;⁸⁰ improvement of the lives of the citizenry;⁸¹ improvement of human security and construction of a safe and secure society;⁸² improvement of national security;⁸³ advancement of industries;⁸⁴ development of human society by the improvement of space science and technology;⁸⁵ promotion of international cooperation;⁸⁶ enhancement of space diplomacy to advance Japan's national interests in the international society;⁸⁷ and sustainable development and use of outer space by the protection of the outer space environment.⁸⁸

⁷⁷ The author is a member of the Experts Research Committee and both working groups. Strategic Headquarters, Uchūkaihatsusenryaku senmon chōsakai ni tsuite [Decision on the Experts Research Committee on the Space Development Strategy], Sept. 12, 2008, available at <http://www.kantei.go.jp/jp/singi/utyuu/pdf/1.pdf>; Uchūkai-hatsuriyō taiseikentō working group no secchi ni tsuite [Decision on the Establishment of the Working Group on the Study of the Restructuring for the Organization for Space Development and Use] Oct. 1, 2008, available at <http://www.kantei.go.jp/jp/singi/utyuu/pdf/4.pdf>; Decision on the Establishment of a Working Group to Study a Space Activities Act, Oct. 1, 2008, *supra* note 19.

⁷⁸ *Basic Plan for Space Policy*, *supra* note 51.

⁷⁹ Basic Space Law, *supra* note 9, at 472, art. 1.

⁸⁰ *Id.* at art. 2.

⁸¹ *Id.* at 473, art. 3.

⁸² *Id.*

⁸³ *Id.*

⁸⁴ *Id.* at art. 4.

⁸⁵ *Id.* at art. 5.

⁸⁶ *Id.* at art. 6.

⁸⁷ *Id.* at art. 6.

⁸⁸ *Id.* at 474, art. 7.

iii. Interpretation of "Peaceful Purposes"

Among the Basic Principles, more attention may be paid to Article 2 regarding peaceful use of outer space, for it shows the change of Japan's long-standing space policy. It provides that, "[S]pace Development and Use shall be carried out in accordance with treaties and other international agreements with regard to Space Development and Use including the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, in accordance with the pacifism of the Constitution of Japan."⁸⁹ It implies that Japan has adopted the interpretation of "non-aggressive" use as being the peaceful use of outer space in accordance with the Outer Space Treaty, but within the limits of the pacifism reflected in Article 9 of the 1946 Japanese Constitution.⁹⁰ Thus, the permissible scope of defensive use of outer space in Japan is narrower in concept than in other space-faring nations. For instance, Provision 2 of Article 9 of the Constitution prohibits the maintenance of the "land, sea, and air forces, as well as other war potential,"⁹¹ which is interpreted by the Japanese Government that the resort to collective self-defense, permissible under Article 51 of the UN Charter, shall be forbidden.⁹² Thus, based on Art. 2 of the Basic Space Law, SDF can develop, manufacture, own, and operate defense-related satellites to support its terrestrial operations including ballistic missile defense (BMD) within the scope of individual self-defense.

The Committee on the Promotion of the Development and Use of Space, Ministry of Defense (MOD) released a Basic Policy Relating to the Development and Use of Space on 15 January

⁸⁹ *Id.* at 473, art. 2.

⁹⁰ Nihonkoku kenpō [Constitution of Japan] Nov. 3, 1946. *available at* http://www.kantei.go.jp/foreign/constitution_and_government_of_japan/constitution_e.html.

⁹¹ *Id.* at art. 9 (2).

⁹² *See, e.g.*, Shūgiingiin Inaba Seiichi kun teishutsu 'Kenpō kokusaihō to shūdanteki jieiken' ni kansuru shitsumon ni taisuru tōbensho [Governmental Answer to the Member of the House of Representatives Mr. Seiichi Inaba on the question of the 'Constitution of Japan, International Law and Collective Self-Defense'] May 29, 1981, *available at* http://www.clearing.mod.go.jp/hakusho_data/2007/2007/html/js210800.html.

2009.⁹³ It states that the MOD would act in accordance with the Basic Space Law and is ready to cooperate and participate in the comprehensive and systematic space development and use of Japan in an appropriate manner under the Basic Plan for Space Policy. The Basic Policy then, expresses that the test of the governmental unified view made in 1985 would not be applied anymore.⁹⁴ The Basic Policy regards it more important to construct an effective Command, Control, Communication, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) in consideration of the passive nature of Japan's defense posture reflecting the pacifism of the Constitution of Japan. Thus, imaging surveillance satellites, SIGINT, early warning satellites, and military communications satellites are theoretically possible options, while the use of civil space technology and the procurement of civilian space capability have to be first taken into consideration due to the strict budget.⁹⁵ To attain responsive and affordable space, an air-launched system is included as a future candidate for the MOD.⁹⁶

iv. Basic Measures

Chapter 2 of Basic Space Law specifies the Basic Measures for the implementation of the Basic Principles. The Government shall maintain and improve the space infrastructure including satellite networks⁹⁷ as well as autonomous launching capability.⁹⁸ The State shall promote space development and use to contribute to ensuring peace and security of the international society and the security of Japan.⁹⁹ The Government shall also take necessary steps to promote private space business by purchasing goods and services from private operators; to develop

⁹³ Committee on the Promotion of the Development and Use of Space, MOD, *Uchū kaihatsuriyō ni kansuru kihonhōshin ni tsuite [Basic Policy Relating to the Development and Use of Space]* (Jan. 15, 2009), available at <http://www.mod.go.jp/j/info/uchuukaihatsu/pdf/kihonhoushin.pdf>.

⁹⁴ *Id.* at 9.

⁹⁵ *Id.* at 10-12.

⁹⁶ *Id.* at 12-13.

⁹⁷ Basic Space Law, *supra* note 9, at 475, art. 13.

⁹⁸ *Id.* at 476, art. 15.

⁹⁹ *Id.* at 475, art. 14.

launching sites and other facilities; to promote rapid transfer of technology to private space sectors; to encourage space business operators to use the results of the governmental research and development for commercialization; and to establish taxational and financial measures to facilitate investments by private operators.¹⁰⁰

Basic Measures further include appropriate steps to ensure international cooperation for preservation of the space environment¹⁰¹ as well as measures to be taken to control information concerning the development and use of outer space.¹⁰² Detailed rules for the promotion of private space business with a licensing system, third-party liability, and obligatory insurance, etc.; environmental protection provisions; and information control provisions will be provided for in the Space Activities Act now in the process of being drafted.¹⁰³

v. Strategic Headquarters for Space Development and Basic Plan for Space Policy

In order to reorganize Japan's space management structure, the Strategic Headquarters shall be established under the Cabinet. The Prime Minister serves as the Director-General and the Chief Cabinet Secretary and the Minister of State for Space Policy as the Vice Directors-Generals. Comprising all the Ministers as members of the Strategic Headquarters, the comprehensive space plan could be formulated and implemented from scientific research; civil application to attain safe and secure society; commercialization; and security use.¹⁰⁴

Upon the adoption of the draft Basic Plan for Space Policy at the Experts Research Committee on 27 April 2009, it was publicized immediately for public comment until 18 May. One thousand five hundred ten comments were sent to the Secre-

¹⁰⁰ *Id.* at 476, art. 16.

¹⁰¹ *Id.* at 477, art. 20.

¹⁰² *Id.* at 478, art. 23.

¹⁰³ *Supra* note 19.

¹⁰⁴ Basic Space Law, *supra* note 9, at 480-482, arts. 25-34.

tariat between 28 April and 18 May.¹⁰⁵ Then, the Experts Research Committee was summoned on 26 May to finalize the draft. The draft was formally approved by the Strategic Headquarters and became the first Basic Plan for Space Policy of Japan on 2 June 2009.

The Basic Plan for Space Policy consists of six basic targets, corresponding to the Basic Principles of the Basic Space Law.¹⁰⁶ In order to fulfill the six basic targets, five satellite systems and four R & D programs are selected for the next five years. The selected five satellite systems are: land and ocean observation satellite system to contribute to Asia and other regions; Earth environment observation and meteorological satellite system; advanced information and telecommunications satellite system; navigation satellite system; and satellite system for security purposes. The four R & D programs in various fields are: space science program; human space activities program; solar power system R & D program; and the small demonstration satellite program. Additionally, the Basic Plan for Space Policy explains in detail seven concretized action plans to implement six targets. In doing so, it explains which of the nine programs and systems will help to achieve each of the action plan. The summary of Basic Plan for Space Policy is appended in Appendix.¹⁰⁷

vi. Space Activities Act

Chapter 5, Art. 35, deserves to be highlighted because it obligates the State to draft national space legislation. Provision 1 of Art. 35 stipulates that the Government shall legislate necessary laws and regulations to deal with space activities and the implementation of international space treaties and agreements as comprehensively, systematically, and promptly as possible. Provision 2 provides that national laws and regulations shall be drawn up so as to increase national interests of Japan within

¹⁰⁵ Strategic Headquarters, *Uhu kihonkeikakuan ni taisuru iken no boshu (paburikku komento) no kekka ni tsuite* [Results of the Public Comments for the Draft Basic Plan for Space Policy] (May 26, 2009), available at <http://www.kantei.go.jp/jp/singi/utyuu/pc/090526/090526pc.html>.

¹⁰⁶ Basic Space Law, *supra* note 9, at 472-474, arts. 2-7.

¹⁰⁷ *Basic Plan for Space Policy*, *supra* note 51.

the international society and to improve private space business. The resolutions adopted at the Cabinet Standing Committee in the House of Representatives and the House of Chancellors on 9 May and 20 May respectively request that the Space Activities Act of Japan be completed no later than 2 years from the entering into force of the Basic Space Law. Based on such resolutions, the Working Group to Study a Space Activities Act mentioned above has been conducting an intensive study so that the Strategic Headquarters will be able to submit the bill to the Diet within that time frame. The forthcoming Space Activities Act will demonstrate the future course of Japan's privatization and commercialization of space business as well as how Japan adopts the recent developments of international space law including the concept of "launching states;" the relationship between the transfer of the ownership and registration of space objects; and the standard for registering space objects.

IV. CURRENT SITUATION OF JAPAN'S NATIONAL LAWS ON SPACE ACTIVITIES: CONCERNING THE ACTIVITIES OF NASDA/JAXA

A. JAXA's Future Status

The Working Group to Study a Space Activities Act is now in the process of drafting a Space Activities Bill to be submitted to the Diet in January 2010.¹⁰⁸ Similar to the way that the French space legislation reflected long-time practices taken by related actors to enhance transparency to the potential clients rather than stipulating newly-invented rules, it is expected that Japanese law would not change the structure of authorization and supervision drastically, except the accompanying rules pursuant to the possible change of the controlling Minister of JAXA. That was, originally, planned to be specified in the Basic Plan for Space Policy formally approved on 2 June 2009, but differing views remain to be addressed. As of June 2009, it is

¹⁰⁸ The Experts Research Committee, *Uchūkatsudō ni kansuru hōseikentō working group hōkokushoan: chūkan torimatome [Interim Report on the Prospective Space Activities Act by the Working Group to Study a Space Activities Act]* (Aug. 24, 2009) [hereinafter *Interim Report on the Prospective Space Activities Act*], available at <http://www.kantei.go.jp/jp/singi/utyuu/housei/dai6/siryou1.pdf>.

still uncertain if JAXA continues to be under the jurisdiction of MEXT and other related Ministries such as METI, or if some parts or all functions of JAXA will be transferred to the Cabinet Office. MEXT is responsible for science and technology aspects of space activities; therefore, some parliament members strongly claim that JAXA must be under the Cabinet Office to better fulfill the far-reaching goal of the Basic Space Law. In contrast, the research divisions in JAXA and academics in general, claim that the freedom of research may be threatened unless JAXA is placed under the MEXT. It is, thus, sometimes maintained, that JAXA should be split into science and technology divisions (former ISAS) and application divisions (former NASDA), the former being under the MEXT and the latter, the Cabinet Office. However, concerns are voiced on such views due to the possibility of duplicated mandates that might bring about non-efficiency. Considering the history that led the consolidation of the three space agencies into one in 2003, which was to avoid duplication of the mandates, some say to split JAXA again into parts cannot be a choice.

In this section, the present legal and administrative arrangements concerning authorization and supervision of non-governmental activities; the third-party liability system; and residual relevant legal matters will be explained in some detail below since there is not, as yet, a Space Activities Act.

*B. Background to Japan's Accession to Three of the
U.N. Treaties on Outer Space*

Although Japan is an original member of the Outer Space Treaty,¹⁰⁹ it was not until 1983 when it acceded to the 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue and Return Agreement),¹¹⁰ the 1972 Convention on International Liability for Damage Caused by Space Objects (Li-

¹⁰⁹ Outer Space Treaty, *supra* note 11.

¹¹⁰ Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *opened for signature* Apr. 22, 1968, 672 U.N.T.S.119; 19 U.S.T.

ability Convention),¹¹¹ and the 1975 Convention on Registration of Objects Launched into Outer Space (Registration Convention).¹¹² In 1975, before acceding to these three treaties, SAC set up a special Working Group on the U.N. Space Treaties to study whether Japan needed to adopt domestic space laws in order to implement the treaties. The next year, the Working Group answered that as long as the following three conditions remained, it was not necessary to enact new national laws on space activities. The three conditions were: (1) that launch vehicles were owned and operated only by NASDA and ISAS and that both were legal persons either with specific ties to the government (NASDA) or itself being a governmental agency (ISAS); (2) telemetry, tracking, and control (TT &C) of space objects were conducted solely by NASDA; and (3) human space activities were not included in the national space plan.¹¹³ Finally, based on various assessments including the one mentioned above, the Cabinet Meeting held on 7 June 1983, orally agreed that Japan would accede to three of the U.N. treaties without any additional domestic laws to be enacted. It was further agreed that a national law would be swiftly adopted through close cooperation among the relevant ministries and agencies in case such a necessity was recognized in the future.¹¹⁴

¹¹¹ Convention on International Liability for Damage Caused by Space Objects, *opened for signature* Mar. 29, 1972, 961 U.N.T.S. 187; 24 U.S.T. 2389 [hereinafter Liability Convention].

¹¹² Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 1023 U.N.T.S. 15; 28 U.S.T. 695; [hereinafter Registration Convention].

¹¹³ Special Working Group on the U.N. Treaties on Outer Space of the SAC, *Uchikankeijōyaku no teiketsu ni atatte hitsuyōna kokunaihōrei ni kansuru kihonjikkō ni tsuite* [Report on the Basic Issues on the Necessary National Laws for the Accession to the UN Treaties on Outer Space] 2-3 (June 22, 1976) [hereinafter SAC Report] (on file with author).

¹¹⁴ Kakugi kōtō ryōkai [Oral Agreement of the Cabinet Meeting], *Uchikankeisanjōyaku eno kanyū oyobi rikō* [Accession to and Implementation of the Three of the UN Treaties on Outer Space] (Mar. 29, 1983) (on file with author).

*C. Authorization and Supervision of Non-Governmental Entities:
JAXA's Case*

i. Authorization and Supervision by the "Mid-Term Goal"

JAXA is under the jurisdiction of the competent Ministers which authorize and supervise its activities in accordance with the JAXA Law and the General Provisions Law. Since most of space activities have been conducted by JAXA either directly or indirectly, it is a common understanding that the obligations under Article VI of the Outer Space Treaty, can be appropriately assumed through the existing laws and administrative regulations.

As of June 2009, two Ministers hold jurisdiction over JAXA. MEXT supervises all the mandates of JAXA, and MIC supervises, authorizes, or approves some parts of JAXA's mandates including the development and operation of telecommunications satellites and facilities not within the sphere of academic research.¹¹⁵

Authorization and supervision of JAXA space activities has been conducted through the "Long-Term Program." It is a program for approximately the next ten years taking note of prospective development of space activities in twenty to thirty years. It is decided by competent Ministers in accordance with the resolution made by SAC.¹¹⁶ The "Medium-Term Goal," for the next Five years, shall be set and/or changed by competent Ministers pursuant to the "Long-Term Program."¹¹⁷ In order to implement the "Medium-Term Goal," JAXA shall submit its "Medium-Term Program" containing concrete plans for the next five years for approval by the competent Ministers.¹¹⁸ In order to

¹¹⁵ MEXT and MIC, Dokuritsughōseihojin uchūkōkūkenkyūkai hatsukikō ni kansuru shōrei [Ministerial Ordinance Concerning Independent Administrative Agency Japan Aerospace Exploration Agency] MEXT and MIC Ministerial Ordinance No.1 of July 22, 2005, available at <http://law.e-gov.go.jp/htmldata/H17/H17F11002004001.html>. The definition of "satellites" is specified in JAXA Law.

¹¹⁶ JAXA Law, *supra* note 32, at art. 19.

¹¹⁷ JAXA Law, *supra* note 32, at art. 19; General Provisions Law, *supra* note 32, at art. 29 (1). The latter article provides that competent Ministers shall set the Medium-Term Goal between 3 and 5 years. In JAXA's case, it is decided every 5 years.

¹¹⁸ General Provisions Law, *supra* note 32, at art. 30.

assure the effective implementation of its “Medium-Term Program,” JAXA shall submit reports annually to competent Ministers for evaluation.¹¹⁹ Its annual report on the “Medium-Term Program” is assessed by the Evaluation Commission for Independent Administrative Agencies of each competent Minister.¹²⁰ A final report shall be submitted by JAXA to competent Ministers within the three months from the completion of the Medium-Term Program.¹²¹

ii. Authorization and Supervision of JAXA Launches and Consigned Launches through Existing National Laws

Launches and consigned launches by JAXA shall be subject to various laws such as the Radio Law,¹²² Gun-Powder Control Law;¹²³ the Hi-Pressured Gas Safety Law;¹²⁴ and the Electricity Utility Law,¹²⁵ which function as the authorization requirements usually provided for in the space activities law.¹²⁶ JAXA shall

¹¹⁹ *Id.* at arts. 31 & 32.

¹²⁰ That Commission is established based on Art.27 of JAXA Law and Arts. 29 - 35 of General Provisions Law. See JAXA Law, *supra* note 32, at art. 27; General Provisions Law, *supra* note 32, at arts. 29 - 35.

¹²¹ General Provision Law, *supra* note 32, at art. 33. Members of the Evaluation Commission are selected among people of learned knowledge and appointed by a competent Minister. See Monbukagakushō Dokuritsu gyōseihojin hyōkaiinkairei [Cabinet Order Concerning the Evaluation Commission for the Independent Administrative Agency of the Ministry of Education, Sports, Culture, Science and Technology], Cabinet Order No. 320 of June 7, 2000, at art. 2. available at <http://hourei.hounavi.jp/hourei/H12/H12SE320.php>. Competent Ministers shall obtain the opinions of the Evaluation Commission on the specific matters specified in Art. 27 (2) of the JAXA Law. *Id.*

¹²² Radio Law, Law No. 131 of May 2, 1960, as amended by Law No. 22 of Apr. 24, 2009, available at http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Resources/laws/2003RL.pdf.

¹²³ Kayakurui torishimarihō [Gun-Powder Control Law], No. 149 of May 4, 1950, as amended by Law No. 50 of June 2, 2006, available at <http://law.e-gov.go.jp/htmldata/S25/S25HO149.html>.

¹²⁴ Köatsu gasu hoanhō [Hi-Pressured Gas Safety Law], Law No. 204 of June 7, 1951, as amended by Law No.50 of June 2, 2006, available at <http://law.e-gov.go.jp/htmldata/S26/S26HO204.html>.

¹²⁵ Denki jigyōhō [Electricity Utility Law], Law No. 170 of July 11, 1964, as amended by Law No.50 of June 2, 2006, available at <http://law.e-gov.go.jp/htmldata/S39/S39HO170.html>.

¹²⁶ See, e.g., Dokuritsugyōseihojin uchūkōkūkenkyūkai hatsukikōhō shikōrei [Cabinet Order on the Implementation Rules of the Law Concerning Japan Aerospace Explora-

launch space objects pursuant to “Launch of Artificial Satellites Standards” approved by the MEXT under Article 18 (2) of the JAXA Law¹²⁷ and Article 7 of the JAXA Business Procedures under Article 28 of the General Provisions Law,¹²⁸ JAXA’s individual launches and consigned launches are conducted under the “Safety Assessment Standards for the Launching of Satellites by Launch Vehicles”¹²⁹ issued by the SAC.¹³⁰ Since 1998, NASDA/JAXA has had to enter into insurance contracts in order to prepare for third-party liability in case of launching “satellites.”¹³¹

D. Necessity of the Comprehensive Launch Licensing System

i. Appearance of the Launch Service Provider: Rocket Systems Corporation (RSC)

Among the three conditions referred to in the 1976 SAC Report¹³² that dampened the necessity for specific space activities laws, the second condition was the first to disappear with the emergence of private satellite operators that came to hold their own TT&C systems independently. Likewise, the first condition had been slowly encroached upon since the last decade of the 20th century. The first such symptom was the establishment in July 1990 of the Rocket Systems Corporation (RSC), private company, to be responsible for launch vehicle production

tion Agency], Order No. 368 of Aug. 8, 2003, amended by Order No. 214 of July 2, 2008, at art. 10, *available at* <http://law.e-gov.go.jp/htmldata/H15/H15SE368.html>.

¹²⁷ Jinkōisei uchiagekijun [Launch of Artificial Satellites Standards], JAXA Statute No. 15-37 of Oct. 1, 2003, *available at* http://www.jaxa.jp/about/disclosure/data/k_37.pdf; JAXA Law, *supra* note 32, at art.18 (2).

¹²⁸ JAXA gyōmu hōhōsho [JAXA Business Procedures], Oct. 1, 2003, at art. 7. *available at* <http://www.jaxa.jp/about/disclosure/data/gyomuhoho19.pdf>; General Provisions Law, *supra* note 32, at art. 28.

¹²⁹ SAC, Roketto niyoru jinkōiseitō no uchiage ni kakaru anzen hyōkakijun [Safety Assessment Standards for the Launching of Satellites by Launch Vehicles], Dec. 13, 2004 [hereinafter Safety Assessment Standards], *available at* http://www.mext.go.jp/b_menu/shingi/uchuu/reports/05010701/all.pdf.

¹³⁰ Launch of Artificial Satellites Standards, *supra* note 127, at art. 4.

¹³¹ JAXA Business Procedures, *supra* note 128, at art. 7(3); “Satellites” in this instrument has the same meaning as that of Article 2(3) of the JAXA Law. *See* JAXA Law, *supra* note 32, at art. 2(3).

¹³² SAC Report, *supra* note 113.

and commercial launch services for the TR-1A, H-II, and H-IIA. These were jointly manufactured by a number of private companies to supply NASDA (later JAXA).¹³³ With the participation of RSC in launch activities, the responsibilities were allocated between the two entities. NASDA was responsible for the design and the development of its launch vehicles, while RSC was responsible for the production; management and control; and quality assurance for NASDA (later JAXA) launch vehicles. In other words, the hierarchy of responsibility was newly introduced. NASDA/JAXA controls RSC, and RSC controls various launch vehicles manufacturers.¹³⁴

An example of the allocation of responsibility is provided in the February 2005 launch plan of *MTSAT-1R (Himawari-6)* by the H-IIA 7.¹³⁵ MLIT consigned a launch of its *MTSAT-1R* (made by Space Systems/Loral (SS/L))¹³⁶ into GTO to RSC, and then, RSC consigned a launch of H-IIA 7 to JAXA. RSC is responsible for integration of the rocket; interface of the satellite and faring; and obtaining ignition and re-ignition data. JAXA is responsible for countdown safety assurance; technical assistance with the integration of the rocket until 5 days before launch; launch range maintenance 4 days prior to launch; and obtaining flight data.¹³⁷

¹³³ NASDA/JAXA continued, and JAXA continues to hold, final responsibility for the quality control and safety assessment of such rockets. See, e.g. SAC, *Daisankai tokubetsu kaigō gijōroku [Minutes of the Third Special Committee]* (Apr.12, 2004) available at http://www.mext.go.jp/b_menu/shingi/uchuu/gijōroku/tokubetsu3.htm.

¹³⁴ MHI manufactured first and second stages and engaged in the integration of H-IIA, while, e.g., Kawasaki Heavy Industries, Ltd. made faring parts and IHI Aerospace, solid rocket boosters. See generally *Rocket Systems Corporation*, http://h2a.mhi.co.jp/en/RSC/index_e.html (last visited Nov.22, 2009).

¹³⁵ JAXA, *Heisei jūrokunendo tōki roketto uchiage keikakusho [Rocket Launch Plan in the Winter Season of 2005]*, (February, 2005) available at http://www.jaxa.jp/press/2005/02/20050202_sac_h2af7plan_j.pdf.

¹³⁶ CC & T was to be conducted by SS/L. *Id.* at 9.

¹³⁷ *Id.* at 4; Launch of Artificial Satellites Standards, *supra* note 127, at 2.

ii. Amendment of NASDA Law

After RSC obtained the first commercial launch service contracts from two U.S. satellite manufacturers in 1996,¹³⁸ it was necessary to allocate liability between NASDA and RSC to fulfill accountability to the taxpayers. Needless to say, Japan is absolutely liable to pay compensation for damage caused to foreign States and its nationals under the Outer Space Treaty and the Liability Convention. What had to be defined through domestic regulations included: who should pay compensation for damage caused by a space object to the Japanese government or its national; allocation of liability among governmental agencies and non-governmental entities such as RSC; and conditions for obtaining a launch license, including financial requirements.

Instead of enacting a new law, it was addressed in 1998 by adding two new Articles to the NASDA Law concerning third-party liability and insurance requirement.¹³⁹ These two Articles were later incorporated in the JAXA Law.¹⁴⁰ Without these provisions, Art.1 of the Governmental Tort Liability Law¹⁴¹ and the Civil Code of Japan¹⁴² would apply to an accident involving a Japanese victim. However, the newly-introduced obligations for NASDA/JAXA to purchase insurance assures appropriate compensation will be promptly paid to victims without a court trial. Additionally, the amended NASDA Law provides that the victim does not have to prove the fault by NASDA or RSC. This is different from the case where a victim employs Art. 709 *et seq.* of the Civil Code of Japan or Art. 1 of the Governmental Tort Li-

¹³⁸ Commercial Launch contracts with Hughes Space & Communications Inc. (HSCI) and Space Systems/Loral were adopted in November 1996. Because of the delay of the H-IIA development, the launch contract with HSCI was subsequently cancelled in May 2000. See Rocket System Corporation, *Shögyöeisei uchiage no genjö to kadai* [Current Status and Challenges for the Commercial Satellite Launching], (Dec.10, 2001), available at <http://www8.cao.go.jp/cstp/tyousakai/cosmo/haihu02/siryou2-1.pdf>.

¹³⁹ NASDA Law, *supra* note 35, at arts. 24-2 & 24-3.

¹⁴⁰ JAXA Law, *supra* note 32, at arts. 21 & 22.

¹⁴¹ Kokka baishöhö [Governmental Tort Liability Law], Law No. 125 of Oct. 22, 1957, at arts. 1 & 2, available at <http://www.houko.com/00/01/S22/125.HTM>.

¹⁴² Minpö [Civil Code], Law No. 89 of Apr. 27, 1896 *as amended*, at Book 3, Ch. 5 (art.709 *et seq.*), available at <http://www.japaneselawtranslation.go.jp/law/detail/?ft=1&re=01&dn=1&x=0&y=0&co=01&ky=civil+code&page=43>.

ability Law.¹⁴³ Because the victim-oriented liability system is one of the most important factors in the current Space Activities Acts worldwide, the NASDA Law (later JAXA Law) is sometimes cited as Japan's national space legislation.¹⁴⁴

iii. Birth of a Private Launching Company that Terminated the Legitimacy of the Current Launch Authorization System

In May 2002, CSTP decided to privatize Japan's primary large-scale launch vehicle, the H-IIA rocket. The public recruitment invited by NASDA resulted in the selection of MHI as the sole contractor for H-IIA launch services. It also resulted in MHI being the prime contractor for H-IIA Launch Vehicle manufacturing and launch operations in November 2002. Accordingly, MHI was planned to replace RSC.

In February 2003, a basic agreement for the H-IIA launch services was adopted by NASDA and MHI. Following the final working group report on the privatization of H-IIA issued by MEXT in April 2003, H-IIA transfer of technology contract between NASDA and MHI was finalized in September 2003. In that contract, NASDA (currently JAXA) retains the property rights of the H-IIA technology, and MHI has the exclusive right to manufacture the H-IIA and to launch it. With the completion of the transfer of H-IIA to MHI, all RSC business was absorbed by MHI and RSC was dissolved on March 31, 2007.¹⁴⁵ MHI has had full responsibility since April 1, 2007.

H-IIA launch services would be conducted under the following agreements and contracts. First, the launch service contract would be adopted by MHI and the user of the launch service. The users could be various entities including JAXA, governmental ministries (e.g., MLIT, METI, Ministry of Environment), international organizations, and Japanese and foreign private

¹⁴³ If Article 2 of the Governmental Tort Liability Law is invoked relating to the governmental responsibility of the appropriate management/control of public establishment, non-fault liability is applied.

¹⁴⁴ One example is the U.N. Office for Outer Space Affairs (OOSA) site. See U.N. Office for Outer Space Affairs, *Japan*, http://www.unoosa.org/oosadb/browse_country.jsp?country=JPN (last visited Nov. 11, 2009).

¹⁴⁵ See, *supra* note 134.

companies. Further, MHI shall make its best efforts to furnish launch services for the purpose of delivering a satellite into orbit. Second, a launch consignment contract is to be adopted by MHI and JAXA. Third, manufacturing contracts would be made between MHI and a number of aerospace companies.

Since an H-IIA rocket must pass JAXA's final examination to launch a payload and JAXA also performs a last-minute operation at the Tanegashima Space Center (TNSC) launch facilities, which are owned by JAXA, it is considered that MHI's authorization and continuous supervision by MEXT is appropriately assured by JAXA's supervision of MHI.¹⁴⁶ M-5 rockets launched from Uchinoura Space Center also located on Tanegashima island, had not been privatized by its final launch in September 2006. In a newly introduced project of an advanced H-IIB launcher, JAXA will focus on the development of the rocket, while MHI, fully private company, will be responsible for its manufacture.¹⁴⁷

iv. Third-Party Liability and Obligatory Insurance

The JAXA Law requires obligatory insurance for launching satellites and addresses conditions of third-party liability.¹⁴⁸ These provisions were originally added by a 1998 amendment to the NASDA Law.¹⁴⁹

Art. 21 and Art. 22 of the JAXA Law provide:

Article 21 (Conclusion of Insurance Contracts relating to Launch of Satellites)

¹⁴⁶ As already explained in Section IV.C. 2. of this article, the launching of HII-A of MHI is subject to JAXA's examination based on the Safety Assessment Standards issued by the SAC in accordance with the Launch of Satellites Standards approved by the MEXT under the JAXA Law and the General Provisions Law. See Launch of Artificial Satellites Standards, *supra* note 127; JAXA Business Procedures, *supra* note 128; SAC, Safety Assessment Standards, *supra* note 129; JAXA Law, *supra* note 32, at art.18 (2); General Provisions Law, *supra* note 32, at art. 28 (1).

¹⁴⁷ MHI would also be heavily involved with the H-IIB project from the design and development phase. Koki Nimura et al., H-IIB Roketto no kaihatsujökyö [The Development Status of H-IIB Launch Vehicle], 45:4 MITSUBISHIHO 17, 17-20 (2008) available at <http://www.mhi.co.jp/technology/review/pdf/454/454017.pdf>.

¹⁴⁸ JAXA Law, *supra* note 32, at arts. 21 & 22.

¹⁴⁹ NASDA Law, *supra* note 35, at arts. 24-2 & 24-3. The NASDA Law was repealed when the JAXA Law was promulgated.

1 The Agency shall not launch any satellites without entering into an insurance contract by which it can secure the amounts necessary to compensate for damage caused to others as a result of the launch of the Satellites.

2 The amounts to be secured by the insurance contracts set forth in the preceding Paragraph shall be defined by the competent Ministers, taking into account the amount that the insurers are able to underwrite and other relevant matters, so that those amount may be appropriate from the viewpoint of protection of the victims.

3 In the event that the launch of Satellites is to be performed by the Agency as a result of the consignment (hereinafter in the immediately following Article referred to as the "Consigned Launch"), the insurance contract set forth in Paragraph 1 hereof may, notwithstanding the provision of said Paragraph, be entered into by a person or entity which has consigned the launch of such Satellites (hereinafter in the immediately following Article referred to as the "Consignor") for and on behalf of the Agency.

Article 22 (Special Arrangements Relating to Consigned Launch)

1 In the event that the Agency enters into an agreement with a Consignor with respect to a Consigned Launch, the Agency may, upon obtaining authorizations of the competent Ministers, enter into the following special arrangements with respect to its liability for compensation for damage caused by the Consigned Launch to any persons or entities other than those related to the Consigned Launch:

(1) If the Agency is held liable for compensation for damage caused by the Consigned Launch to any persons or entities other than those related to the Consigned Launch, and the parties related to the Consigned Launch are also liable for compensation for such damage, the Agency shall assume the entire liabilities of those parties related to the Consigned Launch for compensation for the damage; and

(2) In the case of the preceding Item, if such damage is caused by a willful misconduct of any of the parties related to the Consigned Launch, the Agency shall have the right of claiming compensation from such parties for the expense already paid by the Agency for such damage.

2 For the purpose of the preceding Paragraph, the “parties related to the Consigned Launch” mean the Consignor and any person or entity designated by the Agency and the Consignor in the said special arrangements as the persons of entities which are related to the Consigned Launch.

3 When the Agency enters into the special arrangements set forth in Paragraph 1 hereof, notwithstanding the provisions of Paragraphs 1 and 3 of the immediately preceding Article, the insurance contracts set forth Paragraph 1 of that Article shall be entered into by the Consignor for and on behalf of the Agency.¹⁵⁰

Under Arts. 21 and 22 of JAXA Law, no launch by JAXA or consigned for JAXA is allowed without the appropriate amounts of insurance.¹⁵¹ This defined by the competent ministers defined ¥20 billion¹⁵² for H-IIA and ¥5 billion¹⁵³ for the M-5.¹⁵⁴ The consignor, or MHI, may purchase insurance on behalf of JAXA.¹⁵⁵ JAXA may assume the entire third-party liabilities of the parties related to the consigned launch if JAXA is held liable for compensation and if the competent ministers, or MEXT and MIC, grant authorization.¹⁵⁶ When such special arrangements relating to consigned launch is approved, a consignor, MHI,

¹⁵⁰ JAXA Law, *supra* note 32, at arts. 21 & 22.

¹⁵¹ *Id.* at art. 21(1); Notification by the MEXT and MIC. Cabinet Office, Roketto wo uchiagerusaino kokusaihōjō no seihi no sekinin oyobi taiōsochinit suite [Governmental Responsibility under the International Law and Measures to be Taken by the Government Concerning the Launch of a Space Vehicle] (Apr. 18, 2002), *available at* <http://www8.cao.go.jp/cstp/tyousakai/cosmo/haihu23/siryō23-2-4.pdf>.

¹⁵² About 200 million U.S. dollars calculated at \$1 approximately ¥100. That amount was decided when Japan acceded to three of the UN Treaties on Outer Space in 1983 and has been maintained to date based on the Memorandum jointly issued by the Director of the R & D Bureau of the STA and the President of NASDA. Although it was not obligatory based on NASDA Law to enter into an insurance contract for third-party liability until 1988, NASDA, in principle, purchased insurance up to ¥20 billion based on that decision. Uchūbuttai niyori hikiokosareru songai nitsuiteno kokusaitekisekinin ni kansuru jōyaku eno kanyū nitomonau sochi nitsuiteno oboegaki [Memorandum on the Measures for the Accession to the Convention on International Liability for Damage Caused by Space Objects], Notification No.324 of Aug. 5, 1983 (on file with author).

¹⁵³ About 50 million U.S. dollars calculated as \$1 approximately ¥100.

¹⁵⁴ JAXA Law, *supra* note 32, at art. 21(2).

¹⁵⁵ *Id.* at art. 21 (3).

¹⁵⁶ *Id.* at art. 22 (1) and (2).

would have to enter into insurance contracts on behalf of JAXA.¹⁵⁷

The significance of the special arrangements is that JAXA can cover the difference between the amount of the damage incurred and the amount of the insurance purchased. As long as H-IIA launches experimental or application satellites owned by the Government, such assistance can be rationalized. However, in August 2008, the HII-A launched a commercial satellite owned by a private company, and a contract to launch a Korean multi-purpose satellite was made in January 2009. Therefore, under the current scheme, these problems exist: first, buying insurance for non-JAXA related rockets is not legally required; second, in case of an accident financial assistance is to be given only to MHI; and third, various benefits are provided to MHI concerning launch operations. For example, the recovery of the post-launching facility costs using JAXA's cost.

The GALEX may be given similar assistance as long as the launch is conducted at TNSC because JAXA is involved with the GX rocket development.¹⁵⁸ Other rockets being privately developed will be outside the application of the JAXA Law and a variety of JAXA administrative guidance. One example is a Cascaded Multistage Impinging-jet (CAMUI) rocket developed by the Hokkaido Aerospace Science and Technology Incubation Center (HASTIC) established in 2002 and obtained a non-profit organization status in January 2003. HASTIC announced an ambitious plan to construct a small satellite and a CAMUI hybrid rocket to be air-launched from its own spaceport in Hokkaido. It also plans to begin a commercial suborbital flight.¹⁵⁹ If this happens, then a comprehensive licensing system for commercial space launch will be indispensable.

This is not only fair situation to the private launching companies other than MHI. Nor can it be explained to the taxpayers why MEXT/JAXA assist the cost of the launching of only MHI.

¹⁵⁷ *Id.* at art.22 (3).

¹⁵⁸ After the completion of this article, on Aug. 25, the GX rocket program was substantially cancelled. *See, supra* note 17.

¹⁵⁹ *See generally*, Hokkaido Aerospace Science and Technology Incubation Center, http://www.hastic.jp/index_e.htm (last visited Nov. 20, 2009).

Therefore, domestic space activities law is now needed in Japan that is applicable to all launch providers, including obligatory insurance or a guarantee of financial responsibility, and government indemnification conditions. The Space Activities Act is currently being drafted.¹⁶⁰

V. CURRENT STATUS OF JAPAN'S NATIONAL SPACE LAWS:
SATELLITE OPERATION AND RESIDUAL ISSUES

A. *Authorization and Licensing Systems of Private
Satellite Telecommunications Operators*

In Japan, the Radio Law¹⁶¹ is said to be the single most important domestic law to authorize and continuously supervise the space activities by the non-governmental entities. This is because MIC can control the activities of a private entity who wants to operate a telecommunications or broadcasting satellite through the Radio Law licensing processes.

Any person who wishes to establish "a radio station as an artificial satellite station" for telecommunications shall submit an application to MIC together with a document describing the satellite's purpose; the reason for establishing the radio station; the person(s) with whom the radio communication will be conducted; the subject(s) of the communication; the location of radio equipment, orbit, or position; the desired frequency range and antenna power; and expected commencement date of operation.¹⁶² Likewise, such person shall provide the scheduled launch time; term of normal operation; and the position that enables its station to fulfill its mission.¹⁶³

In addition to the particulars to be filed in telecommunications services license application, any person who wishes to obtain a license for a radio station as an artificial satellite station for broadcast purposes shall also submit an application to MIC containing information about broadcast subjects, service area,

¹⁶⁰ See, Decision by the Experts Committee on Oct. 1, 2008, *supra* note 19; and *Interim Reports on the Prospective Space Activities Act*, *supra* note 108.

¹⁶¹ Radio Law, *supra* note 122.

¹⁶² *Id.* at arts.4 & 6(1).

¹⁶³ *Id.* at art. 6(6).

business plan, etc.¹⁶⁴ Detailed particulars to be filled out in the form are found in the tables annexed to the Licensing Procedural Rules Relating to Radio Stations.¹⁶⁵

Prior to the introduction of freedom of service trade in telecommunications, no radio station license had ever been granted to a person not holding Japanese nationality; a foreign government or its representative; or a foreign juridical person or organization. Additionally, a license had never been granted to a juridical person or organization represented by any person referred to in the preceding three cases; which had one third or more officers consisting of such persons; or in which one third or more of the entity's aggregate voting rights were held by such persons.¹⁶⁶ The only exception for a foreign government to obtain a license was when the radio communication service was used exclusively between specific fixed points through a foreign satellite.¹⁶⁷

The Fourth Protocol to the General Agreement on Trade in Services, or Basic Telecommunications Freedom Agreement¹⁶⁸ was made at the World Trade Organization (WTO) and entered into force on 1 January 1998. It changed the situation and enabled foreign nationals to establish a radio station based on reciprocity. To accept the Fourth Protocol, Japan amended the Radio Law in 1997, and it became effective on 5 February 1998, which was the day the Basic Telecommunications Freedom Agreement was entered into force for Japan.¹⁶⁹ Disqualification clauses for a person not holding Japanese nationality shall not

¹⁶⁴ *Id.* at art. 6(2).

¹⁶⁵ Musenkyoku menkyotetsuzuki kisoku (denpakanri iinkai kisoku) [Licensing Procedural Rules Relating to Radio Stations by the Rule of the Radio Administrative Committee], Rule No.15 of Nov. 30, 1960, as amended by MIC Ordinance No.21 of Mar. 9, 2007, at art. 2(9) ("license unit"), and art. 4(2) ("attached documents, Table 2-5 & Table 2-6"), available at <http://law.e-gov.go.jp/htmldata/S25/S25F30901000015.html>.

¹⁶⁶ Radio Law, *supra* note 122, at art. 5(1).

¹⁶⁷ YOSHIKI IMAIZUMI, *DEMPAHÖ YÖSETSU* [RADIO LAW: A COMMENTARY] 48 (Telecommunication Promotion Organization, 5th ed., 2006).

¹⁶⁸ Fourth Protocol to the General Agreement on Trade in Services, Apr. 30, 1996, WTO/S/L/20 (96-1750), available at http://www.wto.org/english/tratop_e/serv_e/4prote_e.htm

¹⁶⁹ Heisei kyūnenno Kaisei denpahō [Radio Law as amended in 1997], Law No. 100 of June 20, 1997, available at http://hourei.hounavi.jp/seitei/hou_suuji/H09/H09HO100.php.

apply to the radio stations established for the purpose of conducting telecommunications service.¹⁷⁰ Neither will they apply to radio stations established on land for the purpose of controlling the position and attitude of an artificial satellite equipped with radio station equipment for the purpose of conducting telecommunications service.¹⁷¹

The disqualifications for foreign nationals and foreign governments have been maintained for broadcasting stations, except when such artificial satellite stations would broadcast their programming directly in accordance with entrustment by other persons.¹⁷² “Entrusted domestic and overseas broadcasting” started in June, 1994.¹⁷³

B. Security Trade Control

i. The Foreign Exchange and Foreign Trade Act (FEFTA) as a Comprehensive Tool

National security concerns in launch services have been addressed through security export control and inward direct investment regulation. The unique policy of “Three Principles on Arms Export,”¹⁷⁴ which was first stated by Prime Minister Sato at the House of Representatives in 1967 and later declared as a governmental unified view in 1976, is also relevant. The Japanese export control system is comprehensively managed by METI through, mainly, the Foreign Exchange and Foreign

¹⁷⁰ *Id.* at art. 5 (2)(vii).

¹⁷¹ *Id.* at art. 5(2)(viii).

¹⁷² *Id.* at art. 5(4).

¹⁷³ Hösöhö [Broadcast Law], Law No.132 of May 2, 1950, *as amended* 1994, at art. 2 (ii)-2-3 (last amended by Law No.22 of Apr. 24, 2009), *available at* <http://law.e-gov.go.jp/htmldata/S25/S25HO132.html>. Art. 2(ii)-2-3 provides that “[e]ntrusted domestic and overseas broadcasting” means broadcasting entrusted by others and intended to be received domestically and overseas. Such entrusted programs are broadcast by an artificial satellite stations without any editing.” *Id.*

¹⁷⁴ Prime Minister Eisaku Sato, Statement at the Audit Committee of the House of Representatives, Bukiyushutsu sangensoku [Three Principles on Arms Export] (Apr. 21, 1967)[hereinafter Prime Minister Sato, Statement], *available at* <http://www.mofa.go.jp/mofaj/gaiko/arms/mine/sanngen.html>. Concerning the contents and the development of the “Three Principles on Arms Export”, *See also infra* note 188.

Trade Act (FEFTA),¹⁷⁵ which is, in general, positively evaluated in terms of the simple licensing procedures and easier information sharing it provides in making administrative rules, licensing, inspection, and law enforcement.¹⁷⁶ Exchange of information is closely conducted between METI and MOF relating to custom matters as well as METI and Ministry of Foreign Affairs (MOFA) with respect to matters on international export control regimes. Since Japan is a member of all the export control regimes,¹⁷⁷ FEFTA as well as related rules and regulations are provided for in accordance with the export control lists. List control systems in the FEFTA were strengthened through the 1990s and starting on 1 April 2002, Japan adopted the complete "Catch-All" system¹⁷⁸ which is basically in line with the North American and European practices.

FEFTA provides that any person who intends to export specific kinds of goods to specified regions¹⁷⁹ or a resident who intends to conduct a technology transaction pertaining to the design, manufacture, or use of specific kinds of goods with a non-

¹⁷⁵ Gaikokukawase oyobi gaikokubōekihō [Foreign Exchange and Foreign Trade Act], Act No. of 228 of Dec. 1, 1949 *as amended* [hereinafter FEFTA] *available at* <http://www.meti.go.jp/policy/ampo/kanri/top-page/top/Taro13-foreign-exchange-and-for.pdf> (originally, in 1949, FEFTA was named as Gaikokukawase oyobi gaikokubōeki ka'nrihō [Foreign Exchange and Foreign Trade Control Act]).

¹⁷⁶ The Trade and Economic Cooperation Bureau in METI is responsible for all the export control matters. Under that Bureau, Security Export Control Policy Division is involved with research, rule-making and review of detailed licensing rules, while the Security Export Licensing Division issues the license and approval. Security Export Inspection Office would engage in law enforcement and capacity building.

¹⁷⁷ Export Control Regimes mean Zanggar Committee, Nuclear Suppliers Group, Missile Technology Control Regime, Australia Group, and Wassenaar Arrangement. For all 5 regimes, Japan became an original member. Japan was also a member of COCOM (1949-1994) since 1952.

¹⁷⁸ Even if a certain item is not included in the control lists which requires filing for an export license, an exporter shall, nevertheless need a license when METI requires it (informed condition) or an exporter has reasonable grounds to have doubts about the trade in terms of the proliferation of the weapons of mass destruction (objective condition, that is similar in nature to "know requirements" in the U.S. system.). States belonging to all the export control regimes are not the subjects for "Catch-All" systems. Those 26 states are cited in the Export Trade Control Order. *See*, Yushutsubōeki ka'nrirei [Export Trade Control Order], Cabinet Order No. 378 of Dec. 1, 1949 *as amended*, at Attachment 4-2 (relating to art. 4), *available at* <http://www.cas.go.jp/jp/seisaku/hourei/data/ETCO.pdf>.

¹⁷⁹ FEFTA, *supra* note 175, at art. 48.

resident¹⁸⁰ shall obtain permission from the METI, when such goods or technology is specified by the Export Trade Control Order¹⁸¹ as being considered to obstruct the maintenance of international peace and security. The METI may impose on a person who intends to export specific kinds of goods and technology to a region other than the specified regions the obligation to obtain permission for the strengthened enforcement of the FEFTA.¹⁸² Specific kinds of goods are specified in the Appended Table 1 of the Export Trade Control Order, among which goods pertaining to launch services are enumerated¹⁸³ in Category 4 and which is updated regularly pursuant to Missile Technology Control Regime (MTCR) control list. There are twenty-seven subcategorized items specified in Category 4 of the Appended Table 1 of the Export Trade Control Order which appropriately contain MTCR category I list (Item 1 - Item 2) and category II list (Item 3 - Item 20).¹⁸⁴ Examples would be rockets; equipment or tools for the production thereof; test equipment or components thereof; individual rocket stages; rocket propulsion equipment; navigation equipment; jet mills; special powders; and launch pads.¹⁸⁵

ii. Three Principles on Arms Export

In addition to FEFTA and related rules, the governmental unified view of “Three Principles on Arms Export” constitutes the restriction for arms export. Under FEFTA, permission-based arms export is possible, and such “arms” are specified in category 1 and category 15 (relating to the “sensitive” lists of Wassenaar Arrangement¹⁸⁶) of the Export Trade Control Order.¹⁸⁷

¹⁸⁰ *Id.* at art. 25.

¹⁸¹ Export Trade Control Order, *supra* note 178.

¹⁸² FEFTA, *supra* note 175, at arts. 48 (2) & 28(2).

¹⁸³ Export Trade Control Order, *supra* note 178, at arts. 1 & 4.

¹⁸⁴ Missile Technology Control Regime (M.T.C.R.) Equipment, Software and Technology Annex, MTCR/TEM/2008/Annex/001 (Nov. 5, 2008), available at <http://www.mtc.info/english/MTCRTechnicalAnnexNov2008.pdf>.

¹⁸⁵ Export Trade Control Order, *supra* note 178, at Category 4 of Appended Table 1.

¹⁸⁶ Wassenaar Arrangement on Export Controls for Conventional Arms and Dual Use Goods and Technologies, <http://www.wassenaar.org/> <http://www.wassenaar.org/controllists/index.html> (last visited Nov. 11, 2009).

¹⁸⁷ Export Trade Control Order, *supra* note 178.

However, the “Three Principles on Arms Export” policy virtually prohibited Japan from exporting any arms to any region in the world.

Originally declared by the then Prime Minister in 1967, the “Three Principles on Arms Export” was strengthened in 1976 to extend the region of the export ban of arms to any place in the world and to extend the object of the ban from arms only to arms plus facilities and equipments related to arms production.¹⁸⁸ The complete arms ban, however, has been eased, first as the exceptional measures to the U.S. relating to the export of arms technology in 1983. With the change of security ramifications, several minor exceptions have been approved by the government.¹⁸⁹ In December 2003, Japan decided to jointly develop a Ballistic Missile Defense (BMD) with the U.S. A year later, in December 2004, the Chief Cabinet Secretary released a statement in relation to the “Three Principles on Arms Export.” He stated that, “if Japan decides that it will engage in joint development and production of ballistic missile defense systems with the U.S., the Three Principles will not be applied, under the condition that strict control is maintained, because such systems and related activities will contribute to the effective operation of the Japan-U.S. Security Arrangements and are conducive to the security of Japan.”¹⁹⁰ In December 2005, Japan de-

¹⁸⁸ Prime Minister Sato declared that arms export should be refrained in case (i) when the designated destination is the communist countries, (ii) when the designated destination is a country which is the object of arms embargo by the U.N. resolution, and (iii) when the designated destination is under the armed conflicts or seems imminent to engage in armed conflicts. See Prime Minister Sato, Statement, April 21, 1967 available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=8410&SAVED_RID=6&PAGE=0&POS=0&TOTAL=0&SRV_ID=3&DOC_ID=8350&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=10308. Prime Minister Takeo Miki released the strengthened version of the principles in the form of a governmental unified view. House of Representatives, 18 Yosan iinnkaigiroku [Minutes of the Standing Budget Committee] 17 (Feb.27, 1976) available at http://kokkai.ndl.go.jp/cgi-bin/KENSAKU/swk_dispdoc.cgi?SESSION=20374&SAVED_RID=1&PAGE=0&POS=0&TOTAL=0&SRV_ID=4&DOC_ID=10290&DPAGE=1&DTOTAL=1&DPOS=1&SORT_DIR=1&SORT_TYPE=0&MODE=1&DMY=20468; See also, *supra* note 174.

¹⁸⁹ Such alleviation was approved of to strengthen the ties with the U.S., Japan's only ally (1996), to participate in the U.N. peace-keeping activities, to implement the international convention (2000) and U.N. Security Council (SC) Resolutions (including SC Res. 1368 (2001) and SC Res.1483 (2003)).

¹⁹⁰ See, e.g., MOFA, DIPLOMATIC BLUEBOOK 2006 133 (2006).

cided to begin the Japan-U.S. cooperative development of advanced SM-3 missile for BMD, which would be used for mid-course interception, and may be regarded as one type of military use of outer space, which could be problematic in Japan at that time. That concern was addressed by the Basic Space Law.

C. Investment Control

i. Investment Control on National Security Concerns

Cabinet Order Concerning Inward Direct Investments, etc., promulgated in 1980 pursuant to Art. 27 of the FEFTA,¹⁹¹ prescribes that if such an investment is regarded as having the possibility of impairing national security, a foreign investor shall notify the MOF and the Minister having jurisdiction over the business in advance regarding the business purpose, amount, time of making the investment, etc., and other matters specified by the Cabinet Order.¹⁹² Concrete objects which might compromise national security if invested in without examination by the Ministers concerned are specified in the appended table 2 (Re: Art. 5) of Ministerial Ordinance Concerning Inward Direct Investments, etc.¹⁹³ With respect to space-related business, space technology pertaining to parts, equipment, and any goods related to rockets (other than sounding rockets), space flying objects, propulsion, etc. fall under the category for prior notification.¹⁹⁴

Inward direct investment could be restricted when the type of business to be invested are specified in the Cabinet Order pursuant to Art. 27 of the FEFTA. Adding to national security, maintenance of public order, and protection of public safety are the reasons for the governmental examination and a possible

¹⁹¹ Tainai chokusetsutōshitō ni kansuru seirei [Cabinet Order Concerning Inward Direct Investments] Cabinet Order No. 261 of Oct. 11, 1980, amended as Cabinet Order No. 42 of Mar. 17, 2006 available at <http://law.e-gov.go.jp/htmldata/S55/S55SE261.html>.

¹⁹² *Id.* at art. 3(2)-(5).

¹⁹³ Tainai chokusetsutōshitō ni kansuru meirei [Ministerial Ordinance Concerning Inward Direct Investments], Ministerial Ordinance No.1 of Nov. 20, 1980, amended as Ministerial Ordinance No. 2 of Apr. 28, 2006, available at http://www.japaneselawtranslation.go.jp/law/detail_main?re=01&vm=04&id=1860.

¹⁹⁴ *Id.* at item 5 of the appended table 2.

rejection based on prior notification.¹⁹⁵ The category of restrictions based on public order include telecommunications and broadcasting, electricity, gas, energy provision, railroad, and passenger transportation. On each category, individual laws specify the limit of foreign direct investment. Limitations in the telecommunication and broadcasting are imposed by the different national laws. That is explained in the next section.

ii. Liberalization of Telecommunications and National Law

The Telecommunications Business Law (TBL),¹⁹⁶ Radio Law, and other related laws and regulations were amended in order to abide by the Basic Telecommunications Freedom Agreement in 1997, and any restriction on foreign investment was lifted in regard to telecommunication business except Nippon Telegraph and Telephone Corporation (NTT) and KDD in February 1998.¹⁹⁷ For the NTT and KDD, the ceiling for foreign investment was one-fifth of the aggregate voting rights. In June 1998, the restriction of foreign investment on KDD was lifted.¹⁹⁸

Following the amendment of the TBL and NTT Act in June 2001 (entered into force in November 2001), restriction of the foreign investment with respect to the NTT was loosened from one-fifth to one-third. The NTT Act provides that the government shall always hold one-third or more of the total number of the issued shares of the NTT.¹⁹⁹ The aggregate of the ratios of

¹⁹⁵ FEFTA, *supra* note 175, at art. 27(3)(i); Export Trade Control Order, *supra* note 178, at art. 3(2)(i).

¹⁹⁶ Denkitsūshin jigyōhō [Telecommunications Business Law] Law No. 86 of Dec. 25, 1984 *as amended* [hereinafter TBL], *available at* http://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/Resources/laws/2001TBL.pdf.

¹⁹⁷ Amendment of both laws were promulgated in June 1997, but entered into force in February, 1998.

¹⁹⁸ Such lift was accompanied by the annulment of the KDD Law. Kokusai densen-denwa kabushikigaishahō (KDDhō) haishi [Annulment of the KDD Law](May 20, 1998), *available at* <http://hourei.hounavi.jp/seitei/hou/H10/H10HO058.php>.

¹⁹⁹ Act on Nippon Telegraph and Telephone Corporation, etc., Act No. 85 of Dec. 25, 1984, at art. 4(1), *as amended* by Act No.87 of July 26, 2005 [hereinafter NTT Act], *available at* <http://www.japaneselawtranslation.go.jp/law/detail/?re=02&ky=%E8%87%AA%E5%B7%B1%E6%96%B0%E6%A0%AA%E4%BA%88%E7%B4%84%E6%A8%A9%E4%BB%98%E7%A4%BE%E5%82%B5&page=2&la=01>.

the voting rights directly or indirectly held by non-Japanese nationals shall not exceed one-third.²⁰⁰

In 1985, the monopoly by NTT and KDD was terminated and competition was introduced for both the domestic and international telecommunications business. Since then, the principle of fair competition has steadily advanced through a series of the TBL amendments. Then, in 2003, the TBL and NTT Act were dramatically amended to the extent that almost half of the all provisions of the TBL, or about 100 articles, were changed.²⁰¹ The distinction between service providers and the difference of their treatment was abolished. Before the amendment, a category I provider had been one with the facility and equipments of telecommunication services and category II was a provider without hardware parts of telecommunications services. Participation conditions for all telecommunications providers were considerably eased, thereby completing the principle of competition. It was no longer necessary to divide providers into categories because of the decreasing cost of telecommunications service hardware. This was caused by the rapid advancement of internet technologies including IP networks, and active foreign participation in international telecommunications services in Japan.

The 2003 amendment,²⁰² in general, abolished the prior licensing methods, and introduced a prior notification and registration system. Rate regulation was, in principle, abolished except for the basic telecommunications services nationwide which are indispensable for people's daily lives.²⁰³ Further, the prior notification requirement was abolished in respect of interconnections except for category I providers who have constructed designated telecommunications facilities and category II providers who provide designated telecommunications facilities.²⁰⁴ Instead, stronger settlement of disputes procedures have been

²⁰⁰ *Id.* at art. 6 (1)-(4).

²⁰¹ TBL, *supra* note 196. The TBL was amended as Law No. 50 of June 2, 2006. NTT Act, *supra* note 199.

²⁰² TBL, *supra* note 196, as amended in 2003, available at <http://hourei.hounavi.jp/seitei/enkaku/H15/H15HO125.php>.

²⁰³ *Id.* at art. 7.

²⁰⁴ *Id.* at arts. 33 & 34.

newly introduced²⁰⁵ and MIC is granted the right of issuing an order to improve operations methods of business activities that fall under the satisfactory conditions.²⁰⁶

D. Information Control

The Constitution of Japan provides that “. . . speech, press and all other forms of expression are guaranteed. No censorship shall be maintained, nor shall the secrecy of any means of communication be violated.”²⁰⁷ The TBL prohibits censorship²⁰⁸ and protects secrecy of communications from any person engaged in telecommunications business, even after this person's retirement from office.²⁰⁹

The purpose of the Broadcast Law is to regulate broadcasting for the public welfare, and to strive for the sound development thereof in accordance with the principles including the assurance of the freedom of expression through broadcasting to the people.²¹⁰ Thus, broadcast programs shall never be interfered with or regulated by any person, except in the case where it is done through invested powers provided by law.²¹¹ However, because broadcasting business inevitably involves occupation by specific persons of valuable limited resources, that is radio frequencies, and because broadcasting is influential to the life of the people by being widely disseminated, a certain restriction on the freedom of the programs has to be imposed in terms of public security, good morals, and manners. Likewise, political impartiality and the prohibition of the distorting facts in broadcast news shall be observed.²¹² Clear, evident, and repeated violation of the abovementioned requirements could, lead to cease to the operation of the radio station for a specific period in accordance with Art. 76 of the Radio Law, while it has been applied in such

²⁰⁵ *Id.* at art. 160, *et seq.*

²⁰⁶ *Id.* at art. 29.

²⁰⁷ Constitution of Japan, *supra* note 90, at art. 21.

²⁰⁸ TBL, *supra* note 196, at art. 3.

²⁰⁹ *Id.* at art. 4 (1) (2).

²¹⁰ Broadcast Law, *supra* note 173, at art. 1.

²¹¹ *Id.* at art. 3.

²¹² *Id.* at art. 3-2 (1).

manner as the most restricted way to respect the freedom of speech and expression.²¹³

CONCLUSION

The next few years will be a milestone for Japan's national space legislation. JAXA's supervising ministry will be decided and the Space Activities Act of Japan will be made into a full-fledged law by September 2010. The law's content will involve the above-mentioned licensing and liability regime as well as other important issues for the privatization and commercialization of Japan's space activities which, until now, have emphasized research and development. With respect to the Basic Plan for Space Policy, it is yet to be seen how six targets of the Plan will be implemented by way of nine systems and programs. How that plan will benefit human security inside and outside of Japan and promote Japan's space commercialization will also be seen in the future.

Finally, the change of Japan's long-standing interpretation of "peaceful uses" will draw attention. While the restriction in security use of space is still greater than any other spacefaring nation, and as far as the Basic Plan for Space Policy is concerned, the program for the security use of space is considerably modest.²¹⁴ However, to dispel concerns from Pacific Rim countries, the application of Article 2 of the Basic Space Law will have to be reported for the sake of transparency and confidence building in the region.

²¹³ KAORU KANAZAWA, HÖSÖHÖ CHIKUJÖOKAISETSU[COMMENTARY ON PROVISIONS OF THE BROADCAST LAW] 57 (Denkitsüshin Shinkökai, April 1, 2006).

²¹⁴ See, Basic Plan for Space Policy, *supra* note 51, at Ch. III 1 (1) E. & Ch.III 2 (2).

Appendix

Basic Plan for Space Policy: Wisdom of Japan Moves Space (summary)²¹⁵

Released: June 2, 2009

Approved by Strategic Headquarters for
Space Development

INTRODUCTION

Japan's space development started in 1955 when a sounding rocket was first launched. While Japan has succeeded in becoming one of the space-faring nations today, the challenges Japan faces also become clear when the three points specified below are considered: 1) Japan has never had a comprehensive national space strategy; 2) The scope of its space application activities has been limited in comparison with other spacefaring nations; and 3) Japan's space industry is lacking in international competitiveness.

Three of the more distinguished characteristics of Japan's space development and use led to the legislation of the Basic Space Law, which aims at shifting Japan's space from "primarily R & D to user-oriented space applications." In other words, Basic Space Law will enable a secure use of space in line with the pacifism of the Constitution of Japan, promote "space diplomacy," advance R & D as well as the competitiveness of the space industry, and make a firm commitment to preserving space and the Earth's environment comprehensively and systematically.

CHAPTER I: STATUS OF THE BASIC PLAN FOR SPACE POLICY

The Basic Plan for Space Policy (Basic Space Plan) was formulated based on Art. 24 of the Basic Space Law in order to

²¹⁵ This is a summary of the Basic Plan for Space Policy released in June 2009 written by the present author. See *Basic Plan for Space Policy*, *supra* note 51.

achieve 6 basic principles and 11 basic measures specified in the Law. For that purpose, this Plan consists of three parts: 1) basic policy to promote space development and use; 2) comprehensive and systematic measures to be implemented by the Government; and 3) concrete measures to be conducted under the Basic Space Plan. The Basic Space Plan is formulated for use during the next five years, taking note of the possible development of space activities for the next decade. Under normal circumstances, the time frame of this plan would be five years, and it will be reviewed every five years. However, necessary changes to the plan will be made in between if the necessity arises based on the results of follow-up reviews.

CHAPTER II: BASIC POLICY TO PROMOTE SPACE DEVELOPMENT AND USE

(Section 1 and Section 2(1) and (2) of Chapter II is rather briefly summarized compared with the other chapters of the Basic Space Plan in consideration of the fact that the overlapping contents are already explained in Section III of this article.)

1. Promotion of Space Development and Use with Suitable Character for Japan

The Basic Space Plan will intensively pursue the effective use of space to achieve basic principles of the Basic Space Law. Strategic Headquarters plays a pivotal role in making and implementing the “Basic Space Plan as a national strategy,” a medium-to-long term plan for space development and use.

2. Six Basic Targets in Japan’s Space Development and Use Six Basic Targets are as follows:

(1). Realization of a Safe, Secure, and Affluent Society through Space

For this target to construct a safe, secure, and affluent society using space, emphasis is placed upon, e.g., R & D and the provision of data from the application satellites which can re-

spond to societal needs in a continuous and effective manner, as well as the production of more user-friendly satellite-based data;

(2). Strengthened Security through Space

Secure use of space for the purposes of information gathering and early warning will be strengthened, in consideration of the Northeast Asian security environment;

(3). Promotion of Space Diplomacy

For the purposes of this Plan, the word "space diplomacy" has two meanings: "space-for-diplomacy" and "diplomacy-for-space." Space-for-diplomacy means the utilization of the results of space activities to help fulfill the goals of Japan's foreign policy as a source of "soft power." "Diplomacy-for-space" includes the efforts to be intensified in order to advance Japan's space capability.

1) Space-for-Diplomacy

"Space-for-Diplomacy" includes the Sentinel Asia project launched in 2006 under the Asia-Pacific Regional Space Agency Forum (APRSAF) led by Japan and GEO/GEOSS in which Japan plays a leading role. Considering that "human security" constitutes one of the important pillars of Japan's foreign policy, space-based projects for mitigating national disasters and surveying climate change have to be strengthened.

2) Diplomacy-for-Space

Measures for "diplomacy-for-space" include the use of special diplomatic ties and the public funds such as Official Development Assistance (ODA) to launch joint space projects with developing countries; to broaden international cooperation with advanced spacefaring nations; and to actively engage in rule-making for international space law at the various fora such as the UN Committee on the Peaceful Uses of Outer Space (COPUOS) and the Conference on Disarmament (CD). An Example of a short-term target in such rule-making is space debris mitigation rules, and medium-to-long term targets include property rights for natural resources on the Moon and space traffic management.

(4) Creating a Bright Future by Promoting State-of-the-Art R & D

Recognizing that state-of-the-art R & D will bring about breakthroughs in technology, improve the quality of life of the

citizenry, and to promote the aspirations of younger generations, Japan will actively involve itself in space science, especially in space astronomy and interplanetary research. *Kibo*, the Japanese module of the *International Space Station (ISS)* will be intensively used for advancing its manned space technologies and scientific experiments. The potential use of *Kibo* as an Earth Observation and Examination Station (EOES) will be taken into serious consideration. EOES is a future project in which the crew in the *Kibo* module will transmit synthesized information to the Earth about the environment, meteorology, disasters, agriculture and fisheries, and other concerns.

For the energy provision, which is one of the most serious challenges in the 21st century, special emphasis will be placed on the space-based Solar Power Satellite System (SPSS) project. The physical principles for the necessary technology are currently in the process of being verified, and a phased study will be carried out on safety standards and economic viability.

(5) Nurturing a Strategic Industry for the 21st Century

The space industry shall be encouraged to develop as it provides an important basis from which Japanese space activities can advance. However, the space industry in Japan is not only seriously lacking in international competitiveness, but has also been in some ways declining. A private survey indicates that, from 1998 to 2006, the proceeds of the space industry decreased by about 40 percent and the number of the employees in the space industry by about 30 percent. Thus, the Government must provide an effective scheme to advance the space industry as other spacefaring nations did in the past. Among such schemes, experiences show that Public-Private Partnerships (PPP) and product purchase guarantee systems seem to function well in the nurturing of the space industry.

The Japanese Government believes it is important that the space industry shall be developed into a strategic industry as the electronics and automobile industries were in the past, and effective measures will be taken to best develop it. In that regard, strengthening the technical capacity, promoting the effective development and production systems by the private sector, appropriate marketing, as well as the further development of

space transportation vehicles, are to be promoted among other necessary measures.

(6) Consideration of the Environment

Preserving and protecting the environment is a national policy of Japan. Therefore, space development and use should be carried out without compromising the Earth's environment. Likewise, further contributions by Japan are required by the international society on the issue of space debris mitigation.

CHAPTER III: GOVERNMENTAL MEASURES TO BE CONDUCTED
COMPREHENSIVELY AND SYSTEMATICALLY WITH RESPECT TO
SPACE DEVELOPMENT AND USE

This Chapter consists of two sections. The first section of this Chapter describes five satellite utilization systems (A to E) and four R & D programs (F to I) which have been selected to fulfill the six targets of the Basic Space Plan. Next, the second section of the Chapter III describes seven concrete plans of action responding to the six targets of the Plan. In this section, it is explained which of the five satellite systems and four R & D systems are corresponding to the individual action plans for the implementation of the six targets.

1. Development and Use Plan for the Nine Systems and Programs

This section prescribes five-year goal on the 9 selected systems and programs in accordance with societal needs, taking note of the 10-year goal

(1) Construction of the Utilization Systems

A. Land and Ocean Observation Satellite System to Contribute to Asia and Other Regions

Such satellite system is used for the public safety, land protection & management, the improvement of food provision (advancement of agricultural and fishery technology) and the improvement of resources and energy provision. The Land and Ocean Observation Satellite System is expected to contribute to the Asian region especially for the purposes of the public safety. The goal is to collect images of the area within 3 hours from the

occurrence of a disaster and to provide such data to the affected area and to Japanese relief personnel. Global Positioning System (GPS) will also be intensively used to detect the imminent crustal movements of the Earth.

For the next five years, the following satellites will be developed or launched. JAXA's *ALOS-2 (Daichi-2)* (on board L-band radar) and public-private *ASNARO* experimental small remote sensing satellite will be launched. In addition to the *Data Relay Technology Satellite (DRTS) (Kodama)* currently used for relaying *ALOS-1 (Daichi-1)* data, measures shall be taken to procure the next such satellite for the distribution of *ALOS-2* data. R & D shall be conducted for finding effective ocean observation modalities, especially to ensure the safety of shipping navigation, by combining various kinds of satellite data and Earth-bound collected data.

B. Earth Environment Observation & Meteorological Satellite System

The ten-year goal for this system includes public safety, the improvement of food provision, and contributions towards a low-carbon society. Clouds and water vapor in the air will be observed every ten minutes (down from the interval of every thirty minutes currently), and the resolution of the next meteorological satellite is expected to be twice as good as the current level. The improvement of spatial resolution and the data access system shall be undertaken in order to achieve a more efficient ocean fishery. To address global warming, the *Greenhouse Gases Observing Satellite (GOSAT) (Ibuki)*, which was successfully launched in January 2009, will be extensively used along with *ALOS-1*. A sensor that is twice as sensitive as the current one will be developed for the next *GOSAT*. Precipitation shall be measured twice as precisely through the international cooperative frameworks to better understand the water circulation mechanism of the Earth.

For the 5-year plan, the sensors for the *Global Change Observation Mission (GCOM)* will be improved, *GCOM-W* will be launched, and the R & D for *GCOM-C* will be conducted. The spatial resolution of the future *MTSAT-8 (Himawari-8)* and

MTSAT-9 (Himawari-9) will be twice as high as the current *MTSAT-6 (Himawari-6)* and *MTSAT-7 (Himawari-7)*.

*C. Advanced Information and Telecommunications
Satellite System*

Public safety is the primary purpose of operating such satellite systems. For the ten-year goal, the technology for an experimental mobile telecommunications satellite will be developed to provide continuous communications in case of disaster, on the basis that approximately 100 million mobile phones are currently in use in Japan. For the 5-year plan, demonstration experiments will be conducted in the Asia-Pacific regions and isolated islands in Japan for the operation of the *Wideband InterNetworking engineering test and Demonstration Satellite (WINDS) (Kizuna)* and on the continuous use of mobile communications through the *Engineering Test Satellite VIII (ETS-VIII) (Kiku No.8)*.

D. Navigation Satellite System

Car navigation is one of the most successful examples of the GPS applications. Concerning the next 10-year goal, new applications shall be invented for the improvement of the life of the citizenry and the public safety. The planned three *Quasi-Zenith Satellite (QZS)* constellation will supplement the U.S.'s GPS. Although it remains to be decided, if seven such satellites are going to become operational, a self-contained navigation system will be made possible covering the whole of East Asia and Oceania. For the next 5 years, technical and application experiments on a *QZS* will be conducted to put the first *QZS* into the operational phase. Close coordination will be made between the Basic Space Plan, "Basic Plan for the Advancement of Utilizing Geospatial Information" and "Action Plan for the Advancement of Utilizing Geospatial Information" to implement *QZS* program.

E. Satellite System for Security Purposes

Strengthening the image information gathering abilities in terms of the frequencies, resolution and near real-time data distribution shall be pursued. Also, the warning function for the areas surrounding Japan has to be strengthened as a 10-year goal. For such purposes, the promotion of R & D will be carried out including research on early warning sensors. For the 5-year plan, four Information Gathering Satellites (IGS) constellations, two optical satellites, and two radar satellites shall be put into operation so that IGS will revisit a certain point on the Earth within twenty-four hours.

(2) Promotion of R & D Programs

F. Space Science Program

Recalling that the achievements of space science are the basis for the comprehensive development and use of space, research in space science shall be accelerated. Space astronomy and planetary exploration have already produced world-class top level research results. For the next ten years, as a goal, interdisciplinary research with the participation of distinguished researchers from universities and other institutions in areas other than space science has to be promoted so that the first-rate research outcomes in these fields will be produced on a continuous basis.

In the next five years, the radio astronomical satellite *ASTRO-G* will be launched and R & D for *ASTRO-H* will be carried out. Planetary exploration continues to be conducted by magnetospheric observation satellites such as *EXOS-D (Akebono)* and *GEOTAIL* and the asteroid explorer *Muses-C (Hayabusa)*. R & D on the Mercury explorer *BepiColombo* (a cooperative project with the ESA) and *Hayabusa-2* will be conducted. Further, the Venus explorer *Planet-C* will be launched.

Less expensive, more responsive missions can be attained by using small science satellites. Three such satellites will be launched within about five years to respond to scientific needs.

Data obtained by scientific satellites are to be systematically archived and made available to serve a wide range of researchers. R & D as well as experiments on rockets and other

flying objects such as large balloons and sounding rockets will be also promoted. Space medicine and research utilizing the space environment will be conducted using sounding rockets and the *Kibo* module of the *ISS*.

G. Human Space Activity Program

As a 10-year goal, efforts will be made for the improvement of quality of life (purpose: for instance, the realization of a long-lived society) through medical experiments in the space environment. The goal of the first rate accomplishments in space science (purpose: accumulation of intellectual assets and progress towards a new frontier of human activity) will be intensified by expanding the sphere or activity for humankind both by manned and robotic activities. Lunar exploration by robotics will have started by about 2020, taking into account the possibility of robotics and human activities on the Moon after 2020.

For the next five years, as the only Asian nation that participates in the *ISS* project, Japan's cooperation with Asia will be advanced by way of offering experimental opportunities in the *Kibo* module for Asian nations. The basic experiments for the SPSS will be also made, making best use of Japan's platform attached to the outside of *Kibo*. As already mentioned in Chapter II, *Kibo* will be made available as an EOES to collect and distribute information that contributes to environmental observation, and it will be conducted as an international cooperation project led by Japan. Every year, one H-II Transfer Vehicle (HTV) will be transported to the *ISS* under the international commitment, in order to provide experimental devices, water, food, and other items.

R & D on the robotics for lunar exploration will be initiated.

H. Solar Power Satellite System R & D Program

For the shift to the low carbon society, more efforts shall be made to establish a system of photovoltaic power generation in outer space. For a 10-year goal, R & D on the solar power satellite system will be conducted in the manner that the time schedule of its realization will be measured, taking note of the development of renewable energy on the Earth such as solar

power and wind power generation. For the 5-year plan, relevant agencies will investigate the appropriate system for the SPS along with the technological experiments of energy transmission on the Earth. On-orbit experiments will have started in about 3 years, using *Kibo* or small satellites in order to investigate the effects on the atmosphere.

I. SMALL DEMONSTRATION SATELLITE PROGRAM

The aims of Program I are the realization of the sustainable development of the space industry, and employment creation. For a 10-year goal, considering that the space industry is a strategic industry for Japan to advance the A to H systems and programs mentioned above, the risk for the new technology development has to be minimized by way of some assistance mechanisms. Thus, the promotion of state-of-the-art technological experiments using small satellites, and assistance in the manufacturing of micro satellites carried out by venture businesses and universities, shall be strengthened by the Government in order to facilitate their participation in space industry, to develop the space industry and the creation of the employment.

For the next five years, small satellites (weighing from about 100 kilograms to about 1000 kilograms) and micro satellites (no heavier than 100 kilograms) will be launched, and the on-orbit experiments on satellites systems, parts, and components thereof, will be conducted. The Government will provide support for manufacturing and launching of such satellites by the small and venture businesses as well as by universities.

2. Promotion of the Concrete Measures for Each System and Program

Nine systems and programs, specified in A to I in the preceding section of this Chapter, are selected to accomplish the six Basic Targets of this Plan. This section, then, describes how seven concretized action plans will be conducted using each of the nine satellite systems and space programs in order to attain the six Basic Targets.

(1). Action Plan I: The Promotion of Space Development and Use to Contribute to Realization of a Safe, Secure, and Affluent Society (Responding to Target 1)

Systems A to D will be made use of for this purpose: A. Land and Ocean Observation Satellite System to Contribute to Asia and Other Regions; B. Earth Environment Observation & Meteorological Satellite System; C. Advanced Information and Telecommunications Satellite System; and D. Navigation Satellite System.

The establishment of a satellite data use system is essential for contributing to making a safe, secure, and affluent society, and for that, the following points in (a) to (c) are of vital importance:

(a). Collection of the Opinions of Users

To advance the convenience and wider use of satellite data, a satellite data use system shall be established. Thus, a “coordination committee between the users and suppliers” will be set up, and the opinions of users will be duly reflected in the future satellite design, manufacturing, and use;

(b). The More User-Friendly Satellite Data Use System

A user-friendly archiving and distribution system of satellite imaging data will be explored, making the most of the current assets and know-how accumulated by the private sector; and

(c). Making of a Standardized Data Policy

A standardized data policy on limitations of the distributable resolution, pricing, and other areas of concern shall be made in a manner that strikes a good balance between data collected through use of the public funds that aims at distributing them as widely as possible for the public interest, and data produced by commercial entities to obtain proceeds. A data policy for “analyzed information” that is made by adding other information to raw data or processed data has to be created, in line with the “Basic Plan for the Advancement of Utilizing Geospatial Information” and other relevant guidelines. A standardized data policy as a guideline for satellite data distribution shall be made and publicized in a manner that will build up a user-oriented environment. Relevant authorities and private entities will have finished a standardized data policy within one year to two years.

(2). Action Plan 2: Promotion of Space Development and Use to Strengthen Japan's Security (responding to Target 2)

For that purpose, system E, or the satellite system for security purposes, will be utilized, and measures 1) and 2) specified below will be promoted:

1). New Development and Use of Space in the Security Areas

Since experiences in this field is lacking in Japan, outcomes from civil space technology will be used, and cooperation among related agencies is needed. For the more efficient use of limited resources, dual use of space technology shall be encouraged by all the Governmental Authorities. One example of dual use would be the that early-warning sensors useful to detect missile launches can also be useful in detecting forest fires.

2). Data Management for Security Considerations

In spacefaring nations, so called "shutter control" or restrictions on sensing and distributing data in a certain area during a certain period of time is usually maintained. Commercial operators may also be subject, in a general manner, to the limitations on the level of resolution for the sales of their products due to security considerations. Given that R & D on the high resolution images will be developed in Japan in the future, necessary rules on the satellite data distribution shall be considered in cooperation with the Committee on the Advancement of Utilizing Geospatial Information.

(3). Action Plan 3: Promotion of Space Development and Use to Contribute to Diplomacy as well as Diplomatic Efforts for Space (responding to Target 3)

All the systems and programs in the preceding section, or from system A to Program I, will help to realize these purposes. The following purposes in 1) to 3) are to be especially pursued:

1) Contribution to the Asia-Pacific Region

Given that the APRSAF already has accumulated a considerable exchange of views and concrete projects such as *Sentinel Asia*, the forum of APRSAF will be extensively used while Japan embarks on cooperative projects. In doing so, Japan will be able to make best use of ODA and other financial assistance to further bilateral space cooperation. One example would be the financial cooperation to build ground data receiving stations in Asian countries in addition to provide satellite data through the *Sentinel Asia* project. Such cooperation has to be conducted in

such a manner that the contributions of Japanese space activities will be openly recognized by the partners and their nationals.

Considering the limitations of APRSAF as an agency-to-agency forum in the Asia-Pacific region, a governmental level space network shall be put in place. One idea is to hold a ministerial meeting on space affairs on an occasion when the Asian regional science and technology ministerial meeting is also held.

QZS, shall be used taking special note that such positioning data will be made available to some of the Asian-Pacific region. Advanced meteorological data from *MTSAT (Himawari)* will be made available for disaster management and environmental observation in the Asian region.

Finally, Asian-Pacific cooperation should be extended to the Middle East, Africa, and Latin America.

2). Contribution to the Earth Environmental Issues

The combination of *GOSAT*, the *GCOM* constellation, and advanced *MTSAT (Himawari)-8* and *9* will be able to further contribute to earth observation. In addition to data, the analyzed information thereof will be widely distributed so that Japan will play a leading role in the global frameworks for environmental observation and monitoring. As for the environmental problems in space, Japan will further actively engage in new challenges such as space debris mitigation. Also, efforts will be made to nurture and enhance the capabilities of Japan's human resources so that they may take up important positions such as chairmanships in space fora such as COPUOS.

3). Deepening Bilateral Relationships

The Japan-US relationship in space affairs has long been strong in many respects. A Japan-US space dialogue, if established, would strengthen the relationship even further. Japan and Europe have also constructed a cooperative relationship through a variety of joint space programs. The setting up of space dialogues concerning space science and applications as well as space governance should be discussed in order to deepen such bilateral relationships. Cooperation will be pursued on individual bases with other spacefaring nations such as Russia, China, and India.

As for the bilateral space cooperation with developing countries, first, relevant information should be collected from the overseas agencies of the Ministry of Foreign Affairs, and other Governmental agencies as well as private companies, concerning the necessity of space activities to such countries. Next, strengthened coordination among the internal agencies of Japan will be pursued. A future bilateral space project arrangement with developing countries will be started with the help of various public funds such as ODA and financing from the Japanese Bank for International Cooperation (JBIC), as well as technology transfer and capacity building in human resources. In addition to the networks of the overseas agencies of the MOFA, the Prime Ministerial level “top sales” initiative will be actively utilized.

The government will, however, embark on bilateral cooperation with developing countries provided that a certain cooperative project will help to realize “human security” in the country concerned. In other words, a bilateral project will have to be effective in making a safe and secure society as well as in mitigating disasters, environmental pollution, and climate changes.

(4). Action Plan 4: Promotion of State-of-the Art R & D to Play a Leading Role in the International Society (responding to Target 4)

In order to promote state-of-the art R & D in space science, programs F to H (F: Space Science Program; G: Human Space Activities Program; H: Solar Power Satellite System R & D Program) will be employed. In order to promote such programs, issues 1) to 3) specified below will be undertaken:

1). Promotion of Space Science to Advance its Frontiers

Cooperation in studies in the areas of science and technology is especially required along with the other areas of science such as geophysics and astronomy. The principle of “independence, democracy, openness and international cooperation” shall be respected in space science research.

2). Promotion of the Human Space Program

(a). *ISS* Program

While no concrete plans have been decided upon among the participants about the future of the *ISS* after 2016, Japan should decide on its own stance, based on the factors such as

research results up to date and Japan's plans on the future human space program.

(b) Lunar Exploration by Robotics for Future Human Space Activities

Lunar exploration is an important goal among the solar planetary exploration. Japan will advance lunar exploration, with the future possibility of human space activities in mind. Over the period of about a year, the significance, goal, targeted results, technological steps, medium-to-long term schedule, and costs of the robots-human exploration program will be thoroughly studied.

In the first phase (starting about 2020), exploration by advanced robotics will be targeted. Such robotics may include two-legged robots. In the second phase, exploration by humans and robotics using the lunar post will be pursued.

Human exploration of the Moon satisfies multiple goals of Japan's space activities, ranging from contributions to the intellectual assets of humankind, to obtaining the cutting-edge technology to generate new industries, to space diplomacy, to enhancement of the international presence of Japan, and to national pride and aspirations. However, it has to be remembered that a human space program is exorbitantly costly for any one country, and serious consequences of the loss of life may have an effect on the whole space program.

3). Promotion of Advanced R & D to Contribute to Addressing the Environment and Energy Problems

A solar power system in space is said to be potentially ten times as effective as solar power on the Earth. Thus, system H will be pursued, by endeavoring to develop the necessary technology.

(5). Action Plan 5: Promotion of the Nurturing of the Space Industry as a Strategic Industry (responding to Target 5)

All systems, in other words System A to Program I, will be used for Action Plan 5.

Emphasis is placed on 1) and 3) below for this purpose and measures 1) (a)-(d) and 2) (a) - (b) and 3) (a)-(b) will be taken:

1). Fostering of International Competitiveness

(a). Promotion of Strengthening of International Competitiveness of Space Devices (Satellites, Rockets, Parts and Components Thereof)

To double the sales of space devices, the following measures shall be taken: continuous R & D, on-orbit experiments; strengthening the ability to make strategic parts and components for rockets and satellites in order to assure their stable supply; sharing the basic technological data among industry, universities, and the Government; enlarging the opportunity to make available public facilities and installations for experiments in the private sector; Governmental efforts to acquire necessary radio frequencies and orbital slots for the private sector from International Telecommunication Union (ITU); in order to increase the predictability of the private sector's investment, mid-to-long term R & D plans shall be publicized by the Government; and efforts for the size-downing, standardization, and collective purchasing of the parts by many companies for the cost-cutting in each company shall be undertaken.

(b). Enlargement of the Base of the Space Utilization Industry and the Promotion of International Competitiveness

Anchor tenancy of private services by the Government will be undertaken to assure the initial demand, and effective PPP schemes are to be designed. New businesses using satellite data will be encouraged by assisting to build a user-friendly data access system and assuring data continuity. The preferential environment will be provided for venture businesses to embark on space business. Also, international trends such as space tourism will be observed.

(c). Promotion of R & D for Strengthening International Competitiveness

R & D goals, both short-term and mid-to-long-term goals, will be formulated by the cooperation between the public and the private sectors, considering international trends. R & D plans will consist of a series of technological experiments, up to the final operations. For instance, in cases of highly risky R & D plans, technological experiments will be made using a small satellite before putting them on board real, operational satellites. Also, the close coordination between the most advanced

scientific research circles and the space industry shall be established to advance the industry's competitiveness.

(d). Promotion of the International Marketing including the Use of "Top-Level Sales"

It is necessary to cultivate an international space market where a Japan's companies can sell a set of space assets. In other words, a satellite, ground systems, utilization, and service applications, and personnel training should be included in one effective space trade arrangement. For the purpose, potential demands of foreign governments have to be determined by research of the overseas agencies of MOFA and other related agencies as well as private companies. "Top-Level Sales" will be effectively used for opening up an international market.

2). Promotion of the Construction of the Space Transportation System to Support Independent Space Activities

Independent space transportation system is indispensable for Japan to have the ability to place a satellite into the orbit when it deems it necessary. The H-IIA and H-IIB rockets are the national mainstay launch vehicles. Governmental measures should be taken for the private H-IIA rockets to acquire a certain market share by means of the assistance to enhance their technological reliability, etc. A next generation solid propellant rocket, currently being developed, will launch scientific research probes.

(a). Promotion of the Development and Use of Rockets Responding to the R & D Plan for Satellites and other State-of-the-Art R & D as well as Global Satellite Demands

(i). Basic Measures

National rockets have priority in acquiring launch contracts with Japanese Governmental missions as seen in the practices of other nations. Japanese companies are also encouraged to use a Japanese rocket for launching their satellites. A table on the mid-to-long term (five years) satellite development and use plans is attached to this Basic Space Plan, thus enabling private launching providers to make systematic plans for procurement and investment by referring to the table. Necessary measures will be taken by the Government to ensure safe commercial launches.

(ii). Construction of the Transportation System Responding to the Development and Use Plans of the Satellites

H-IIA and H-IIB rockets are Japan's mainstay rockets and as such, launching capability and reliability shall be enhanced along with the efforts to decrease their operational costs. A GX rocket is being developed to provide launching services for the mid-sized satellites, to become a backup for the mainstay rocket, to increase Japan-US space cooperation, to advance private industry, and to acquire Liquid Natural Gas (LNG) propellant technology. Considering the residual challenges in the GX rocket project, including the technological problems of the LNG propellant technology and the overall uncertainty of the development plans, the final decision as to whether it is to be put into the development phase will be made by the summer of 2010. The solid propellant rocket, on which Japan has a great deal of experience, is important for prompt launching when it is urgently needed. Solid propellant rockets will be used for the scientific research probes, and for smaller satellites for the earth observation.

(iii). Maintenance and the Development of the Basic Technology

Basic Technology will be maintained and developed in order to keep an independent launch capability through the measures in Section 2(5)1) of Chapter 3.

(iv). R & D concerning the Future Transportation System

Initial study as well as the basic R & D shall be conducted in order to construct the basic technology for the future transportation systems, including a reusable transportation system, an orbit transfer vehicle, and an air-launch system. In doing so, the advancement of the H-IIA and both unmanned (by robots) and manned space activities will be undertaken.

(b). Promotion of the Maintenance and Establishment of Launching Sites

Launching sites are maintained and operated by JAXA in Japan as the important infrastructure in order to assure the access to outer space. Many of the facilities and installations at the launching sites are now growing older and need to be appropriately renovated. The renovation and the development of the

capability of the launching sites have to be systematically carried out along with the establishment of better launching environments, such as the termination of the 190-day limitation on the possible launching days.

3). Promotion of the Industrial Activities

(a). Capacity Building for Small Business, Venture Businesses, and Universities

Capacity building for small businesses equipped with advanced technology and for venture businesses shall start. Coordination among the industries, universities and Governmental agencies will be reinforced as well. Technology transfer from the civil non-space sector into the space industry, and vice versa, and access to the satellite data will be facilitated to broaden the development and use of space. Appropriate assistance will be given to such entities in terms of using Governmental facilities and installations as well as the manufacturing and the launching of micro satellites.

(b). Taxation, Financial, and other Measures

In consideration of the great financial risks in doing business on and in space, and in order to provide internationally fair and equitable competitive terms, active measures shall be taken to increase the number of private companies entering into space business and to promote the more favorable treatment of private investment. Because space industry deals with sensitive technology and information, appropriate security trade controls, inward direct investment, and the management of sensitive information shall be undertaken.

(i). Taxation System

Special tax reduction programs such as an R & D tax program, investment promotion tax program for smaller businesses, small business capital investment tax program (Angel Tax Credit Program) and immunity to customs are applied. The consumption tax for the export of launching services is exempted.

(ii). Finance

For instance, the following financial measures can be used: export finance from the JBIC and trade insurance of Japan Trade Insurance; for the R & D of space objects and provision of

services, public funds from the Development Bank of Japan (DBJ), the Japan Finance Corporation (JFC), etc.

(6). Action Plan 6: Environmental Protection (responding to Target 6)

Systems A to I, or all the systems related to the goal of environmental protection. Measures 1) and 2) (a) to (c) will be taken.

1). Consideration of the Earth Environment

Due regard has to be paid to the influence on the Earth from the space development and use. Space development and use shall be conducted under the ISO 14000 series standards in order not to adversely affect the Earth environment. Also, to preserve and protect the Earth environment, the spin-off technology made possible by the space activities such as insulation materials and energy-generating devices in outer space will be widely utilized.

2). Preservation of the Outer Space Environment

To address space debris issues, space situational awareness, efforts to minimize the generation of debris and R & D for the disposal of the generated debris are needed. Space weather forecasting will be studied in depth since natural phenomena such as solar winds affect the space activities.

(a). Debris Situational Awareness

JAXA's capability to catalogue orbital space debris is limited to meters-level debris recognition in low Earth orbits. Therefore, coordination and cooperation with the Ministry of Defense (MOD) of Japan and the use of observation data from other spacefaring nations must be initiated in order to gain a sub-meter level of precision data on space debris.

(b). Minimizing Generation of Space Debris

As one type of measures for space debris mitigation, devices that minimize the generated debris as much as possible in the operational phase have to be designed and manufactured. Space activities in Japan are conducted in accordance with JAXA Space Debris Mitigation Guidelines. Japanese space activities also have to pay due attention to the COPUOS Space Debris Mitigation Guidelines (2007) and the Inter-Agency Space Debris Coordination Committee (IADC) Space Debris Mitigation Guidelines (2002). Japan is determined to be make permanent

contributions to promotion of space debris mitigation measures, including the rule-making thereof, in close cooperation with international society.

(c). Disposal of Space Debris

In addition to the passive mitigation of debris, measures for the active disposal of already generated space debris have to be studied. The technology for capturing space debris and disposing of it from the Earth's orbits shall be studied, aiming at on-orbit technological experiments using devices such as small satellites, through international cooperation.

(7). Action Plan 7: Investment in Next-Generation Human Resources and the Promotion of Nation-Wide Participation (responding to Target 4)

Systems and Programs A to I, or all the systems and programs correspond to the capacity building for the human resources for the next generation and the promotion of nation-wide participation in such capacity building. Measures 1), 2) (a) and (b) and 3) will be taken.

1) Nurturing of Researchers and Engineers for the Next Generation

Increasing difficulties have been pointed out in regard to maintaining a body of able and experienced engineers under the present circumstances of continuous downsizing of the Japan's space industry. In order to transfer experience and knowledge to the next generation, the following strengthened efforts have to be made within research institutions, the space industry and the space agencies: the strengthening of space education and research at universities and other research institutions; the training of engineers and scientists through the coordination between space agencies and universities; long-term plans to develop human resources; and strengthening of the capacity building in the Asian region by various measures such as accepting foreign students and young professionals from Asian countries and carrying out joint development programs such as the development of small satellites within the framework of APRSAF.

2). Promotion of the Education for Children and Outreach Activities on the Lure of Space

So as to secure the continuous advancement of space development and use, appropriate knowledge and information have

to be shared among the younger generation nation-wide. For that purpose, space programs fostering the aspirations of Japanese nationals, especially the younger generations, have to be conducted. The Space Education Centre of JAXA will, in cooperation with local educational institutions, promote the following measures:

(a) Enlargement of the Opportunities for Experience and Simulated-Experience

Tanegashima Space Center can be included in a stop at a school educational excursion and other field trips in the coordination with travel agencies; astronauts and space scientists should deliver lectures at educational institutions to inspire children, and a remote-communication system between the *ISS* and elementary school classes will be a possibility; lectures on space from the *ISS*, increasing space-related events and mid-career education for teachers at the scientific museums, and the internet transmission of a rocket lift-off will be promoted.

(b). Advancement of Space Education

Issues on space should be effectively included into the elementary level of education in cooperation with scientific museums, domestic and overseas space agencies, and other international organizations. Space Agencies will actively cultivate public relations by way of, e.g., participating in movies or TV programs, and distributing attractive images that Japan's space probes have collected.

3). Promotion of the Public Participation Measures

The taxpayers' understanding is essential for sustainable space exploration and use because of the gigantic expenditures needed. Also to enlarge the circle of those interested in the utilization of space, the Government will host such space-related events as satellite-manufacturing and space robot contests in which Japanese nationals are encouraged to participate. Ideas from the citizens are to be widely collected to make space use more accessible to and familiar to Japanese nationals. Mechanisms are to be considered for the citizens to support space development and use by way of e.g., donations.

CHAPTER IV: PROMOTION OF MEASURES BASED ON THE BASIC
PLAN FOR SPACE POLICY

(1). Organizational Structure to Promote Measures Based
on the Basic Space Plan

Measures under the Basic Space Plan will be conducted by the Strategic Headquarters through close cooperation with related Governmental ministries. The Secretariat of the Strategic Headquarters will be transferred to the Cabinet Office based on the supplementary provision of the Basic Space Law. Preparation is to be made for amending the relevant laws as the supervisory authorities of JAXA and the organizational structure and functions of JAXA are currently being reviewed for the possible change.

(2). Securing the Necessary Budget and Personnel to Conduct the Measures

The Government shall endeavor to take necessary measures for the smooth implementation of the Basic Space Plan by, for example, appropriating its budget each fiscal year to the extent permitted by the State's finances, in order to secure funds necessary to ensure payment of the expenses required for the implementation of the Plan. The government shall promote private activities and endeavors to secure the necessary funds and personnel, taking special note of the cost-effectiveness and the compatibility with other national policies.

(3). Public Announcement of the Follow-up Results of the Measures Taken

The Annual Outcome of the measures taken, or a Follow-up Report will be publicized through the internet and by other appropriate means. Based on the Follow-up Report and opinions of the coordination committee between suppliers and users, the necessary changes shall be made both to the Plan and the concrete contents of a certain measures.

(4). Strengthening of the Investigation and Analysis Functions for International Trends

International needs in disaster management and Earth environment, among others, have to be properly recognized for effective international coordination. The latest scientific achievements, the latest space industry trends in the spacefar-

ing nations, and the potential demand for space applications in developing countries are among the important kinds of information that should be well understood. Thus, the functions of doing research and analyzing the present situation and future prospects for space development and space use by international society have to be strengthened.

(5). Enactment of Legislation with respect to Space Activities

In accordance with the Basic Space Law, the Space Activities Bill will be drafted.

(6). Securing of Coordination and Consistency with Other Policies Not Relating to Space Activities

In advancing the Basic Space Plan, efforts should be made to ensure its consistency with the other policies relating to space activities including the Science and Technology Basic Plan, the Economic Growth Initiative, the Basic Plan on Ocean Policy, the Basic Plan for the Advancement of Utilizing Geospatial Information, and other policies of relevant ministries and agencies.