Abstract

Purpose: Recently, all countries of the world recognize space as an important area for military operations in modern warfare and are accelerating the space development. Especially countries in Northeast Asia including China and Japan are strengthening their space power, and space power is expected to be an important element in future warfare. Korea is also developing space technology and expanding its space activities as a member country of Space Club following the launch of NURI in 2022. Accordingly, it is necessary to prepare the foundation for utilizing the space with the military purpose step-by-step to prepare for the future warfare.

Methods: Legal and institutional preparations should precede by understanding and utilization of space of international community, especially those of advanced countries in space. This is because our space-related laws tends to see the space as a subject for scientific technology and the importance of security for the military use of space does not reflected. Therefore, the necessity for organic and practical cooperations between related agencies for the early establishment of defense space power and legal and institutional maintenance that supports ever-growing space technology are required.

Results: Ministry of National Defense will prepare 「Master plan for the development of defense space power」 and establish the defense space power based on it. However, the progress of 425 project has been delayed due to the different view of existing statue and government departments given that the trend of the urgency of strengthening defense space power, development of nuclear and missile of North Korea, space development of all countries over the world and strengthening of space forces. It is possible to promote to strengthen the defense space power by existing legal system, but there are many restrictive elements. We can consider enacting a special law related to defense space basically to overcome the existing legal system, but there is no agreement among relevant agencies and there is high possibility for criticism on militarization of the space by international community.

Conclusion: Therefore, it is necessary to promote the chairman of National commission on Space to at least Prime Minister and give full authority of the Minister of Defense on security and defense space through the amendment of current laws such as Space Development Promotion Act, Defense Acquisition Program Act, Act on the Organization of National Armed Forces and Aerospace Industry Promotion Act. And it should be noted that it is necessary to develop into activities that are not opposed to international law and the justification of the peaceful use of the space by international community.

Keywords: Peaceful and Military Use of Space, Space Development, Defense Space Power, National Commission on Space, Suitability of System

1. Background of and Need for Review
1.1. Background of the review
If the 19th century were the era in which we ruled the sea, and the sky until the 20th century, the ‘space age’ has advented where the universe must be ruled in the future. From the space activities led by the state, private space activities are expanding with a focus on advanced space countries. In terms of the outer appearance, it seems to be a peaceful and commercial use of space. Yet in reality, space is used militarily for their own benefit, or peaceful and commercial use of space may be converted into the military use.

We must face the fact that space has become an object of military use, from the scientific exploration to the commercial use. Under the customary international law of ‘peaceful use of space’, the international community understands that the ‘military use of space with non-aggressive intent’ is inclusive.

As a member nation of the Space Club following the launch of Nuri in 2022, the Republic of Korea is currently in the process of developing space technology and expanding its space activities. The legal and institutional preparations ought to be sufficiently preceded by taking as an example the understanding and utilization of space in the international community, especially for and by the advanced space countries. The Korean space related laws take on such a strong view of space as an object of science and technology, yet the importance of security for the military use of space has not been reflected[1].

1.2. Need for the review

Recently, countries around the globe have recognized outer space as an important area of military operation in the modern warfare, and are accelerating their space development. In particular, in Northeast Asia, the countries including China and Japan are strengthening their space power, and it is expected that the space power will become an important factor in the future warfare. Accordingly, Korea also needs to prepare for the future warfare by preparing a step-by-step basis for the military use of space.

The Ministry of National Defense seeks to prepare the "Basic Plan for Defense and Space Power Development" and build the defense space power based on it. In particular, North Korea’s nuclear tests and missile launches, as well as the development of the defense and space capabilities by China and Japan, operate as a significant threat to the security of the Korean Peninsula and, at the same time, destroy the balance of power given the asymmetric forces.

It is urgent to build a defense space force in order to prepare for the significant security threat surrounding the Korean Peninsula and acquire the information in advance and secure the precise response capabilities. It is also urgent to deploy a reconnaissance satellite and an independent early warning satellite in preparation for North Korea’s nuclear and missile launch as a surveillance and reconnaissance force capable of the early detection of the movement of North Korea’s mobile missile launchers. Furthermore, it is urgently needed to establish a military utilization plan for the Korean-styled independent navigation satellites, which are reflected in the mid- to long-term national space development plan.

Considering the fact that the international space law is stagnant compared to the space development and expansion of space activities, the promotion and management of space activities via the domestic law has increasingly become important, and such space activities may maximize the Korean interests in accordance with the international law. Furthermore, the development of the domestic space law will play a positive role in the formation of the international space law while promoting the use of space. It derives the requirements for the organic and substantive cooperation among the related institutions for the early construction of the defense space power and for the establishment of laws and systems to support the ever evolving space technology[2].
2. Defense and Space Policies of Advanced Space Countries

2.1. The United States

The National Aeronautics and Space Act 1958 is the framework law on the scope and discipline of aerospace activities, which states the need and stipulates that the weapons system development, military activities and the activities needed for the national defense are under the responsibility and guidance of the Ministry of National Defense. Section 102d(6) of the Act refers to the military use of results obtained from space activities as a national goal to be achieved via the U.S. aerospace activities and grants the Department of Defense the preferential access to the information of military value and importance. Article 203(c) 12 grants the NASA the authority to cooperate with the dispatch of military personnel of the Army, Navy, Air Force, and Marine Corps and conclude agreements, while the Land Remote Sensing Policy 1992 specifies that the Ministry of National Defense takes the initiative in remote sensing.

The US space security strategy is to prevent and deter threats from the space power while maintaining the US leadership in space, and improve the space capabilities via international cooperation. The Strategic Command (Space Commands of all forces were integrated on October 1, 2012) that conducts space operations under the Department of Defense, the National Reconnaissance Office (NRO) in charge of the space-based information, and the Defense Advanced Research Projects Agency (DARPA) in charge of research and development related to space or missiles and the Ballistic Missile Defense Research Institute (BMDO), etc. In particular, the NRO is responsible for the production and operation of intelligence satellites, and provides the image information and signal information collected to the National Security Agency (NSA) under the Department of Defense and the Central Intelligence Agency (CIA) [3][4].

2.2. Russia

Among the two largest space powers along with the United States in the past, Russia has maintained its national status based on the use of space since the 2000s, actively promotes space development, and places significant importance on the military value of space. Currently, the air force, air defense force, and anti-aircraft missile force are integrated into the aerospace force to improve the efficiency of the aerospace military force, and early warning, optical reconnaissance, navigation and communication satellites are used for the military purposes.

The Law of the Russian Federation “About Space Activity” mandates that the space activities for non-military purposes be performed by the Space Agency, and Article 7 provides that the space activities for defense and security purposes be performed by the Minister of Defense, and the Minister of Defense is required to implement plans to develop and use the military space technology in conjunction with other ministries [5].

2.3. China

The People’s Liberation Army is leading China’s space development, and the final decision on all forms of space development lies with the military. China’s space expansion against the monopolistic U.S. space domination has begun by launching a manned spacecraft, successfully intercepting satellites with ballistic missiles, promoting the establishment of a satellite navigation system, promoting the establishment of a space force, and promoting the manned lunar exploration [6].

2.4. Japan

According to the Peace Constitution, the peaceful use of space was understood as intended for the non-military use. By defining it, Japan is preparing the foundation for the military use of the space with a non-aggressive and defensive character from the perspective of the demilitarization of the universe. Accordingly, reconnaissance satellites are already in possession, and
the early warning satellites and independent satellite navigation systems are making progress in possession, while the JAXA, which was integrated in 2003, oversees the space-related R&D.

Established in accordance with the Framework Act on Space, the Space Development Strategy Headquarters oversees the space development, including the promotion of the space industry and defense purposes, and the head of the headquarters has been elevated to the Prime Minister. All ministers of state participate in this and the Prime Minister is leading it. Considering the position of the Prime Minister or Chancellor under the parliamentary cabinet system, Japan’s space policy promotion system has significant implications[7][8].

3. Requirement for the Enactment and Amendment of Korean Laws for the Defense and Space Power Development

3.1. Space development promotion act

The Act is playing the role of the framework law on space activities, and it is realistically more effective to find ways to improve the space and take on the form of amendment rather than enacting the new special law in the form of a new special law(which recently has been amended and enforced on November 11, 2021 and April 21, 2022).

While the space development requires a comprehensive and balanced consideration of the national security and other factors as well as the scientific and technological perspectives, the position(role) of the President or Prime Minister is not specified, and the Minister of Defense has a very little involvement. In the sense that the initiative under the Act lies with the Minister of Science, Technology and Information and Communication(who is not the Deputy Prime Minister, yet a member of the State Council of the same level), it does not align with the system of governance under the Constitution and the Government Organization Act. In particular, the fact that the Ministry of Science and ICT has the initiative in space development is an issue when considering the comparative legal reality that the Ministry of Defense and the military are in charge of an important axis of space development as a result of advanced space countries considering the national security. After the enactment of the same law, it has undergone some amendments except for the amendment of other laws, rendering the legislative system still insufficient given the name of the 8th.

As a consideration for the amendment, ①the space development with specific validity by giving priority to the required ministries, rather than just consulting with the required ministries in the use of satellite information, securing and promoting the budget for related space development projects, etc., must be made possible. ②Considering the fact that the Space Committee deals with national strategic issues rather than making the Space Committee an externally direct body of the President and the Minister of Science, ICT and Future Planning is the chairperson, it must be changed to the affiliation of the Prime Minister, which may be effectively adjusted and supported, and the chairperson must be changed to the Prime Minister, and the Prime Minister should take on the responsibility of making timely and reasonable space development possible for the relevant ministries, which has been reflected in the recent amendment.

As the Chairman of the National Space Committee, the Minister of Science and ICT is not in the position of a Deputy Prime Minister, but only in a position on the same level as the heads of relevant administrative departments, and hence, there are fundamental limitations in coordinating diverse and flexible space development. In particular, it is difficult to coordinate the National Security Agency with the Ministry of Defense, the central administrative agency for national security purposes. It is legitimate. ③Furthermore, in view of the trend of space powers maximizing their national interests through military use while observing the principle of peaceful use of space, the Ministry of Science, Technology and Information and Communication is the
main ministry, and given which, considering space only as an object of scientific exploration and for the security purposes excluding private space development might delay the use of space for security purposes.

However, while maintaining the legislative structure to use space peacefully, it is necessary to lay the groundwork for the Ministry of Defense’s space development in the security related areas, so that the possibility of military use is not directly revealed. The amendment of the formula to determine that the Minister of Defense has authority in connection with national security or to exclude the application of this Act might excessively allow exceptions under the jurisdiction of the competent ministries, thereby undermine the purpose of the legislation, considering that the legislative purpose of the current Space Development Promotion Act is to promote the peaceful use of space through systematic promotion of space development[9].

3.2. United defense act

According to Article 4 of the same law, Paragraph 1 stipulates that the central united defense council shall be established under the jurisdiction of the Prime Minister. Paragraph 2 also provided that the chairman of the Central Council is the Prime Minister, and the members are the Minister of Foreign Affairs, Minister of Unification, Minister of Justice, Minister of Defense, Minister of the Interior and Safety, Minister of Culture, Sports and Tourism, Minister of Agriculture, Food and Rural Affairs, Minister of Trade, Industry and Energy, Minister of Health and Welfare, Minister of Environment, Minister of Employment and Labor, Minister of Gender Equality and Family, Minister of Land, Infrastructure and Transport, Minister of Oceans and Fisheries, Minister of SMEs and Startups, Minister of Government Policy Coordination, Minister of Veterans Affairs, Minister of Legislation, Minister of Food and Drug Safety, Director of the National Intelligence Service and the head of the United Defense Headquarters, and other persons prescribed by the Presidential Decree.

According to the same law, the central united defense council under the Prime Minister’s office and the chairperson becomes the Prime Minister, and hence, it is in line with the fact that it is reasonable to make the National Space Committee under the direct control of the Prime Minister and change the chairperson to the Prime Minister in the need for amendment of the Space Development Promotion Act. In the future, the universe will also become the battlefield of the nations, and naturally, it will be embraced by the concept of united defense. Since the head of the united defense headquarters is the Chairman of the Joint Chiefs of Staff, it is natural to give the Minister of Defense, who has military authority, and the Chairman of the Joint Chiefs of Staff, who has military authority, the key involvement in space, which will become the realm of future battlefield for nations.

According to the text of the law, just because an organization belongs to the President or belongs to the Prime Minister, the chairperson of the committee does not necessarily become the President or the Prime Minister. In the case of the Act on the Sustainable Use of Dokdo, the Prime Minister serves as the chairman of the Dokdo Sustainable Use Committee for the organic cooperation and coordination among the related central administrative agencies and local governments.

Table 1. Article 15 of united defense act.

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3.3. Defense acquisition program act

Under the same Act, it is possible to pursue a defense acquisition program such as the development of satellites for military purposes, but it is necessary to make the basis for development easier by adding space power such as satellites to the weapons system. However, it is possible to choose whether to adopt an insertion method for the Act or supplement it with the Enforcement Decree of the Act thereunder.

Since military purposed satellite development is also a space development project, it is possible to secure the satellites through the procedures stipulated by the Space Development Promotion Act. However, if the military desires to develop and secure it in a timely manner according to the needs desired by the military, it may be considered to insert a special regulation as the same Act has the status of a special law with respect to the Space Development Promotion Act, a general law.

In order to more easily develop satellites for defense and military purposes, it is more preferable to add satellites to the enforcement ordinance of the Act through review by the State Council. This is because it is not appropriate for the law to directly reveal the will to use space for military purposes through the provision of securing satellites for the military purposes.

As it is considered that only minor matters stipulated by the Presidential Decree are stipulated for the omission of review by the Space Committee under the Space Development Promotion Act, it is more special under the Defense Acquisition Program Act than expanding the exceptions by adding the review omissions of the Space Committee under the Space Development Promotion Act, and hence, is appropriate to provide flexibility through the insertion of regulations(addition of consideration by the Defense Acquisition Program Promotion Committee instead of reporting to the Prime Minister and omitting the review by the Space Committee on the development of satellites for military purposes). This is because Article 4 of the same Act stipulates that the defense acquisition program is governed by this Act, except where there are special provisions under other laws.

3.4. Act on the organization of the Republic of Korea armed forces

If the Korean space activities, such as a leap in space launch vehicle technology and securing military satellites, increase exponentially, a change in the organization of the armed forces targeting space is expected. Through the amendment of the law, the existing military types of the Army, Navy(including the Marines), and the Air Force may be expanded to add the new types of military service, such as the Strategic Army or the Space Force.

Under the premise that the Korean space activities will make a dramatic leap in the Korean space activities because the armed forces are organized in terms of the army, navy, and air force(hereinafter referred to as "each force") in accordance with Article 2 Paragraph 1, new types of soldiers in the Strategic Army or Space Force are added or integrated with the air force. Hence, it may be reorganized into a military class of the Aerospace Army.

Alternatively, when needed for the military purposes pursuant to Article 2(3), joint units and other necessary institutions may be established under the command and supervision of the Minister of Defense as prescribed by the Presidential Decree. Hence, upon receiving the delegation of the above, a joint unit under the command and supervision of the Minister of Defense rather than the Chairman of the Joint Chiefs of Staff may be established in the form of a Presidential Decree.

Korea, which is faced with different realities from those of such space powers as the United States, Russia, and China, is more legitimate to prepare for the space activities such as space monitoring through satellites by establishing a joint unit through the enactment of a Presidential decree rather than adding or reorganizing a separate military class. An external display of active military activities will never yield any benefit given the security realities of Northeast Asia.
3.5. Whether a special law governing satellites is enacted

Mindful of the fact that Korea is a model peacemaker in the international community and that it promotes the peaceful use of outer space by adhering to the space related conventions and treaties executed by the Republic of Korea with other countries and international organizations in accordance with Article 3 of the Space Development Promotion Act, and even if the military use is won over towards the peaceful use as long as it is non-aggressive, it is not desirable to attempt a military use in the face of the international community. However, the structure of the existing Space Development Promotion Act emphasizes only the purely peaceful use of space such as scientific exploration, excluding the possibility of military use of space, and does not sufficiently consider the space activities of neighboring space powers. Hence, it is natural to secure the national security by securing independent military satellites, etc., and promote the maximization of the Korean interests as permitted by the International Space Act.

As noted in the above, the Space Development Promotion Act and the Defense Acquisition Program Act should be amended to be more Ministry of Defense friendly, and at the same time, the United Defense Act and related laws such as the Armed Forces Organization Act should be taken into consideration with priority, and there should be no confusion in the legislative system on space activities through the enactment of a special law that governs only the satellites.

3.6. Whether the space framework act is enacted

The discussions of the enactment of the Space Framework Act seem to have been stimulated by the fact that the Space Development Promotion Act did not fully fulfill the function of the general law on the space activities and Japan, a space power, enacted the Space Framework Act. In the legislative process, it is very difficult to enact a new special law, and while the Space Development Promotion Act is playing the role of a general law, it is desirable in reality and legislatively further support Korea's space activities through the reasonable amendment of the law.

However, the legislative structure that prioritizes the peaceful use of space under the Space Development Promotion Act must be maintained, and the space activities for defense and security purposes must be fully considered without harming them, and the preferential authority of the Minister of Defense must be secured. This method offers the systematic synthesis in terms of the structure of the international space law and the existing space related Korean laws.

4. Conclusion

Considering the stagnation of space international law, regulation and management of space activities can be important through domestic law, and the development of space domestic law will play a positive role in the formation of space international law while promoting the use of space. Military use of space is understood as peaceful use, and given the urgency of strengthening defense space, North Korea’s nuclear and missile development, space development, and space military strengthening trends around the world, existing legislation can push for strengthening defense space, but there are many constraints.

The revision to upgrade the chairman of the National Space Commission to the prime minister is reasonable because there is no consultation among related agencies and there is a high possibility of criticism over the international community’s militarization of space.

The current laws, such as the Space Development Promotion Act, the Defense Acquisition Program Act, the Armed Forces Organization Act, and the Aerospace Industries Promotion Act need to be inserted and revised to give the Minister of Defense full authority, but it needs to
be carried out as an activity that is not opposed to international law and the cause of peaceful use of space.

5. References

5.1. Journal articles


5.2. Books

5.3. Additional references


6. Appendix

6.1. Author’s contribution

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