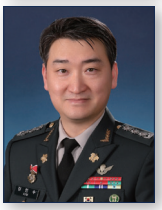
RINSA FORUM
Korea National Defense University
Research Institute for National Security Affairs
http://rinsa.kndu.ac.kr, http://www.kudu.mnd.mil
vol. 100 I 2025. 10. 31.



SDD Space Security Working Group: Growing into a Multilateral Forum to Discuss Space Security

Jung, Yungjin
Associate professor at Korea National Defense University

Hosted since 2022 by the Ministry of National Defense of the Republic of Korea on the occasion of the Seoul Defense Dialogue, the Space Security Working Group has been attended by more than 200 high level experts from government, industry, and academia from over 40 countries annually. SSWG has been addressing the challenges that the international community is facing in the field of space security and discuss various measures to overcome them. SSWG will soon become a multilateral forum for international collaboration to build a safer and more sustainable space security environment through commercial space, and as a practical opportunity to strengthen strategic partnerships.

Space Environment: Congested, Contested, and Competitive

Today, the international space community has been focusing on discussions about "the safety, security and sustainability of space activities", which has been put on the agenda of almost all of space-related multilateral platforms, including the United Nations, since the 2000s. This comes from a rapid increase in the number of spacefaring nations and space objects in particular, including satellites, and an exponential increase in space debris. According to the European Space Agency, about 23,770 satellites have been placed into Earth orbit since the start of the Space Age in 1957 through October 2025, resulting in the generation of a huge amount of space debris.

- ESA: Space debris by the numbers[1] -

■ Number of rocket launches since the start of the Space Age in 1957	About 7070 (excluding failures)
■ Number of satellites these rocket launches have placed into Earth orbit	About 23770

1) https://www.esa.int/Space_Safety/Space_Debris/Space_debris_by_the_numbers

■ Number of these still in space	About 15860
■ Number of these still functioning	About 12900
■ Number of space objects regularly tracked by Space Surveillance Networks and maintained in their catalogue	About 43510
■ Estimated number of break-ups, explosions, collisions, or anomalous events resulting in fragmentation	More than 650
■ Total mass of all space objects in Earth orbit	More than 15100 tonnes
■ Not all objects are tracked and catalogued. The number of objects estimated is based on statistical models to be in orbit	
• 54000 space objects greater than 10 cm (including approx. 9300 active payloads) • 1.2 million space debris objects from greater than 1 cm to 10 cm • 140 million space debris objects from greater than 1 mm to 1 cm	

According to the UN, the number of spacefaring nations has reached over 90 states as of now.[2] Therefore, outer space has become congested, contested, and competitive, and consequently, many nations consider outer space as a strategic area.

There is no internationally and generally accepted definition of space security. A publication by the United Nations Institute for Disarmament Research describes space security as "measures designed to prevent deliberate harms to a space system, including its component parts, from intended or intentional threats undertaken by another actor."[3] But this definition is narrowly worded. A definition of space security depends on the perception of each nation. For instance, space security is also understood to refer to the utilization of outer space for national security purposes, including military activities. Therefore, space security is usually understood to include both of the above concepts. For this reason, space security discussions fall under the purview of the United Nations disarmament bodies, including the Conference on Disarmament, First Committee, and the Disarmament Commission. Since disarmament-related issues involve sharp conflicts of interest between nations, the consequence is that such discussions at the United Nations progress quite slowly. To overcome these difficulties, states and international governmental and non-governmental organizations have been discussing space security at the international and regional level through various forums. However, there has been no forum in the Asian region to deal with this issue on an ongoing basis. Therefore, there has been a growing need for a platform in the Asian region where this issue can be discussed consistently.

ROK Defense Space Strategy

Since 2015, the Republic of Korea has been carrying out a reconnaissance satellite project called the "425 Project", which consists of one EO/IR satellite and four Synthetic Aperture Radar satellites. Starting with the launch of the first SAR satellite in April 2024, a total of four satellites have been successfully launched so far. The final satellite is scheduled to launch in early November 2025. In addition, since 2022, Korea has been working on a project to develop ultra-small satellites with various purposes, such as security, communication, disaster response, and so on. In particular, the main mission of the project is to collect information around the Korean Peninsula. Also, being a regional satellite navigation system, the Korean Positioning System is under development with the aim of building it by 2035.

Considering the increase in space assets for defense purposes, in February 2023, the Republic of Korea Ministry of National Defense published 「Defense Space Strategy」 which is the top-level document among defense documents relating to space. The strategy sets a strategic objective of securing long-term sustainable space activities in the space domain, and to advance the ability of space operations on the basis of jointness. In that connection, it is especially noteworthy that the expression "long-term sustainable space activities in the space domain" was used, taking into account the congested, contested, and competitive space environment. In other words, this demonstrates that the Strategy is in line with international trends surrounding space security.

To achieve such strategic objectives, the Strategy presents six basic principles, as follows:

- Develop the space strategy, operation concept, and doctrine on the basis of jointness
- Have the ability of early situational awareness, and to respond to space risks and space hazards
- Contribute to national space development, in conjunction with our national space system
- Set up the law and policy, and institutional framework for the development of defense space power
- Expand ROK-US and international space cooperation
- Strengthen civil·public·military space cooperation

The Defense Space Strategy presents four strategic directives for the purpose of achieving the strategic objective and basic principles. One of the four directives concerns national and international cooperation. At the international level, the Ministry of National Defense is required to advance international defense space cooperation and strengthen international cooperation for protecting space assets. These two efforts to be made are directly related to space security. And to make outer space safe and long-term sustainable, international cooperation is needed. For this, the Ministry of National Defense recognized the need for a multilateral platform to discuss various emerging issues on space security.

SDD Space Security Working Group

Since 2012, being a multilateral cooperation platform with ministerial-level representatives of global defense, the Seoul Defense Dialogue, hosted by the Ministry of National Defense

2) The United Nations, Our Common Agenda Policy Brief 7, For All Humanity - the Future of Outer Space Governance, May 2023, p. 9.

3) UNIDIR, A Lexicon for Outer Space Security, 2023. p.40.

of the Republic of Korea, has contributed to multilateral security cooperation, particularly in the Indo-Pacific, and to peace on the Korean Peninsula. On the occasion of the SDD, the Ministry decided to hold a Space Security Working Group (SSWG) to deal with all issues related to space security by bringing together high-profile defense officials and civilian security experts from both countries and international security organizations.

With the 1st SSWG being held in 2022, the 4th SSWG was hosted in September 2025. SSWG discusses different agendas every year, considering the major issues of space security being discussed internationally that year. The theme of the 1st SSWG was "Space Security for Sustainable Space Activities". Under the 1967 Space Treaty, the international law governing space activities only prohibits the deployment of weapons of mass destruction in Earth's orbit, and there is no clear provision to prevent or prohibit competition in space or passive or active threats against the safe operation of space objects. To supplement this, the UN General Assembly adopted the resolution of "reducing space threats through norms, rules, and principles of responsible behavior". SSWG focused on what behaviors are responsible or irresponsible.

The theme of the 2nd SSWG in 2023 concerned "Ensuring Space Sustainability, Developing Space Security and Defense Space Cooperation". In 2023, the outer space arms race concerning respective national interests was a major topic of discussion both internationally and regionally. In this regard. the U.S. has pledged not to conduct destructive 'Direct-Ascent Anti-Satellite missile' (DA-ASAT) tests, and the Republic of Korea (ROK) subsequently announced that it would join this endeavor. However, this does not solve the fundamental challenge. So, SSWG made efforts to discuss and make substantive efforts to concur on international norms and international law for space security.

The 3rd SSWG in 2024 dealt with "International Cooperation for Enhanced Space Domain Awareness in response to Evolving Space Threats". This agenda arose from the following background. An exponential rise in space debris generated by destructive DA-ASAT tests and a series of unintended collisions of space objects has been threatening the stable operation of satellites by each nation. Therefore, the ability to identify what the space objects are, and where they operate in, as well as to assess the movement and threat of objects, has become vital strategically. However, not a single nation alone can equip itself with sufficient SDA capabilities because of the extensiveness of outer space, the orbiting nature of space objects, the Earth's rotation, and the geographical location of a nation. In this regard, a global SDA network transcending civil-military relations and national borders must be developed with a sense of urgency for the sustainable development of all mankind.

The theme of the 4th SSWG was "New Partner for Space Security: Expansion and Evolution of Commercial Space". Major space powers are actively pursuing measures to safeguard their space interests and enhance related security capabilities. Among the most notable developments in this context is the rise of commercial space activity and its strategic integration into national security. Leveraging advanced space technologies, rapid innovation cycles, and cost-effective solutions, the commercial space sector is increasingly regarded as a practical complement and, in some cases, a substitute for traditional military-led space capabilities. Governments are aligning with this trend through policies that establish commercial space as an essential component of defense space architectures. These include sustained investment in startups, ensuring a stable global supply chain, and building institutional foundations to strengthen the resilience of space assets. Such efforts aim to reinforce public and private partnerships and ultimately enhance the overall ability to respond to challenges in the space security environment through the integration of commercial capabilities.

Towards the stable growth of SSWG

The Space Security Working Group has been attended by more than 200 experts from government, industry, and academia from over 40 countries annually. In particular, high-level experts from military and industrial sectors from major spacefaring nations (USA, France, India, Germany, UK, etc.) and emerging spacefaring nations (Australia, Poland, etc.), and international organizations (UN, NATO, EU, etc.) participated as presenters and discussants. The 5th SSWG is also scheduled to be held in the second half of 2026, and will address the challenges that the international community is facing in the field of space security and discuss various measures to overcome them.

SSWG will soon become a multilateral forum for international collaboration to build a safer and more sustainable space security environment through commercial space, and as a practical opportunity to strengthen strategic partnerships.

Dr. Jung, Yungjin is a associate professor at Korea National Defense University, where he has been teaching and conducting research.
He earned his Ph.D. in International Law(Space Law) from Paris-Saclay University(University of Paris XI). He was a senior researcher at Korea Aerospace Research Institute from October 2009 to August 2022. He is currently a member of the Panels of Experts for Space-Related Disputes at Permanent Court of Arbitration in Hague. Dr. Jung has been a member of Korean Delegation to the inter-governmental organizations including UN, UNIDROIT, ITU, OECD, MTCR, etc.
His primary research focuses on the space law and space security.

The Pitfalls of the Science and Technology-Oriented Military Discourse

Kim, Insoo
Sociology Professor, Korea Military Academy

The ROK military has promoted a transition to a science and technology-oriented force as a response to demographic decline and evolving security threats. This approach relies heavily on technological determinism, presenting technological modernization as a near-panacea for challenges facing the military. This paper aims to discuss the following three pitfalls hidden within technological determinism, which assumes that technology alone can resolve strategic problems. First, the discourse obscures underlying manpower issues, including the need for highly skilled personnel to operate advanced systems. Second, organizational and cultural stagnation, including hierarchical authority and human rights concerns, are not addressed by technology alone. Finally, democratic control of the military may be weakened as an overemphasis on technological education overlooks the importance of cultivating critical thinking, ethical reasoning, and a broad understanding of human conflict.

Introduction

The nature of warfare in the twenty-first century is undergoing rapid and fundamental transformation, largely driven by the acceleration of scientific and technological innovation. Advances in artificial intelligence, autonomous systems, precision-guided munitions, cyber capabilities, and network-centric operations are reshaping the strategic environment. Accordingly, militaries worldwide have intensified their shift toward science and technology-oriented forces, marking a departure from conventional doctrines based on mass mobilization and manpower-driven defense. Ultimately, this global trend underscores a strategic effort to maintain national security through enhanced operational effectiveness and deterrence capability in an era where knowledge and innovation, rather than numbers alone, define military power.

In response to these changes, the South Korean government has embraced the concept of a "science and technology-oriented military," presenting it as a central axis of future defense strategy. The Lee Jae-myung administration, like its predecessors, has explicitly framed the development of a trusted, elite military force through the adoption of advanced technologies such as artificial intelligence as a key national policy agenda. The vision is appealing because it promises to address multiple pressing challenges simultaneously: the demographic collapse that threatens manpower sustainability, the sophistication of North Korea's asymmetric capabilities—including nuclear weapons, ballistic missiles, and cyber operations—and the erosion of public trust in the military following recurring scandals and inefficiencies.

However, at the core of this discourse lies a reliance on technological determinism—the assumption that advances in technology inevitably dictate the trajectory of military transformation and, by extension, can independently resolve structural and operational challenges. While it is undeniable that technological progress continues to reshape the conduct of warfare, modernization efforts centered exclusively on technology risk succumbing to technological optimism, or what might be described as a belief in technological omnipotence. This paper critically examines the underlying assumptions embedded within the discourse on a science and technology-oriented military and evaluates its implications across three key domains: personnel retention, organizational culture, and democratic oversight. It concludes with a cautionary argument that, without sustained critical reflection and systematic planning, such discourse may obscure—rather than address—the deeper strategic problems confronting the military institution.

I. Concealment of Manpower Challenges

South Korea faces one of the steepest demographic declines among OECD countries, with projections indicating a dramatic reduction in the working-age population by mid-century. This demographic trajectory undermines the sustainability of the traditional conscription-based manpower model, which has historically formed the backbone of the conscription army. South Korea is required to maintain a minimum of 500,000 troops to deter and repel a potential North Korean attack; however, the total force has already declined to approximately 450,000 as of this year.[1] Against this backdrop, the push toward a science and technology-oriented military is often framed as a solution to the expected manpower shortage. The discourse suggests that technological modernization—through drones, AI systems, cyber operations, and autonomous

1) Bahk, Eunji. "Korea's military faces deepening troop shortage due to plummeting birthrate," *The Korea Times*, September 22, 2025.

platforms—can enable a single soldier to exert the combat power equivalent to that of multiple personnel.

While this perspective has superficial appeal, it underestimates the complexity of human resource requirements in a technology-intensive military. Advanced systems do not eliminate the need for personnel; rather, they require highly skilled, specialized operators capable of managing, maintaining, and adapting complex technologies under high-pressure conditions. The problem lies in the fact that the military's traditional warrior ethos fails to offer individuals possessing these qualities the conditions or opportunities for success. Morris Janowitz, in his seminal work *The Professional Soldier*, warned of this tension: "Particularly at the middle level, officers with technical skills are believed to have the highest degree of civilian employability, while they enjoy less prestige and more limited career opportunity in the military."[2)]

This observation remains highly relevant to the contemporary South Korean military, where competition from civilian sectors has intensified. The outflow of science and technology personnel has already become a serious problem in the context of cyber operations. Recognizing the strategic significance of cyber defense and offense, Korea University established a Department of Cyber Defense in 2011 through an agreement with the Army. Students receive a full four-year government-funded scholarship in exchange for committing to seven years of mandatory service as cyber-specialist officers upon graduation. The first students were admitted in March 2012, and the first cohort of cyber-specialist officers was commissioned in June 2016. In 2016, 27 out of 28 graduates were commissioned, yielding a 96% commissioning rate. However, as shown in Table 1, the rate has steadily declined over the years, with only 4 out of 23 graduates from the 8th cohort commissioned in 2023.[3)]

Table 1. Commissioning Status of Korea University Cyber Defense Department Graduates

Year	2016	2017	2018	2019	2020	2021	2022	2023
Graduates	28	28	30	29	29	27	25	23
Commissioned	27	26	27	24	20	17	13	4

Source: Yonhap News, September 19, 2023, https://www.yna.co.kr/view/AKR20230915148800504.

The Ministry of National Defense attributes this decline to "excessively long service periods, treatment that is unreasonable compared to the private cyber-security market, and dissatisfaction with being assigned basic tasks that do not match the officers' expertise."[4)] This explanation highlights a critical oversight: technological modernization alone cannot guarantee a stable and motivated workforce. Recruiting, training, and retaining personnel with advanced technical skills is increasingly difficult when civilian careers in high-tech industries offer higher pay, professional recognition, and greater career mobility.

Consequently, unless systemic reforms address compensation, career progression, and recognition for specialized expertise, technological modernization may exacerbate rather than alleviate the human resource problem. Conscripting talented individuals is the most cost-efficient way, but it is not possible to retain these individuals in the military on a long-term basis. To keep science and technology experts in service, the military must offer compensation comparable to—or better than—what is available in the general labor market. However, South Korea's military leadership is likely to view military service as a duty or civic obligation rather than as a career with economic incentives. Surveys of Korea Military Academy graduates (classes 41-50), who comprise the Army's senior leadership currently, indicate that only 5.9% identified low pay as a demotivating factor for active service. [5)] It is inevitable that the military will confront the challenge of retaining highly capable personnel—individuals often coveted by the private sector—if its leadership continues to stigmatize economic compensation for service.

II. Organizational Stagnation and Cultural Constraints

A technology-intensive military requires an organizational culture fundamentally different from that of a labor-intensive force. Labor-intensive militaries rely on large numbers of personnel performing standardized, repetitive tasks under a hierarchical command structure. In contrast, technology-intensive militaries depend on smaller numbers of highly skilled specialists capable of operating and maintaining advanced systems. This shift requires decentralized decision-making, continuous professional development, and incentive structures that reward expertise and initiative rather than conformity or sheer manpower. Militaries worldwide have recognized that highly educated, technically skilled personnel are less tolerant of rigid, dehumanizing, or abusive environments. For the sake of specialist morale and retention, they are striving to foster an innovative organizational culture. South Korea's military culture, however, remains far from this ideal. In the Army Vision 2050 report, the Army itself critiques its organizational culture as follows:

> "The control-oriented organizational management, which emphasized planning, procedures, and structure during the early industrialization era, will no longer be suitable. This is also the most vulnerable

2) Morris Janowitz, *The Professional Soldier: A Social and Political Portrait* (NY: Free Press, 1970), p. xxvi.

3) *Yonhap News, September 19, 2023, https://www.yna.co.kr/view/AKR20230915148800504.*

4) Ibid.

5) KMA, *A Survey on the Social Identity of Korea Military Academy Graduates: Retrospect on the Past 50 Years and Prospect for the Future* (Seoul: Hwarangdae Research Institute, 1996), p.15.

area of the current Army organization. While the Army, as a highly typical hierarchical pyramid structure, continues to strictly maintain a control-oriented management approach, autonomy, agility, and diversity are largely absent."[6]

The second distinguishing feature between labor-intensive and technology-intensive militaries is the proportion of civilian personnel. In the United States, the pure combat component of the Army accounted for 28% during the Second World War, but this share declined to 11% during the Iraq War in 2005.[7] The resulting increase in vacant non-combat positions was filled mostly by civilian employees. Consequently, transforming into a technology-intensive military fundamentally motivates the military to recruit a substantial cohort of civilian specialists to manage logistics, technical maintenance, and other support functions. In the same vein, Defense Minister Ahn Gyu-baek stated, "We need to maintain a force of 500,000, with 350,000 active-duty troops focused on combat roles, while outsourcing all non-combat functions, such as guard personnel." [8] However, the traditional in-group identity of the military personnel makes it challenging for the military to create an environment in which civilian employees can fully utilize their skills and perform at their best. These cultural and structural features often undermine the diversity of military personnel.

Table 2. Past Five-Statistics on Dismissal of Civilian Personnel (Grade 7, 8, and 9)

Year	2019	2020	2021	2022	2023
Number	386	444	682	962	1,238

Source: Kwan-young Kim, "Non-Commissioned Officers leaving the Military," *E-daily*, October 7, 2024,

While technology can enhance the combat effectiveness of individual soldiers, it does not automatically cultivate an integrated organizational culture that fully incorporates civilian personnel. Attrition among civilian personnel is already a serious concern in South Korea. As Table 2 shows, the number of dismissals among civilian personnel has steadily increased over the past five years. Civilian employees constitute roughly 40,000 members of the ROK military workforce. Over a recent three-year period (2021-2023), among 3,514 newly appointed civilian personnel assigned to Army front-line units, 648 applied for leave of absence, and 896 were dismissed—a total of 44% either leaving or requesting leave.[9] The growing attrition reflects the absence of organizational reform: improved professional norms, career development pathways, and accountability mechanisms. Without a parallel transformation in culture, governance, and human resource management, the science and technology-oriented military risks becoming a superficial modernization project—technologically advanced in appearance but organizationally and institutionally stagnant.

III. Technology Education and Crisis of Democratic Control

The discourse on a science and technology-oriented military often emphasizes technological education as the most important component of officer training, assuming that advanced technical skills are the key determinant of operational effectiveness in modern warfare. Proponents argue that, in an era of AI and the Fourth Industrial Revolution, technically proficient officers are better equipped to plan, execute, and coordinate complex operations. This perception—that operational success depends primarily on technological mastery—can reinforce the prioritization of technical competence over adherence to democratic norms, legal constraints, and civilian oversight. From this perspective, combat effectiveness is assumed to be maximized when technology—rather than humans—controls the entire process, from target identification to weapons release. However, the pursuit of efficiency must be balanced by legitimacy. Ethical issues arise when technology reduces human oversight or is used in ways that harm civilians, demonstrating that technological capability alone does not guarantee ethical conduct in warfare.

There have already been numerous cases where AI has made flawed decisions, resulting in civilian casualties. First, the U.S. military has long used AI-assisted image recognition and pattern analysis in drone operations. In August 2021, during the U.S. withdrawal from Afghanistan, an American drone strike in Kabul mistakenly targeted what was believed to be a terrorist vehicle. The strike killed ten civilians, including seven children.[10] Subsequent investigations revealed that AI-supported identification and confirmation processes were flawed and insufficiently verified by human analysts. Second, during the 2023-2024 Gaza conflict, the Israel Defense Forces reportedly used an AI-based system called Lavender to identify Hamas operatives and prioritize targets for attack. The system automatically generated target lists with minimal human review. However, reports from whistleblowers and human rights organizations suggested that the system often relied on imprecise or biased data, leading to large-scale civilian casualties.[11]

Technical knowledge is meaningful only to the extent that

6) Republic of Korea Army, *The Army Vision 2050* (Republic of Korea Army, 2019), p. 102.

7) John J. McGrath, *The Other End of the Spear: The Tooth-to-Tail Ratio (T3R) in Modern Military Operation* (Kansas: Combat Studies Institute Press, 2007), p. 65.

8) Ji-hwan Kim, "Ahn Gyu-baek urges maintain 500,000 forces with 350,000 active troops and 150,000 outsourced," *Chosun Biz*, 1 October 2025.

9) *E-daily, October 7, 2024, https://www.edaily.co.kr/News/Read?newsId=02250086639050624&mediaCodeNo=257.*

10) C. Todd Lopez, "DoD: August 29 Strike in Kabul 'Tragic Mistake,' Kills 10 Civilians," *DOD News*, September 17, 2021.

11) Bethan McKernan and Harry Davies, "The machine did it coldly': Israel used AI to identify 37,000 Hamas targets," *The Guardians*, April 3, 2024.

the user understands its limitations. An excessive focus on technology in officer education risks inadvertently narrowing the intellectual horizons of future military leaders. Science and technology discourse implicitly prioritizes technical expertise over other critical dimensions of military leadership, including critical thinking, ethical reasoning, and a broad understanding of human conflict. Over time, officers may become highly specialized in technical operations while lacking the strategic, ethical, and political literacy necessary for accountability. As Huntington stated, the essence of military professionalism lies not only in expertise but also in social responsibility and corporateness.[12] While the ability to manage complex weapons systems is undeniably vital, wars are fought and resolved by humans.

The essence of technology must lie in supporting the most legitimate outcome through deep reflection, rather than merely achieving the most cost-efficient results through precise prediction. Professional military education that neglects the humanities, social sciences, and democratic norms will struggle to cultivate officers capable of reflective decision-making in ambiguous and morally charged situations. While technological proficiency is increasingly important for modern officers, an overemphasis on technical education at the expense of broader professional, ethical, and civic training can undermine both the effectiveness of democratic oversight and the military's integration within a democratic political system. Without capable human commanders making final decisions, technological advancement risks weakening rather than strengthening the democratic foundations of national defense.

Conclusion

The discourse surrounding a science and technology-oriented military in South Korea embodies significant promise but also important pitfalls. By relying heavily on technological determinism, the military risks obscuring pressing human resource challenges, including the recruitment and retention of highly skilled personnel. Organizational culture and structural rigidity, including a strong warrior ethos and hierarchical authority, are unlikely to be remedied by technology alone. Finally, excessive reliance on technical expertise without effective integration of democratic principles and norms threatens to weaken civilian military control and accountability. Yet, the discourse of technological modernization rarely addresses this issue.

The fundamental challenge is not merely to adopt the most recent science and technology, but to ensure that the human and institutional dimensions become compatible with them. The shift toward a technology-intensive force is not a panacea; instead, it will significantly amplify difficulties across a tri-fold spectrum of personnel acquisition: first, the retention of specialized technical experts who possess high competitive value in the private sector; second, the recruitment of civilian defense personnel for essential non-combat functions; and third, the development of commanders capable of ethical, democratically aligned decision-making amid the inherent uncertainties of the modern battlefield.

Ultimately, a successful transition to a technology-intensive military requires more than just technologically advanced systems. The future of the South Korean military will depend not on the number of autonomous systems it acquires, but on its ability to pursue concurrent reforms in personnel management, organizational culture, and governance structures. A genuine military reform must include an agenda for cultivating officers who can integrate technological competence with an innovative organizational environment that enables technology to reach its full potential. Only by addressing all interconnected dimensions can the South Korean military realize a truly modern, effective, and democratically accountable military capable of meeting the challenges of the twenty-first century.

Dr. Insoo Kim is a sociology professor at the Korea Military Academy, where he has been teaching and conducting for over decades. He earned his Ph.D. from University of Wisconsin at Madison. His primary research focuses on military organizations and civil-military relations. He has published extensively in leading journals, including Armed Forces & Society, Journal of Strategic Studies, Korean Journal of Defense Analysis, and Korea Observers.

12) Samuel P. Huntington, *The Solder and the State: The Theory and Politics of Civil-Military Relations* (NY: Belknap Press of Harvard University Press, 1957).

RINSA
Research Institute for National Security Affairs

RINSA, KNDU
1040, Hwangsanbeol-ro, Yangchon-myeon, Nonsan-si
Chungcheongnam-do, 33021, Rep. of KOREA
Tel : +82-41-831-6414
Publisher : Young Ho Kim
Editor : Park Young-June