

航空宇宙政策・法學會誌 第28卷 第2號
2013년 12월 30일 발행, pp. 349~384

논문접수일 2013. 12. 9
논문심사일 2013. 12. 13
게재확정일 2013. 12. 23

Space Development and Law in Asia

Cho, Hong-Je*

Contents

- I. The Recent Space Program and Policy
- II. Space Law in Asia
- III. Conclusion

* Senior Research Fellow, Korea National Defense University

I . The Recent Space Program and Policy

1. Space Development Competition and Space Legislation

The Cold War proceeded along with the competition of the development of strategic missile technology between the United States of America and the Soviet Union. The development of rocket engine technology and missile maneuver technology were indispensable for satellite launching technology then. Both countries have a common interest that space development is a matter of great significance for military super powers, and tackled positively over space development competition for acquiring political and military superiority.

The space development competition between the two powers started when the Soviet Union launched Sputnik 1 in the earth orbit in 1957.

It was a keen series of competition over launching a manned satellite, space walk, the moon orbit attainment. These competitions were ceased when Apollo 11 achieved the first soft landing on the surface of the Moon in 1969.

During the space development competition, Outer Space Treaty was adopted with the consent of Russia and the US in 1966 as the Constitution of outer space. After the made treaty, both countries gradually recognized that it would be impossible to defend themselves from the nuclear strategic missile attacks, this led to two agreements: the Strategic Arms Limitation Treaty (SALT) and the Anti-ballistic Missile (ABM) Treaty, both signed in 1972. This brought about the Mutual Assured Destruction (MAD) strategy¹⁾, and the world entered into the détente era.

The technology of a military communication satellite was transferred to the commercial space technology, and the Space Shuttle of the United States of America

1) US and Russia agreed to limit the number of anti-ballistic missiles and recognized their vulnerability against nuclear strategic missile strikes. An initial nuclear missile strike will surely destroy the enemy's homeland. However, as long as all enemy's counterattack capabilities are not annihilated, a second retaliation strike of the enemy's nuclear missile will surely destroy the country which initiated attack.

succeeded in the 1970's. International Telecommunications Satellite Organization (INTELSAT) was established in 1973 and International Maritime Satellite Organization (INMARSAT) in 1979. The 1970's was a turning point in which other nations entered into the space development competition that both the U.S. and the Soviet Union had engaged previously.

During the 1980's, the détente relationship between the U.S. and the Soviet Union progressed more and more, and the cooperation between them such as the space rendezvous project was started. The advanced earth observation satellite named "LANDSAT" was launched during the détente era. The Strategic Defense Initiative (SDI)² that the U.S. had advocated in 1983 and 1985 began its development in the laboratory level. The SDI played an important role ending of the Cold War. In the 1980s many countries began to create domestic law legislations to establish an independent space development.

The Sputnik 1 launching in 1957 made the world recognize the necessity of international regulations on space development and activities in outer space. The United Nations established COPUOS the very next year, and adopted the mandate to examine legal issues concerning the peaceful uses of outer space. At the time, the military sector of the U.S.A. and the Soviet Union were in charge of the space development and they were not welcomed to discuss the prohibition of the military uses of outer space at the legal section in the UN COPUOS. Although both countries had common interests in securing the freedom of military uses in outer space. Then the UN COPUOS decided that the issue of the military uses of outer space should be handled in the United Nations Disarmament Commission (UNDC)³, where the issues of the peaceful uses of outer space entirely should also be examined.

As space activities gradually became popular, a request for making rules for space utilizations increased, and the U.S.A. and the Soviet Union jointly proposed a

2) See, Takai and others, "*TMD-Theater Missile Defense*", TBS Britanica Pub.co., 1994.

3) UNDC is a deliberative body and a subsidiary organ of the U.N. General Assembly which is mandated to consider and make recommendations on various disarmament related issues and to follow up the relevant decisions and recommendations of special sessions devoted to disarmament held so far.

compromised draft of the Outer Space Treaty to the legal section of UN COPUOS. In the draft both countries proposed that the non- military uses of outer space be limited to “moon and other celestial bodies”, because military uses of outer space have been concentrated in the earth orbit . This proposal reflected the a big step where two super powers tried to leave the freedom of a military uses of outer space and agreed to a compromise of having a completely restricted military activity in “the moon and other celestial bodies”.

The UN COPUOS finally submitted the draft of Outer Space Treaty⁴⁾ to the United Nations General Assembly and the treaty was finally adopted in 1996. After the treaty went into affect, four space laws⁵⁾ were legislated in accordance with the Treaty .

This article will study the legal mechanisms to advance space commerce in Asian countries. In the beginning of the late 1960's, the large amount of money used for space development competition was not popular in both US and the Soviet Union. Space development has grown rapidly, it not only controled by one country. The USA and the Soviet Union had moved on to focus their efforts in international cooperation on developing satellites for the use of citizens and in promoting an efficient observation system for planet exploration .

The International Space Station(ISS) was realized through the joint cooperation between the USA and Soviet Union in 1995. The space station is equipped with space telescopes for communication, and research laboratories, which have been used for inspect on repairs, and recoveries of satellites and space ships.

In 1984, the former US President Ronald Reagan approved the plan of the ISS and the construction began soon thereafter. Currently, 16 countries including Europe, Japan, Canada, Russia as well as USA have participated in research and expeditions

4) Treaty on Principles governing the Activities of States in the Exploitation and Use of Outer Space, including the Moon and Other Celestial Bodies is forced into effect in 10 October, 1967.

5) The Agreement on the Rescue of Astronauts, the Return of the Astronauts, and the Return of the Objects Launched into outer space in 1968, the Convention on International Liability for Damage Caused by Space Objects in 1972, the Convention on Registration of Objects Launched into Outer Space in 1975, and the Agreement governing the Activities of States on the Moon and Other Celestial Bodies in 1979.

in the ISS. Since the completion of the ISS many experiments beneficial to human life have been carried out. The future of the universe has emerged to become the great task of mankind.

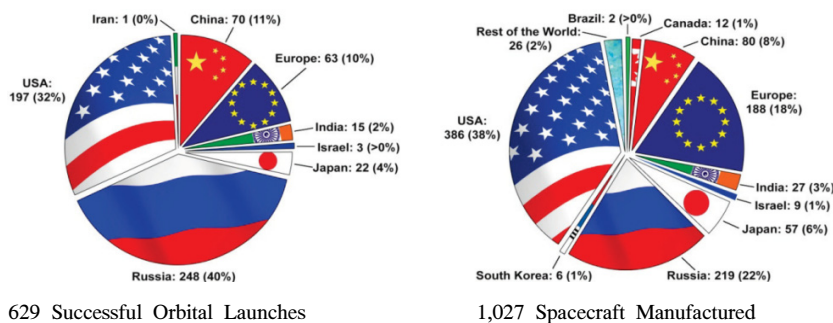
2. The Current Situation of Space Development in the World

Space developed countries like USA, Russia, Europe, Japan, China have embarked on development of competitive space exploration to improve their political and military status in the world. However, since the end of the Cold War in the 1980s the promotion of space development is expanding rapidly into the commercial sector.

Recent global satellite industry such as mobile communications has gone up to an average annual increase of 13% or more, and more than 10% (of 'what') in the future are expected to grow. In 2004, the world market for the aerospace industry is approximately 972 billion. The national budget of the space development based on the 2006 U.S. civilian and military sectors totals to 38.6 billion U.S. Dollars which accounted for 69 percent of the space development budget. This number is smaller in other countries: 2.2 billion U.S. dollars in Japan as well as in France. A current total of more than 40 countries have launched approximately 5,500 satellites for the purpose of earth observation, broadcasting, communication, location information, mobile communications, surveillance and reconnaissance. Approximately 40 to 50 percent of the satellites in the global industry belong to the US. USA is prepared for space warfare by earth observation, weather, marine, environmental monitoring, solar system exploration, satellite interception.

In addition to this, 15cm high-resolution optical recording available to the KH-11, capability of high-resolution infrared observations of KH-12 satellite have been used for the Gulf War and the war in Iraq. Recent development status of the satellite technology through international technology exchange and joint development of the LEO small satellite to take advantage of the trend is to focus on.

(Table 1) ORBITAL LAUNCH AND SPACECRAFT MANUFACTURING TRENDS, 2001-2010⁶⁾



USA's intention to achieve global leadership and international cooperation in the business sector of ISS came to a serious condition with the tragedy of the Space Shuttle. In January 2004 the US announced in "The Vision for Space Exploration" that it would rise out of its problems and promote the development of space exploration. The change of direction of the space exploration in United State, made the world's major space development countries busy with space exploration research. In a few cases recently that through the exploration of space in the area of international cooperation to strengthen the global leadership of the United States will prove a little bit is being realized.

India agreed to cooperate with National Aeronautics and Space Administration (NASA) for the creation of an unmanned lunar exploration spacecraft "Chandrayaan- 1" in the middle of May 2006. China in 2003 and 2005 successfully launched the last manned spacecraft "Shen Zhou(神舟) 5 · 6". EU has promoted a unique satellite navigation system, the Galileo program, in a response to the GPS of USA and has asked for the participation of other countries including South Korea. Japan has also been promoted to develop their own GPS to be able to compete with the American GPS.

More than 10 countries including Brazil, Australia, Canada and Republic of Korea are focusing on acquiring the relevant technology to secure an independent use of earth observation satellites. Meanwhile, Asian countries have realized that space

6) The source: Futron Corporation 2011

technology is no longer the exclusive area of the USA, Russia, or EU and other developed countries. The cooperative movement in the region is currently on the rise. China recently led the Asia-Pacific Multilateral Cooperation in Space Technology & Applications (AP MCSTA) meeting and the Asia-Pacific Regional Space Agency Forum (APRSAF) was led by Japan. These activities can be seen as a move to the configuration for creating a new space technology cooperation body in Asia similar to the European Space Agency (ESA). With such paradigm changes of space exploration, structural changes in the aerospace industry also are appearing. Starting from the 1990s through the 2000s, the airline industries have been actively focused on mergers and acquisitions similar to the European space sector.

{Table 2} The current nations participating in space development

Group	Content	Nations
A Group	Nations being able to develop satellites and launch their own rockets	USA, Russia, France, Japan, India, China, Israel, UK
B Group	Nations being able to develop satellites	Canada, Germany, Italy
C Group	Nations being able to develop satellites and launch their own rockets partially	South Korea, Austria, Denmark, Belgium, Finland, Norway, Brazil, the Netherlands
D Group	Nations joining to research program recently	Indonesia, Australia, Taiwan

*The source: Korea Aerospace Research Institute

II . Space law in Asia

Asian trends stand in sharp contrast to space development in Europe, where the leading nations cooperate extensively.⁷⁾ They established European Space Agency (ESA) as a cooperative organization. They share consensus views on space security, the need for collective approaches to problem solving, and reliance on legal remedies instead of warfare. The European countries have released a model “code of conduct”

7) James Clay Moltz, ASIA’S SPACE RACE, COLOMBIA UNIVERSITY PRESS(NEW YORK), 2012, p.1.

for space. By contrast, Asia's space powers are largely isolated from one another, do not share information, and display a tremendous divergence of perspectives regarding their space goals and a tendency to focus on national solutions to space challenges and policies of self-reliance rather than on region wide policies or multilateral approaches⁸⁾.

Asia, China, Japan, South Korea and India are the leading countries as far as the space exploration is concerned. South Korea is fast reaching to the space commerce and it is the first country in this region to have enacted a national space law in 2005 to promote the space industry. China entered into a commercial launch market around the turn of the 1990's, and China-Brazil Earth Resources Satellite (CBERS) project embarked on the commercialization of its data distribution in 2004. Tiered space cooperation frameworks such as Asia Pacific Space Cooperation Organization (APSCO) and Asia Pacific Multilateral Cooperation in Space Technology and Applications (AP-MCSTA) as well as bilateral cooperative agreements with e.g. Brazil, Nigeria and Venezuela have also helped China to develop its space commerce. India is a leading country in Asia in the field of remote sensing data sales, and it also started the launching business in 2007 through the commercial arms of the Indian Space Research Organization (ISRO), ANTRIX Corporation, Limited.

Although not as successful as China or India, space commerce has just started in Japan as well. Following the transfer of Japan's mainstay rocket, H-IIA, to the private Mitsubishi Heavy Industries (MHI) in April 2007 from Japan Aerospace Exploration Agency (JAXA), MHI became a new addition to the club of the exclusive commercial launch providers in August 2008 by putting a private communication satellite, Superbird-7, into a GSO. Yet, it was still a satellite owned by a Japanese company.⁹⁾ In January 2009, MHI concluded a contract for the commercial launch of a Korean multi-purpose satellite, Kompsat-3. That would probably be the first foreign satellite to be launched from the territory of Japan as a launching business.¹⁰⁾

8) Ibid, p.2.

9) Superbird-7, made by Mitsubishi Electronics, is the first Japanese satellite among about 20 satellites for its owner JSAT Corporation.

Korea is the first Asian country to have enacted national space legislation on commercial space activities. The first law, Space Development Promotion Act, was promulgated on 31 May 2005,¹¹⁾ and second one, Space Liability Act was promulgated on 21 December 2007.¹²⁾ In the Asian region, Korea is also the fourth nation to have constructed a spaceport in the southern part of its country.¹³⁾ Thailand, Indonesia and Malaysia own not only GEO telecommunication satellites but also remote sensing satellites,¹⁴⁾ and such advanced countries in the ASEAN have been in the space telecommunication business. It is said that a space-port for sub-orbital flights will be constructed in Singapore.¹⁵⁾

In sum, as a region, Asia is now heading into the space commerce. The aim of this article is to research the legal mechanisms to advance space activities in Asian countries. First, after studying the Asia's development of space, it will be concluded that certain harmonization of national space legislation or mechanisms is a prerequisite. Then, areas for harmonization that could also be applied to the leading Asian space faring nations would be examined. Areas to be harmonized include the registration of space objects in line with the recent developments made at the Legal Subcommittee (LSC) of the Committee on the Peaceful Uses of Outer Space (COPUOS), and finally the guaranteed governmental indemnification on the third-party liability and the export control considerations.

10) Likewise, satellite manufacturing company, Mitsubishi Electronics made a contract in December 2008 with a multinational company in Singapore to make a communication satellite. That would be the first truly domestic satellite to be exported. Although Mitsubishi Electronics exported a communication satellite to the Sing Tel Optus in Australia in 2003, important parts of the satellite were US-made, and cannot be regarded as a Japanese satellite in a strict sense.

11) Act No. 7538 of 31 May 2005. On the legislative history and the contents of the Law, see, e.g., Doo Hwan Kim, "*Korea's Space Development Programme: Policy and Law*", Space Policy, vol.22 (2006), pp.110-117.

12) Space Liability Act, Act No. 8852 of 21 Dec. 2007. Unofficial translation is found in the Office for Outer Space Affairs site. http://www.oosa.unvienna.org/oosadb/browse_country.jsp?country=ROK (last visited 12 July 2009).

13) Iran is not included in Asia for the purpose of this article. Iran successfully launched a satellite from its own territory using its own launching vehicle on 3 February 2009.

14) Indonesia was the first Asian country acquired a GEO communication satellite in 1976.

15) See, e.g., Tariq Malik, "*Spaceport Singapore: On-Stop Shopping for the Future space Tourist*", http://www.space.com/news/060613_singapore_spaceport.html (last visited 25 April 2009).

1. Republic of Korea

In 2006, KOMPSAT-2 (Korea Multi-Purpose Satellite-2) succeeded its launching and the first Korean astronaut was selected with great fanfare. Through the process, people's interest has rapidly grown in South Korea. Since the Sputnik of Russia in 1957, South Korea has participated in the ranks of space development countries with confidence. The lunar landing of Apollo-11 in 1969 is still a reminder as it was a great shock and deeply moved on the day. The dreams of human have come true through real life technology developments. Space technology used by satellites has enlarged every parts of our life from transportation, the environment, the ocean, meteorological observation, disaster surveillance, to exploration of earth resources. We have already realized that the very formidable military weapons used in the recent war in Iraq were behind space technology of satellites. Moreover space technology is a hot core technology that can easily influence national power of a country by advancements in new materials, electronic information, etc

This study includes the recent space program, policy and legislation in South Korea relating to its own supply of domestic needs, strategic technology, etc.

(1) Space Development Program and Policy in Republic of Korea

South Korea's The National Space Development Plan contains the vision and goals for the country's overall total of space develop technological capabilities to mobilize "the long-term master plan for space development", the first national space sector as a comprehensive plan was established in 1996. The National Vision for Space Exploration has been revised in 1998, 2006 and 2010. The newest version contains long-term goals and specific targets that must be reached by 2010. The goal of space development in South Korea by 2010 is to have domestic technology independently developed by the LEO satellite's utility and become part of the world market by 2015 and to enter into the world top 10 among space development countries. The

importance of space technology as a future strategic technologies, the current investment in technology and considering our future, require more attention. “The long-term space development master plan” was composed with satellite development, launch vehicle development, research and development and international cooperation and detailed sector by sector. The plan of the country from 1996 to 2010, except for private space development and total investment is planned 2 trillion and 4,649 billion won. In order to promote space industry, South Korea made “long-term space development master plan”, except in the private sector in the 1995, 1996 and 1999, where private commercial business is actively promoted such as private commercial moon satellite launched, Sharon 1, 2, 3, 5, of satellite-related projects.

(2) Space Development Investment in Republic of Korea

Korean National Space Development Policy and Research Foundation of the Executive Bureau of the Ministry of Science, ICT and Future Planning and Space Technology Development and Technical Cooperation is in charge of national projects.

In the United States, NASA and the Space Research and Development Center has planned a total of 10 specific research and development institutions in the jurisdiction is which would be responsible for the Industry.

{Table 3} Investment of the plan (The unit: million won)

	'07~'11	'12~'16	Total
Satellite bodies	8,326	10,638	18,964
Launcher/Space Center	3,584	9,743	13,327
R&D and Int'l Cooperation	470	950	1,420
Total	12,416	21,331	33,711

* The source: SECOND SPACE DEVELOPMENT PLAN IN SOUTH KOREA, 2011

(3) National Space Laws in Republic of Korea

Any person proposing to launch a space launch vehicle or to operate a launch site within Korea must obtain a license authorizing the launch or operation of the launch site from the Ministry of Science, ICT and Future Planning. A Korean citizen or company proposing to launch outside Korea or to operate a launch site outside of the Korea must also obtain a license from the Ministry of Science, ICT and Future Planning.

A foreign corporation, partnership, joint venture, association or other foreign entity controlled by a Korean citizen and proposing to launch from, or to operate a launch site within, international territory or waters must obtain a license if Korea does not have an agreement with a foreign nation providing that the foreign nation shall exercise jurisdiction.

These restrictions are similar to those in most other space faring countries and, in developing its own space law. Korea acknowledges the need to study thoroughly the laws relating to space activity and the establishment of a national space agency, etc. of these countries (e.g. the USA, Russia, ESA countries, Canada, Japan, Brazil, Argentina and Australia, etc.). This allows it to make comparisons of legal method in order to unify and produce standards that will allow it to adapt to international treaties, conventions and principles. It is advisable for us to adopt the merit from these countries' space laws so as to promote the Korean space industry as well as to influence the space situation and environment in Korea beneficially.

The Space Development Promotion Act of 2005

Korean Space Development Promotion Act of 2005, provides for the two types of registration systems: preliminary registration and formal registration. Korean citizens wanting to launch a space object other than space launch vehicles have to make a preliminary registration irrespective of the launching place to the Minister of Science, ICT and Future Planning 180 days before the scheduled launch date. Foreigners shall make a preliminary registration when the launching is carried out (i) in an area or facility within the Korean territory or under its jurisdiction or (ii)

in a foreign country using a launch vehicle owned by the Korean government or a Korean private person.¹⁶⁾ Formal registration to the Ministry of Science, ICT and Future Planning has to be conducted, followed by the preliminary one, within 90 days after the space object reaches its planned orbit.

Items to be registered are more detailed than those required by the Art.IV of the Registration Convention. Ministry of Science, ICT and Future Planning shall register a space object to the UN by way of the Minister of Foreign Affairs, and the preliminary and formal registries are maintained by the Ministry of Science, ICT and Future Planning. Extraterritorial jurisdiction in case of an obligatory registration by a non-Korean person with respect to the launching outside of Korea may cause some enforcement question. While such excessive jurisdiction is perhaps provided for in fear of Korea's assuming liability as a "launching State", that may have to be addressed in the future if a Korean national owns a launching vehicle outside Korea, and a foreign national launches a satellite without pre-registering it.

Following the example of the Aerospace Industry Development Promotion Act of 1987 and 2004, I argued the need for Korea to enact a space law to KARI and the Korean government in a paper subsequently translated into Japanese and published in the Japanese Academic Journal *KiYo* in September 2003. As space development involves large amounts of expense and high risk as a national strategic and public industry, the Korean government has recognized the need to establish the legal basis for it and to promote the fundamental space exploitation and promotion plan systematically and efficiently every five years.

Ministry of Science, ICT and Future Planning (former MOST) will seek the legislation of the Space Exploitation Promotion Act, which includes the designation of an aerospace authority and safety guidelines for future policy on space exploration projects. For this reason, the Korean government in 2004 proposed to the National Assembly a Draft for the Space Exploitation Promotion Act in order to provide systematic legal assistance for the space industry. The Draft was passed by the State

16) *Ibid.*, Art. 8 (2).

Council of the Korean government on 21 December 2004 and submitted to the National Assembly. The Draft was passed by majority resolution of the National Assembly on 3 May 2005. The National Assembly transferred the Korean Space Exploitation Promotion Act (hereafter the Korean Space Act) to the government on 17 May 2005, and the government proclaimed it with law no. 7538 on 31 May 2005.

It came into force six months after the proclaimed date, on 1 December 2005. The Act is in accordance with Korea's international obligations under the various UN space treaties and conventions. As mentioned above, it introduced a licensing regime for space activities carried out on by Korean nationals and companies. The Act also prescribes the establishment of two organizations, namely the National Space Development Council and the Investigation Committee for Space Launching Accidents. In order to launch space objects and to manage the new space center in Korea and carry out the duty of supervision of the states regulated by international treaty as a space developing country, the Korean government has established the legal basis for systematically and efficiently carrying out its fundamental space development and promotion plan. The Korean Space Act is composed of 29 Articles and mainly covers the following items:

- establishment of two organizations: the National Space Development Council and the Space Accident Inquiry Committee;
- government responsibilities;
- establishing a basic plan for promoting space exploration;
- designation of a space development institute for space exploration;
- domestic and international registration of space objects;
- management of a space objects registry ledger;
- licensing of space launch vehicles and cancellation of launch licenses;
- liability for compensation for damages as a result of space accidents;
- third-party liability insurance as a compulsory insurance;
- utilization of satellite information and support of civilian space exploration

- projects;
- rescue of astronauts and restitution of space objects;
- penalty clauses, etc.

The Space Compensation for Damage Act of 2007

Though the legal basis of Draft for the Space Damage Compensation Act was based on the Article 14 of the Space Development Promotion Act, this Draft was purported with protection of the victims sustained by the space damage and quick solution standard between the dispute party by stipulating the compensation for damage scope and the liability limitation. The Draft for the Space Damage Compensation Act was drawn up according to the circumstances in Korea and also considering the contents of Liability Convention of 1972, which are the domestic acts relating to the space compensation for damage in the developed countries. Twelve congressmen proposed the Draft for the Space Damage Compensation Act to the National Assembly on February 5, 2007. This Draft was discussed and deliberated by the Science, Technology, Information and Telecommunication Committee under the National Assembly on April 12, 2007. The Space Damage Compensation Act was passed by the majority of the Korean National Assembly and then proclaimed with law no. 8714 by the Government on December 21 2007. This Act took effect six months from the date of promulgation. Therefore, this Act will be entered into force from June 22, 2008 according to the additional clauses 1 of the said Act. Finally this Act was enacted by the method of congressman's legislature. This Act is composed of 8 articles.

2. Japan

Nowadays, there are trends of military dependence scaling-up and civilian applications burgeoning. Is there no effective move for peace towards responsible and collective use of space exclusively?

Is this the beginnings of a New Cold War in Eurasia? Continuing conflicts and new tensions in West Asia and Afghanistan, the challenge of energy, growth in energy routes and their protection, competition over resources, climate change and environmental issues. The Immediate questions are : militarization inevitable for above mentioned areas? Will space be the new scene of conflict? Are we inexorably moving in that direction? Future historians may well see Beijing's use of a missile to destroy an old weather satellite as having more lasting global impact than the Iraq war. In spite of a globalized, interdependent world the potential for conflict remains unacceptably high. Hence, we must apply the up-to-date technologies to tackle the real problems of man and society which we find in our country. There are many development problems to tackle. Science & Technology are crucial apparatus for development and their development should be committed to socioeconomic benefits in preference to display of grandeur. Space India has created a growing infrastructure, including deployment of several satellites in space for communications, remote communications remote-sensing, for the utilization of space technology, and assets in space of for such diverse sectors (agriculture, health, education, natural resource management and disaster management). India is, therefore, committed to the peaceful pursuit of space technology and to preserve outer space, a common heritage of the mankind, exclusively for peaceful uses. We share the concerns about the dangers of deployment of weapons in outer space and believe that this will not be in our collective interest. The Indian delegation considers that the development of Space Law is crucial to the orderly and organised exploration of space for the peaceful purposes. We reaffirm that the five UN Space treaties - evolved through consensus and accepted by a large number of countries - constitute the cornerstones of the international space law. "We would like to reiterate the Indian commitment to the use of Outer Space for peaceful purposes in the common interest of mankind. We support development and continuous evolution of rule of law for the peaceful use and exploration of outer space so as to ensure benefits to all countries, in particular to the developing countries."

Japan registered satellites that are solely operated by Japan even though they are launched by foreign rockets.

In the case of Japan's Optical Inter-Orbit Communications Engineering Test Satellites, OICETS, called Kirari, for example, KIRARI was launched last August by Ukraine's Doniepr rocket and was registered by Japan."¹⁷⁾

Japan continued to state that "in the case of a satellite that is operated in partnership with a foreign country, we discuss which State will register such a satellite effectively, regardless of which country launches the satellite."¹⁸⁾ Japanese position on registration will be made clear by its second space legislation, Space Activities Act, currently in the making in accordance with Art. 35 of the Basic Act on Space Policy (hereinafter "Basic Space Act") that provides for the governmental obligation to formulate national laws and regulations in order to (i) implement international space treaties,¹⁹⁾ (ii) increase national interests of Japan²⁰⁾ and (iii) improve private space business.²¹⁾ Space Activities Act has been considered by one of the working groups set up under the Strategic Headquarters for Space Development (SHSD) consisting of all Ministers.²²⁾

(1) Japan's Space Development and Utilization

As mentioned above, the United Nations decided to set up the COPUOS for not providing space for the arms race in outer space in 1958, and authorized it to legislate international rules regulating the space development and utilization. Many member states of the United Nations including the U.S. and the Soviet Union have agreed that they should not utilize outer space for attack against the earth, and accepted the interpretation of "peaceful purpose" as "non-aggressive purpose". However, as

17) *Supra note* 34, p.2.

18) *Ibid.*

19) *Supra note* 12. Art. 35 (1) of the Basic Space Act.

20) *Ibid.* Art. 35 (2).

21) *Ibid.* Both Houses of Representatives and Councillors requested in the Diet resolutions issued on 9 May and 20 May respectively that the Space Activities Act be completed no later than 2 years from the adoption of the Basic Space Act.

22) The working group on the study of the Space Activities Act consists of 11 members from the academics, industry and representatives of the space-related organizations.

for the space development and utilization, Japanese Government has selected the interpretation of “non-military purposes”.

Japan established National Aerospace Laboratory (NAL) in 1963, National Space Development Agency (NASDA) in 1969 and Institute of Space and Astronautical Science (ISAS) in 1981. These three national organizations conducted space development. The primary purposes of these organizations were to develop and utilize outer space in a purely academic, and not conduct space development in practical aspects in accordance with Japan’s interpretation of “non-military purposes.”

Therefore Japan’s Self Defense Forces were not able to utilize satellites in the framework of “peaceful purpose” principle for a long time. It is not easy to say that the space development and utilization conducted by these organizations have contributed to a domestic life improvement, economical development, and the security of Japan.

The inefficiency of the cost-performance of the space development by the three organizations was examined, and the government integrated these organizations into Japan Aerospace Development Agency (JAXA) to conduct a single space development in October 2003. However, the JAXA did not change its interpretation of “peaceful purpose” to “non-aggressive purpose”, and JAXA continues to conduct space development with “non-military purpose”.

JAXA focused on the development of national space plan for the entire establishment, and development of concrete technology, 4 in the headquarters and 18 research centers in different fields have been responsible.

Japan and India have in common for the government department in charge of aerospace development for the independent budget allocation has been installed to receive the level and for making a large number of research centers for sectional R&D. On the other hand South Korea over these countries in many ways, yet the comparison is a difficult state. As the complexity of intertwined issues related with the history of technological development and space research and development in the field of national budgets, the maturity of the aerospace industry, the future for higher levels of domestic space-based research and development has implications for the composition.

Private sector's absolute amount of space development budget in South Korea as of 2004, compared with the main space development countries is 1.41 billion dollars of the U.S. 1/113, Japan 18.1, France's 11.1 level and GDP insufficient as compared to other countries in comparison with the level

In addition, Japanese government adopted the basic space law for promoting the national space projects under the comprehensive space development policy in May 2008. The space development strategy headquarters was established in the Cabinet according to the law. The contents of the basic space project are utilization of space technology towards security field, promotion of space industry and cooperation with local governments, and the review of JAXA.

The Cabinet Standing Committees of both Houses adopted the Diet Resolutions, the contents of which are identical. The Diet Resolutions provided for the on position 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.

(2) The Contents of the Basic Space Law.

The Basic Space Law contains thirty-five articles, four supplementary provisions, and consists of five chapters. Chapter 1 contain General Provisions, provides for the Purpose of the Law, Basic Principles, and the concrete obligations of the national Government as well as the local Governments to implement the Basic Principles.

Chapter 2 is Basic Measures, requires the realization of the Basic Principles. Chapter 3 is specifies the necessary contents and the procedures on the Basic Plan for Space Policy to be drawn up by the Strategic Headquarters. Chapter 4 is Strategic Headquarters for Space Development, provides for its organizational rules in Art.

25-Art. 34. Finally, Chapter 5 is 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, 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-today Strategic Headquarters affairs (Art. 2); review of JAXA modalities and other space institutions; and review of the administrative organizations as a whole in order to enhance Japan's space capability in a comprehensive and integrated manner.

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 ? and the Working Group to Study a Space Activities Act with eleven members. Both were established on 1 October 2008. The Basic Plan for Space Policy was approved by Strategic Headquarters on 2 June 2009.

(3) 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. The Basic Principles of the Law include: peaceful use of outer space; improvement of the lives of the citizenry; improvement of human security and construction of a safe and secure society; improvement of national security; advancement of industries; development of human society by the improvement of space science and technology; promotion of international cooperation;

enhancement of space diplomacy to advance Japan's national interests in the international society; and sustainable development and use of outer space by the protection of the outer space environment.

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 and used for civil application to attain a safe and secure society, for commercialization; and security use. Upon the adoption of the draft of Basic Plan for Space Policy at the Experts Research Committee on 27 April 2009, it was publicized immediately for public comment on May 18th, 2009.

Art. 35, deserves to be highlighted because it obligates the State to draft national space legislation. Provision 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 as 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 (May 26, 2009), 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.

(4) Japan eases restrictions on military space development²³⁾

On 20 June 2012 Japan passed the Partial Revision of the Cabinet Establishment Act, which restructured the authority to regulate Japanese space policy and budget, including the governance of the JAXA. Under this legislation, the Space Activities Commission of the Ministry of Education, Culture, Sports, Science, and Technology, which was responsible for the development of Japanese space program, will be abolished.

Regulation of space policy and budget will be handed over to the Space Strategy Headquarter formed under the Prime Minister's Cabinet. Space Strategy will be supported by a consultative Space Policy Commission of academics and independent observers. By revoking Article 4 (Objectives of the Agency) of a law that previously governed JAXA and mandated the development of space programs for "peaceful purposes only," the new legislation demonstrates consistency with Article 2 of the 2008 Basic Space Law. In conformity with the principles laid down in the 1967 Outer Space Treaty JAXA is now free to pursue the non-aggressive military use of space. New legislation is the culmination of a decade-long process that sought ways to "leverage Japan's space development programs and technologies for security purposes, to bolster the nation's defenses in the face of increased tensions in East Asia."

3. China

(1) Nature of China's Challenge and Threat

On January 11, 2007, China launched a missile into space, releasing a homing vehicle that destroyed an old Chinese weather satellite. The strategic reverberations

23) Space Security Index 2013, p.90.

of that collision have shaken up security thinking in the United States and around the world. This test demonstrated

that, if it so chose, China could build a substantial number of these anti-satellite weapons (ASAT) and thus might soon be able to destroy substantial numbers of U.S. satellites in low earth orbit (LEO), upon which the U.S. military heavily depends. On February 21, 2008, the United States launched a modified missile-defense interceptor, destroying a U.S. satellite carrying one thousand pounds of toxic fuel about to make an uncontrolled atmospheric reentry.

Thus, within fourteen months, China and the United States both demonstrated the capability to destroy LEO satellites, heralding the arrival of an era where space is a potentially far more contested domain than in the past, with few rules. Having crossed a space Rubicon with their ASAT demonstrations, neither nation can un-invent these capabilities.

As the United States approaches major security policy reviews with the advent of a new administration in early 2009, both it and China face fundamental choices about the deployment and use of such capabilities, and the development of more advanced space weapons. The United States and China stand at a crossroads on weapons and space: whether to control this potential competition, and if so, how. While the United States is likely well ahead of China in offensive space capability, China currently is much less dependent on space assets than the U.S. military, and thus in the near term has less to lose from space conflict if it became inevitable.

China's far smaller space dependence, which hinders its 4 China, Space Weapons, and U.S. Security military potential, ironically appears to give it a potential relative near term offensive advantage: China has the ability to attack more U.S. space assets than vice versa, an asymmetry that complicates the issue of space deterrence, discussed later. This asymmetric Chinese advantage will likely diminish as China grows increasingly dependent on space over the next twenty years, and as the United States addresses this space vulnerability.

(2) China's Space Policy and Rule

China does not have national space legislation. However, China published white paper for Space Activities in 2006 and 2011. The Chinese government published their space policy and Purposes and Principles. The purposes of China's space industry are: to explore outer space and to enhance understanding of the Earth and the cosmos; to utilize outer space for peaceful purposes, promote human civilization and social progress, and to benefit the whole of mankind; to meet the demands of economic development, scientific and technological development, national security and social progress; and to improve the scientific and cultural knowledge of the Chinese people, protect China's national rights and interests, and build up its national comprehensive strength.

China's space industry is subject to and serves the national overall development strategy, and adheres to the principles of scientific, independent, peaceful, innovative, and open development.

- Scientific development. China respects science and the laws of nature. Keeping the actual situation of its space industry in mind, it works out comprehensive plans and arrangement of its activities regarding space technology, space applications and space science, in order to maintain comprehensive, coordinated and sustainable development of the industry.
- Independent development. Keeping to the path of independence and self-reliance, China relies primarily on its own capabilities to develop its space industry to meet the needs of modernization, based upon its actual conditions and strength.
- Peaceful development. China always adheres to the use of outer space for peaceful purposes, and opposes weaponization or any arms race in outer space. The country develops and utilizes space resources in a prudent manner and takes effective measures to protect the space environment, ensuring that its space activities benefit the whole of mankind.
- Innovative development. China's strategy for the development of its space industry is to enhance its capabilities of independent innovation, consolidate its industrial

foundation, and improve its innovation system. By implementing important space science and technology projects, the country concentrates its strength on making key breakthroughs for leap-frog development in this field.

- Open development. China persists in combining independence and self-reliance with opening to the outside world and international cooperation. It makes active endeavors in international space exchanges and cooperation on the basis of equality and mutual benefit, peaceful utilization and common development, striving to promote progress in mankind's space industry.

• Major Tasks for the Next Five Years

In the next five years, China will strengthen its basic capacities of the space industry, accelerate research on leading-edge technology, and continue to implement important space scientific and technological projects, including human space flight, lunar exploration, high-resolution Earth observation system, satellite navigation and positioning system, new-generation launch vehicles, and other priority projects in key fields. China will develop a comprehensive plan for construction of space infrastructure, promote its satellites and satellite applications industry, further conduct space science research, and push forward the comprehensive, coordinated and sustainable development of China's space industry.²⁴⁾

But, They didn't enactment any act or domestic law. China have administrative regulations. The contents of the two of the administrative regulations amount to national space laws to promote space commerce. First one was the "Measures for the Administration of Registration of Objects Launched into Outer Space" issued in 2001.²⁵⁾

Becoming a party to the Registration Convention in 1998, China established a national registry in 2001 by this administrative regulation. Second one is the "Interim Measures on the Administration of Licensing the Project of Launching Civil Space

24) China's Space Activities in 2011, Information Office of the State Council, The People's Republic of China, December 2011, Beijing.

25) Decree 6, issued on 8 February 2001. Unofficial translation is found in 33 *J. Space Law*, vol.33, (2007),pp. 437-441.

Objects” issued in 2002.²⁶⁾ Both regulations were published by the Commission of Science, Technology and Industry for National Defense (COSTIND) and the Ministry of Foreign Affairs (MFA).²⁷⁾

Arts.7 and 8 are important in terms of space commerce

Art.7 stipulates that subject to the provision of Art 8, the owner of a space object shall register the space object in the national registry and that the main owner shall register in case that the multiple owners exist. From the provision of Art.8, it is interpreted that Art. 8 provides for the registration rules for Chinese (non-foreign) satellites. Art.8 provides that in case that a foreign space object is launched from the territory of China, the “corporation which provides the international launching service of the space object shall register it at national registry.”It follows that China Great Wall Industry Corporation (CGWIC) registers a foreign satellite in the national registration booklet, which is managed by the COSTIND (Art. 11). Then, a space object shall be registered internationally by the COSTIND via MFA at the Secretariat of the UN (Art.12).

Looking into its state practices, China internationally registered Brazil Scientific Application Satellite (SAC-1) launched by LM-4B launcher from Taiyuan Satellite

Launch Center, China²⁸⁾

Other foreign satellites internationally registered while launched from the territory of China include: Motorola Iridium No.42 and No.44 (launched in December 1997), No. 51 and No.61 (March 1998), No.69 and No.71 (in May 1998), No.76 and No.3 (August 1998), No. 88 and No.89 (December 1998), and No.92 and No.93 (June 1999).²⁹⁾ As of 15 May 2009, China Great Wall Industry Corporation (CGWIC: 中國長城工業集團有限公司) conducted 29 international commercial launching,³⁰⁾among which it is

26) Decree 12, issued on 21 November 2002. Unofficial translation is found in *ibid.*, pp. 442-457.

27) See, e.g., Yun Zhao, “*Commentary: National Space Legislation in Mainland China*”, J. Space L., vol. 33 (2007), pp.431-434; Qi Yongliang, “*A Study of Aerospace Legislation of China*”, *ibid.*, pp. 405-410.

28) ST/SG/SER.E/365 (30 November 1999), p.2.

29) ST/SG/SER.E/356 (27 May 1999), p. 2.

only Iridium constellation cases which China becomes a state of registry. Some commercial satellites formerly belonged to Hong Kong, UK were later changed a state of registry from UK to China as the return of Hong Kong to China in July 1997.

It is rather rare that a launching state by way of a territorial position register a satellite in the UN registry. The US and Russia have different practices. They do not register a satellite launched from their own territory and owned by a foreign entity. They only furnish the information about the satellite(s) concerned to the Secretary General of the UN.³¹⁾ China also seems to have relinquished the practices of the 1990's if examining carefully the practices in the 21st century and the statement made at the LSC of the UN:

“With regard to the registration of foreign space objects, our registration regulations also stipulate as a country of common launches, the Chinese Government will discuss with partner countries to decide who will be the registering country. In our practice, we follow such a principle, that is the Chinese launching company which provides launching services for foreign space objects to carry out a domestic registration for the last stage of the launching vehicle that enters the outer space, to be followed by international registration by China as the launching State of this launching vehicle. However, the operating country and owner country of this payload should carry out a registration for this effective payload.

We believe when the launching country and the owner country and the operating countries of this payload are different, if there is no specific agreement on registration, it is desirable for the latter countries to make the international registration because the latter countries can carry out continuous monitoring of this payload and, therefore, is in a position to report to the United Nations Secretary-General on any future changes of the space object, including when the object is no longer in orbit.”³²⁾

30) Commercial launching in total are 34 times. <http://www.cgwic.com/LaunchServices/LaunchRecord/Commercial.html> (last visited 21 April 2010).

31) See, e.g., ST/SC/SER.E/533 (12 November 2008), p.3 This shows an Russian practice of furnishing information about a foreign-owned satellite. In Annex II of ST/SC/SER.E/533, the information of UK telecommunication satellite and German remote sensing satellite is included.

32) COPUOS/LEGAL/T.742 (10 April 2006), p.3.

Art.8 of the Chinese regulation reads that the Chinese commercial launch company should register a satellite in a domestic registration booklet launched from China but owned by a Foreign State or a company.

It does not seem to be convenient nor fully reflecting the purpose of the Art. VIII of the OST and Art. II (2) of the Registration Convention if the state of registry is different over the same space object in a domestic registry and the international one. That opinion is shared by a Chinese scholar when he stated: "Since there is only one State of registry for each space object, the State of registry should be the one which is closely connected to the jurisdiction and control over the space object. Therefore, appropriately, the State that the owner or the operator of a space object belongs to should register the space object nationally and internationally."³³ But, again, from the statement of Chinese delegation at the UNCOPUOS, the different practice may be currently taken and it seems that only the upper stages of a rocket is the object registered by the launch provider concerning a foreign satellite.

III. Conclusion

Space development and utilization competition between the United States and the former Soviet Union, military utilization in the earth orbit, and the conditions of anticipatory exercise of the right of self-defense have been examined above. Launching military satellite in earth orbit is admitted under the Outer Space Treaty, and ballistic missile development is not restricted in general international law. This is because the military sector was engaged in the development of space and missile technology in the space super powers.

It is necessary for every country to intercept nuclear ballistic missile before damage occurs because the destructive capability of the missile is so powerful. Then the UN.

33) Ling Yan, "Comments on the Chinese Space Regulations", Chinese J. Int'l L, vol.7 (2008), p.687.

Security Council admits the exercise of the right of self-defense when a threatened state faces an imminent armed attack. Japan, however, interprets the exercise of the right of self-defense extremely narrow compared with other countries, as mentioned above.

Japanese government clearly stated in the Diet that Japan does not use force on the base of the right of self-defense as long as actual armed attack occurred against Japan even if there is a threat of the armed attack³⁴).

In this connection it would also be very important and necessary to create an Asian Space Agency(ASA) for strengthening cooperation within the Asian space community towards joint undertakings. **ASA could** then act as a catalyst for common efforts in space exploitation and allow resources, technology, manpower and finances to be centrally managed in an independent fashion for the benefit of Asian countries and could also fulfill a similar function as the European Space Agency among its member States.

This could be regarded as a new road for Asia's space policy and could also coordinate the broad thinking needed to meet new challenges in Asian countries.³⁵) It could even be possible to establish an ASA as well as Asian Center for Space Law in order to strengthen the international research cooperation and friendship relations among the Asian countries so as to exploit efficiently the natural resources (Helium-3 etc.) in the moon and other celestial bodies. Since the Asian space industry will become a very promising market in the 21st century, we can expect severe competition between the Asian countries and the developed countries, such as the USA, Russia, Canada, and the EU, who will be keen to occupy the Asian market. To win this severe competition, it will be necessary for Asian peoples to work together, to strengthen cooperation in research and to establish friendly relations for the benefit of the air and space industry in Asia which should be supported from the highest political level and should be based on oriental ideology, ethics and creative ideas.

34) Answer of the government at Budgetary Committee in the Lower House of the Diet in March 1953

35) Doo Hwan Kim, *Some Considerations on the Possibility of Establishing an Asian Space Agency*, *Zeitschrift für Luft-und Weltraumrecht / German Journal of Air and Space Law*, (Vol. 50), 2001 at 397-408.

This could be effected e.g. by a solemn statement by Heads of State setting out objectives and prospects for the long term. It should be noted that this political drive will be necessary not only to set up the organization, but also during a subsequent period.

Meanwhile positive contribution of outer space about life of the human being, the voice of worry some which human being last frontier will be change battlefield is coming to be high about life of the human being. Many people foresee a high possibility of a space arms race by the US, Russia, and so forth of space power. Public opinion is growing with regard to increased measures through various international bodies, including the UN, in guaranteeing the peaceful use of outer space and preventing the space arms race. we must take long-term and systematical measures to hand over space for peaceful purposes and as a common heritage of mankind.

In Asia, China and India are the leading countries as far as the space commerce is concerned, and Japan has just started commercialization of space. Republic of Korea is also fast reaching to the space commerce and it is the first country in this region to have enacted a national space law in 2005 to promote the space industry.

Therefore cooperation in forming the legal mechanisms to advance space commerce in Asian countries will be imperative. Necessity of harmonization of national mechanisms will be confirmed, taking note of the North American and European precedents.

I suggest to establish an Asian Space Development Agency (ASDA) like an ESA since the Asian air and space industry will become a very promising market in the 21st century. We can expect very severe competition among Asian countries and the developed countries, such as the USA, Russia, Canada, and EU countries, in order to occupy the Asian market. To win this severe competition in the Asian air and space industry market, it is necessary for the Asian people to work together in union, to strengthen cooperation in research, and to establish friendly relations for the benefit of the air and space industry in all Asian countries.

Finally, a very important point is that a political drive, at the highest level, should

mobilize states toward this initiative, possibly taking the form of a solemn statement by heads of state of Asian countries setting out objectives and prospects for the long term. It should be noted that this political drive will be necessary not only to set up the organization, but also during a subsequent period. It is desirable and necessary for us to establish the ASA, in order to develop the space industry, to strengthen friendly relations and to promote research cooperation among Asian countries based on oriental ideology, ethics and creative ideas. I am sure that it is possible to establish an ASDA, if the heads of the Asian States would agree to establish the ASDA through a summit conference.³⁶⁾ Then three areas will be selected to consider the possible harmonization in Asian national space laws and/or mechanisms: registration of space objects, the third-party liability systems and export control consideration. According to the South Korean government, launch a space ship from a space center outside Cholla Nam Do Kohung in Feb 2013 was be accomplished with the knowledge that North Korea would also initiate space development. It is, therefore, important to construct a cooperative relationship with confident building measures.

36) Doo Hwan Kim, *The Possibility of Establishing an Asian Space Development Agency*, (Kiyo Vol. 2, No. 2, 2001), Proceedings of the Reseach Institute of Social System, Chuo Gakhin University, Abiko, Chiba in Japan, p.56.

References

- James Clay Moltz, *ASIA'S SPACE RACE*, COLOMBIA UNIVERSITY PRESS (NEW YORK), 2012.
- Doo Hwan Kim, "Korea's Space Development Programme : Policy and Law", *Space Policy*, vol.22 (2006)
- Space Liability Act, Act No. 8852 of 21 Dec. 2007. Unofficial translation is found in the Office for Outer Space Affairs site.
http://www.ooa.unvienna.org/oosadb/browse_country.jsp?country=ROK (last 12 July 2009).
- Tariq Malik, "Spaceport Singapore: On-Stop Shopping for the Future space Tourist", <http://www.space.com/news/060613_singapore_spaceport.html> (last visited 25 April 2009).
- Space development White Paper in South Korea, 2006.
- Yoon Lee, "A Review of the Space Development Promotion Act of the Republic of Korea", *J. Space L*, vol.33 (2007).
- Decree 6, issued on 8 February 2001. Unofficial translation is found in 33 *J. Space Law*, vol.33, (2007)
- Decree 12, issued on 21 November 2002.
- Yun Zhao, "Commentary: National Space Legislation in Mainland China", *J. Space L*, vol. 33 (2007), pp.431-434; Qi Yongliang, "A Study of Aerospace Legislation of China", <http://www.cgwic.com/LaunchServices/LaunchRecord/Commercial.html> (last visited 21 April 2010).
- COPUOS/LEGAL/T.742 (10 April 2006).
- Ling Yan, "Comments on the Chinese Space Regulations", *Chinese J. Int'l L*, vol.7 (2008)
- Doo Hwan Kim, Some Considerations on the Possibility of Establishing an Asian Space Agency, *Zeitschrift für Luft-und Weltraumrecht /German Journal of Air and Space Law*, (Vol. 50), 2001.
- Takai and others, "*TMD-Theater Missile Defense*", TBS Britanica Pub.co., 1994.
- Futron Corporation 2011.
- Space Security Index 2013.

Abstract

The Sputnik 1 launching in 1957 made the world recognize the necessity of international regulations on space development and activities in outer space. The United Nations established COPUOS the very next year, and adopted the mandate to examine legal issues concerning the peaceful uses of outer space. At the time, the military sector of the U.S.A. and the Soviet Union were in charge of the space development and they were not welcomed to discuss the prohibition of the military uses of outer space at the legal section in the COPUOS. Although both countries had common interests in securing the freedom of military uses in outer space. As the social and economic benefits derived from space activities have become more apparent, civil expenditures on space activities have continued to increase in several countries.

Virtually all new spacefaring states explicitly place a priority on space-based applications to support social and economic development. Such space applications as satellite navigation and Earth imaging are core elements of almost every existing civil space program. Likewise, Moon exploration continues to be a priority for such established spacefaring states as China, Russia, India, and Japan. Recently, Companies that manufacture satellites and ground equipment have also seen significant growth. On 25 February 2012 China successfully launched the eleventh satellite for its indigenous global navigation and positioning satellite system, Beidou. Civil space activities began to grow in China when they were allocated to the China Great Wall Industry Corporation in 1986. China Aerospace Corporation was established in 1993, followed by the development of the China National Space Administration. In Japan civil space was initially coordinated by the National Space Activities Council formed in 1960. Most of the work was performed by the Institute of Space and Aeronautical Science of the University of Tokyo, the National Aerospace Laboratory, and, most importantly, the National Space Development Agency.

In 2003 all this work was assumed by the Japanese Aerospace Exploration

Agency(JAXA). Japan eases restrictions on military space development. On 20 June 2012 Japan passed the Partial Revision of the Cabinet Establishment Act, which restructured the authority to regulate Japanese space policy and budget, including the governance of the JAXA. Under this legislation, the Space Activities Commission of the Ministry of Education, Culture, Sports, Science, and Technology, which was responsible for the development of Japanese space program, will be abolished. Regulation of space policy and budget will be handed over to the Space Strategy Headquarter formed under the Prime Minister's Cabinet. Space Strategy will be supported by a Consultative Policy Commission as an academics and independent observers.

By revoking Article 4 (Objectives of the Agency) of a law that previously governed JAXA and mandated the development of space programs for "peaceful purposes only," the new legislation demonstrates consistency with Article 2 of the 2008 Basic Space Law. In conformity with the principles laid down in the 1967 Outer Space Treaty JAXA is now free to pursue the non-aggressive military use of space. New legislation is the culmination of a decade-long process that sought ways to "leverage Japan's space development programs and technologies for security purposes, to bolster the nation's defenses in the face of increased tensions in East Asia." In this connection it would also be very important and necessary to create an Asian Space Agency(ASA) for strengthening cooperation within the Asian space community towards joint undertakings.

Key Words : space development. Space law, civil space activity, Asia space agency, military space activity

초 록

아시아의 우주개발과 우주법

조홍제*

1957년 스푸트니크 1호 발사 이후 세계는 우주활동에 대한 국제적 규범의 필요성을 인식하였으며, 유엔은 우주의 평화적 이용위원회를 설립하여 이러한 문제들을 검토하여 왔다. 1960년대는 미소가 군사적 우주활동을 중심으로 하여왔으나, 최근에는 민간의 우주활동들도 상당히 증가되고 있다. 특히, 우주활동으로 인한 사회적, 경제적 혜택은 더욱 가시화됨에 따라, 각국은 우주 활동에 대한 민간 지출을 계속 증가 시키고 있다. 거의 모든 새로운 우주활동에 참여하는 국가들은 사회 및 경제 개발을 지원하기 위해 우주기반 활동에 더욱 중점을 두고 있다. 위성 항법 및 지상관측과 같은 우주활동들은 기존의 민간 우주 프로그램의 핵심이다. 이와 더불어 달 탐사는 중국, 러시아, 인도, 일본 등 우주력이 있는 국가들에게 우선순위가 되어가고 있다.

최근 위성 및 지상 장비를 제조하는 회사들은 상당한 성장을 하고 있다.

중국은 2012년 2월 25일 자체 개발한 지구항법 위성시스템을 위한 열한 번째 위성을 성공적으로 발사하였다. 중국은 1986년에 중국 만리장성 산업주식회사에 부여된 우주 활동으로부터 발전하기 시작했다. 중국 항천공사는 1993년 중국의 국가우주국의 설립에 이어, 창설되었다. 일본의 민간우주활동은 1960년에 창설된 국가우주활동위원회에 의해 이루어졌다. 대부분의 활동은 동경대학, 국립항공 우주 연구소 항공과학연구소 및 국립 우주 개발 기구에 의해 수행 되었다.

2003년에 이 모든 활동들은 일본 우주항공개발연구기구(JAXA)로 통합되었다. 일본은 군사적인 우주개발에 대한 제한을 완화하였다. 2012년 6월 일본은 우주기본법을 수정하여 JAXA를 포함한 일본의 우주 정책과 예산을 통제할 수 있는 권한과 조직을 개편하였다.

과거 문화체육부에 소속되어 있던 우주 프로그램의 개발에 대한 책임을 수상직할로 변경하였다. 그리고 JAXA를 규율하던 우주기본법 제4조의 “평화적인 목적으로만 사

* 국방대학교 안보문제연구소 연구원

용” 한다는 조항을 삭제함으로써 비공격적인 군사적 우주활동을 할 수 있게 되었다. 이로써 동아시아의 긴장이 증대되는 시점에서 국가방위를 강화하기 위한 목적에서 우주를 이용하기 위한 가능성을 열어놓았다. 이러한 점에서 아시아의 상업적 우주활동을 발전시키기 위한 협력적 기구 창설이 필요하다.

주제어 : 우주개발, 우주법, 민간우주활동, 군사적 우주활동, 아시아우주기구