



## The Trump Administration’s Nuclear Policy: Escalation Dominance and Implications for Extended Deterrence

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## From *K-Bangsan* to Global Top Four: Recent Trends and Future Strategies for the 2030s

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In his August 25, 2025 address at CSIS, President Lee Jae-myung stated that North Korea’s nuclear arsenal has grown 2.5 times since 2022, emphasizing that “the ROK and the U.S. will respond firmly to North Korean provocations,” while also underscoring that “appropriate mechanisms to manage such threats are also necessary.” Since the Nuclear Consultative Group’s establishment, extended deterrence has been strengthened through nuclear consultation procedures, table-top simulations, and military exercises. The second Trump administration is expected to enhance credibility and escalation dominance by promoting conventional-nuclear integration, modernizing low-yield nuclear weapons. Recognizing that the expansion of absolute escalation dominance could trigger an arms race and crisis instability, a balanced strategy is needed to address and mitigate these inherent limitations while complementing extended deterrence based on flexible nuclear capabilities.

### Introduction

President Trump has emphasized increasing defense burden-sharing by allies and the leading role of allies in deterring regional threats such as North Korea, raising concerns that this could undermine the credibility of extended deterrence between South Korea and the United States. During the first Trump administration, there were instances of disagreement between South Korea and the United States, such as the possibility of reducing the number of United States Forces Korea during defense cost-sharing talks. The second Trump

administration is expected to continue emphasizing the importance of alliances to enhance the credibility of extended deterrence, building on the nuclear policy pursued by the first Trump administration.

The 21st century nuclear order is also changing into a multipolar, multilayered, and asymmetrical structure, amplifying concerns about the reliability of extended deterrence. Along with changes in the regional nuclear order, such as China’s strengthening of its nuclear capabilities and the emergence of new nuclear-developing countries,

the development of non-nuclear strategic weapons, such as AI-enhanced cyber capabilities, hypersonic weapons, and precision strike systems, is weakening the survivability of nuclear weapons infrastructure and increasing various risks of escalation. Despite the need to reduce defense spending, the United States is likely to pursue overwhelming superiority in the possibility of limited nuclear use at all stages of a crisis through nuclear weapon modernization, the development of low-yield nuclear weapons, the integration of nuclear and conventional forces, and the construction of the “Golden Dome.” The Trump administration’s nuclear policy direction reflects a strategy to secure escalation dominance and block the benefits that the opponent seeks through limited nuclear escalation.<sup>1)</sup> Although the Trump administration’s nuclear policy has not yet been formally announced, this paper seeks to project the direction of the Trump administration’s nuclear policy from the perspective of the escalation dominance and to suggest implications for extended deterrence.

## Extended Deterrence and Escalation Dominance

Extended deterrence aims to defend allies and security partners from nuclear attacks by third countries by exercising deterrence against those third countries. Bruce Russett explains that cases of deterrence failure occur when the attacker does not trust the deterrent power of the deterrent country.<sup>2)</sup>

The essence of extended deterrence is to convince third countries that the United States will actually intervene, even at the risk of destroying its own territory, if a third country attacks one of its allies. If the United States’ commitment cannot be trusted, allies may doubt whether the threat will actually be carried out, and adversaries may accurately judge that the United States will not sacrifice its own vital interests for its allies.

As strategic competition between nuclear powers intensifies and China strengthens its nuclear capabilities, concerns are growing over the weakening credibility of extended deterrence amid a more complex geopolitical environment surrounding nuclear weapons. According to the U.S. Department of Defense, China’s nuclear warhead stockpile is expected to exceed 1,000 by 2030, and if current trends continue, it could reach approximately 1,500 by 2035.<sup>3)</sup> The quantitative expansion and qualitative improvement of China’s nuclear forces are contributing to the resurgence of an arms race among major powers in the international nuclear order and the destabilization of arms control agreements that characterized the post-Cold War era. In particular, the hypersonic missiles being developed by both Russia and China enable accurate and rapid attacks

on nuclear infrastructure, which could ultimately undermine the survivability and deterrence stability of nuclear weapons.

The emergence of new nuclear powers and the possibility of further nuclear proliferation are also complicating the nuclear order. Despite international sanctions and diplomatic pressure, North Korea has rapidly advanced its nuclear and missile programs in the 21st century, declaring itself a nuclear power. The advancement of North Korea’s nuclear capabilities has already sparked debate in neighboring South Korea and Japan about the credibility of extended deterrence and their own potential nuclear options. The intensification of the arms race between nuclear powers and the trend toward nuclear proliferation could exacerbate strategic entanglement, where military actions in one region affect stability in another, thereby increasing the risk of escalation.

A new nuclear strategy based on the possibility of limited use of nuclear weapons is having a negative impact by lowering the threshold for nuclear use. Over the past decade, Russia has repeatedly threatened nuclear attacks in Ukraine and the Baltic region, employing a strategy of “escalate to de-escalate” to defuse crises. This strategy involves threatening to use tactical nuclear weapons at the outset of a conflict to shock the opponent and force them to cease hostilities under favorable conditions. North Korea, which lags behind the United States and South Korea in conventional military capabilities, has also consistently emphasized its readiness to use nuclear weapons through various statements and publicized tactical nuclear unit training exercises. Such strategies employed by Russia, North Korea, and others pose a significant challenge to the United States’ extended deterrence strategy and are prompting changes in U.S. nuclear strategy.<sup>4)</sup>

In its 2018 Nuclear Posture Review, the United States explicitly referred to this nuclear strategy as a “limited nuclear escalation strategy” and emphasized the need to secure various options to maintain deterrence even at low levels of escalation. It also suggests expanding cooperation in areas such as information sharing, exercises, and training to accelerate the integration of nuclear weapons and conventional forces with allied countries. A new nuclear strategy based on the possibility of using nuclear weapons could weaken the threshold between conventional war and nuclear war, ultimately undermining the credibility of extended deterrence.

It is generally believed that three key elements—capabilities, intentions, and communication—must be fulfilled in order to enhance the credibility of extended deterrence. In a crisis situation where the possibility of nuclear weapons use increases, for an attacker to trust the deterrence threat, they must believe in the following two conditions simultaneously: First, the deterrent state must possess the military capability to carry out a preemptive strike or lethal retaliation. Second,

1) Lonsdale, D. J. (2019). “The 2018 Nuclear Posture Review: A Return to Nuclear Warfighting?” *Comparative Strategy*. VOL. 38, NO. 2, 98-117. <https://doi.org/10.1080/01495933.2019.15730748>

2) Russett, B. (1985). “The Calculus of Deterrence.” *World Politics*, 37(4).

3) Kristensen, Hans M. et al. (March 12, 2025). “Chinese nuclear weapons, 2025.” *Bulletin of the Atomic Scientists*. <https://thebulletin.org/premium/2025-03/chinese-nuclear-weapons-2025/#:~:text=silos>

4) Waden, John K. (July 2018). “Limited Nuclear War: The 21st Century Challenge for the United States.” Lawrence Livermore National Laboratory Center for Global Security Research. [https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR\\_LP4-FINAL.pdf#:~:text=might%20make%20a%20strategy%20of,China%20has%20demonstrated%20considerable%20restraint](https://cgsr.llnl.gov/sites/cgsr/files/2024-08/CGSR_LP4-FINAL.pdf#:~:text=might%20make%20a%20strategy%20of,China%20has%20demonstrated%20considerable%20restraint)

the deterrent state must clearly communicate its willingness to actually carry out a preemptive strike or retaliation, and the opponent must believe this.<sup>5)</sup>

Strengthening the credibility of extended deterrence is directly linked to the concept of escalation dominance, which ensures superiority in capabilities and will over the enemy in times of crisis. Escalation dominance is a strategic framework that prevents the opponent from attempting to further escalate a crisis by possessing both the capability and will to surpass the opponent at every stage of the conflict. This concept was systematized by Herman Kahn in the 1960s, who presented dozens of levels of conflict, from peaceful states to full-scale nuclear war, through the concept of the “escalation ladder.”<sup>6)</sup>

Escalation dominance refers to the ability to escalate a conflict in a way that imposes costs on the adversary without allowing them to respond. Possessing escalation dominance means having the ability to control the risk not to escalate to the next level. Strategies aimed at securing escalation dominance can play a positive role in addressing the credibility issues of extended deterrence by emphasizing superior capabilities and resolve against the adversary.

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## The Trump Administration’s Nuclear Policy

The Trump administration is likely to continue pursuing a strategy of escalation dominance, securing step-by-step options against nuclear or non-nuclear strategic threats, in line with the nuclear policy of the previous Trump administration. First, the Trump administration’s 2018 NPR also pointed out the deterioration of the international security environment and the return of competition among major powers, and pursued the establishment of escalation dominance to suppress the development of nuclear and non-nuclear capabilities of potential adversaries such as Russia, China, North Korea, and Iran. The second Trump administration cannot rule out the possibility of expanding the methods of nuclear weapons use to develop a strategy combining nuclear and conventional deterrence with missile defense to deter attacks across the entire spectrum, as outlined in the 2018 NPR. As mentioned in the NPR in 2018, it seems that nuclear weapons could be considered in response to “significant non-nuclear strategic attacks” targeting national nuclear command and control systems (NC3), early warning systems, nuclear forces, and civilians in cyberspace and space, which are emerging as factors that could weaken nuclear deterrence. To this end, the Trump administration plans to invest more budget and effort into building the necessary capabilities and systems, as indicated by the “left of launch” operational concept—which involves using advanced

surveillance, reconnaissance, and intercept capabilities to preemptively eliminate enemy missiles—and the ‘Gold Dome.’

Second, the Trump administration is likely to further strengthen the joint planning system for nuclear crises through continued cooperation on the Nuclear Consultative Group (NCG). Concerns were raised that the Trump administration’s approach to extended deterrence might change after President Trump referred to North Korea as a “nuclear power” and flaunted his friendship with North Korean leader Kim Jong-un. The Trump administration has stated that it will continue to strengthen U.S. extended deterrence by emphasizing ties with Asian allies in order to achieve its MAGA goals in the Indo-Pacific region. Defense Secretary Pete Hegseth has also emphasized the role of allies in responding to the real threat posed by China in the Indo-Pacific region. On May 31, 2025 (local time), a delegation from the U.S. House of Representatives and Senate visited the Ministry of National Defense and reaffirmed the U.S.’s defense commitment to South Korea and its intention to provide extended deterrence using all of the U.S. military’s capabilities. At the 4th NCG held in January 2025, South Korea and the U.S. agreed to continue to achieve rapid and substantial progress on the NCG.

The NCG has played an important role in enhancing the credibility of extended deterrence, and it is expected to continue functioning as a mechanism to promote cooperation between South Korea and the United States in response to North Korea’s growing nuclear threat. At the 4th NCG, the ROK and the U.S. evaluated the importance of joint planning in preparation for a nuclear crisis, including nuclear and strategic planning, exercises, simulations, training, strategic communication procedures in times of crisis or similar situations, the establishment of a dedicated secure communication system, and tabletop exercises between military authorities. Amid budget cuts under the Trump administration, the confirmation of the extended deterrence commitment by the U.S. Congress and administration signifies that the second Trump administration has reaffirmed the importance of ROK-U.S. extended deterrence and demonstrated its commitment to the Washington Declaration and the NCG at the policy level.

Third, the current Trump administration’s NPR is expected to maintain the basic direction of the 2022 NPR while allocating more budget to nuclear force modernization and the development of low-yield nuclear weapons. In March 2025, The Washington Post reported that the Department of Defense’s “Interim National Defense Strategic Guidance” presented the core guidelines of focusing on deterring China and defending the U.S. mainland, with allies taking the lead in deterring regional threats such as North Korea. Since the Interim National Defense Strategic Guidance serves as the basis and framework for the NDS and NPR, there are views that it may signal a potential shift in the Trump administration’s nuclear policy toward North Korea. The 2022 NPR issued by the Biden administration maintains the core nuclear policy framework of the 2018 NPR issued by the first Trump administration. The Trump administration’s second-term

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5) Rudolf, Peter. (November 2018). “U.S. Nuclear Deterrence Policy and Its Problems.” German Institute for International and Security Affairs. [https://www.swp-berlin.org/publications/products/research\\_papers/2018RP10\\_rdf.pdf](https://www.swp-berlin.org/publications/products/research_papers/2018RP10_rdf.pdf)

6) Kahn, Herman. (1969). *On Escalation: Metaphors and Scenarios*. Praeger. New York: Frederick A Praeger.

NPR is likely to maintain strategic ambiguity regarding the “single purpose” of nuclear weapons and the “no first use (NFU)” policy to address allies’ concerns about extended deterrence, while sending a clear signal that potential provocative nations cannot gain benefits through limited nuclear escalation through the modernization of U.S. nuclear capabilities.

In January 2025, the United States is estimated to have approximately 3,700 nuclear warheads, of which approximately 1,770 are deployed, and hundreds of those in storage are scheduled to be retired before 2030.<sup>7)</sup>

The modernization of nuclear forces, which began due to the aging of existing nuclear warheads, was a core nuclear policy of the Trump administration during his first term, and it is likely to serve as an opportunity to revitalize the nuclear capabilities necessary to pursue a policy of extended deterrence during his second term. In addition, the 2018 NPR outlined nine capabilities that the nuclear triad must possess in order to threaten targets in Russia, China, and North Korea at all stages of crisis and conflict. The second Trump administration is likely to push even harder for the modernization of nuclear forces in order to achieve capabilities such as survivability, mobility, diversity, accuracy, penetration, responsiveness, diverse ranges, visibility, and redeployment capabilities.

Fourth, the Trump administration is likely to continue developing conventional-nuclear integration (CNI) so that conventional and nuclear forces can be integrated at the strategic, operational, and tactical levels in order to strengthen various options, both conventional and nuclear. Even during the first Trump administration, the United States sought to expand flexible response options by integrating conventional and nuclear forces in order to neutralize the asymmetric interests of potential adversaries such as Russia and North Korea. This was achieved by clearly conveying the message that the United States possesses the capability for effective retaliation even in the event of a limited nuclear conflict. This policy includes a “deterrence by denial” approach, which structurally eliminates the military and political gains that an adversary could achieve through a nuclear attack, rather than relying solely on the threat of punishment for nuclear deterrence.

South Korea also needs to continue developing CNI in order to prevent strategic miscalculations that the U.S. would be unable to respond appropriately even if potential adversaries such as Russia or North Korea carried out small-scale nuclear attacks. The Trump administration is likely to continue its efforts to further concretize the integration of U.S. and allied capabilities in order to apply NATO’s concept of simultaneous conventional and nuclear operations to the Indo-Pacific region. If the North Korean regime under Kim Jong-un considers a limited nuclear attack or a non-nuclear strategic attack on U.S. military bases or specific strategic targets, signaling that the United States possesses decisive retaliatory capabilities could

reduce the likelihood of North Korean miscalculations and contribute to deterring provocative actions.

## Conclusion

Despite the erosion of strategic stability in the 21st century and debates over the credibility of U.S. extended deterrence, the ROK-U.S. extended deterrence has continued to develop in terms of declaratory policy, institutionalization. The Trump administration’s escalation dominance strategy also has several strengths in terms of the ROK-U.S. extended deterrence. First, it can enhance the assurance effect by emphasizing the U.S. extended deterrence commitment in various ways. For allies exposed to nuclear threats, such as South Korea and Japan, the United States can respond to the classic question of “Would the United States risk nuclear war for its allies?” with actual military capabilities and options, thereby enhancing the effectiveness of its extended deterrence commitment. Second, it can provide various means to apply customized deterrence strategies to asymmetric threats, such as Russia’s low-yield nuclear doctrine and North Korea’s limited nuclear strategy. Third, as stated in the 2018 NPR, securing response capabilities across the entire escalation ladder could provide reliable extended deterrence response measures at each stage of crisis.

In fact, the United States’ allies, including South Korea and Japan, generally gave positive assessments of the Trump administration’s nuclear policy, stating that it contributed to strengthening deterrence and enhancing the credibility of extended deterrence. This suggests that the Trump administration’s policy achieved some of its intended effects by providing strategic clarity, thereby reducing security uncertainty among allies and curbing incentives for nuclear proliferation. On the other hand, a strategy that pursues absolute escalation dominance may cause arms race, or provide incentives for preemptive strikes or escalation due to misperceptions in crisis situations, thereby weakening crisis stability. Russia and China have strongly criticized the U.S. for returning to a Cold War mentality with its nuclear policy.<sup>8)</sup> For the sustainable development of extended deterrence between South Korea and the U.S., efforts to complement the advantages and limitations of the escalation dominance strategy must be pursued in parallel.

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7) Kristensen, Hans M. Matt Korda, Eliana Johns and Mackenzie Knight. (2025). “United States Nuclear Weapons, 2025,” *Bulletin of the Atomic Scientists*, Vol. 81, No. 1.

8) Carbone, Christopher. (February 4, 2018). “China Accuses U.S. of Cold War Mentality Over Nuclear Policy,” *Fox News*, <https://www.foxnews.com/world/2018/02/04/china-accuses-us-cold-war-mentality-over-nuclear-policy.html>

# From *K-Bangsan* to Global Top Four: Recent Trends and Future Strategies for the 2030s<sup>1)</sup>

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Amid intensifying geopolitical tensions and what some describe as a New Cold War, the global defense industry is undergoing profound transformation. Defense spending has reached record highs, while disruptive technologies—such as AI, drones, and space systems—are reshaping the nature of modern warfare. At the same time, supply chain resilience has become a critical strategic priority for many countries. Against this backdrop, South Korea’s defense industry—branded as “*K-Bangsan*”—has drawn significant international attention, achieving remarkable export growth and positioning itself as a potential “Arsenal of Democracy.” Nevertheless, structural challenges remain, including a stagnant domestic market, technological gaps, heavy dependence on imported key components, and a rigid acquisition system.

## I. Introduction: Strategic Realignment of the Defense Industry in the New Cold War

① As the world enters the latter half of the 2020s, a new Cold War order is rapidly taking shape. Russia’s invasion of Ukraine, launched in February 2022, has now dragged on for more than three and a half years. Meanwhile, the ongoing conflict between Israel and Hamas, U.S. and Israeli preemptive strikes on Iran’s nuclear facilities, and the intensifying U.S.-China strategic rivalry are all driving a global security environment marked by heightened geopolitical tensions.

In response, major powers are sharply increasing their defense budgets. Global military expenditures have reached record highs year after year. Under the second Trump administration, elected in November 2024, the United States has revived its America First policy, demanding that NATO and Indo-Pacific allies raise defense spending to at least 5% of GDP. As a result, global defense spending is projected to surpass USD 3 trillion in the near future.

Prolonged wars in Europe and the Middle East have also accelerated the integration of civilian advanced technologies—such as artificial intelligence (AI), drones, and space systems—into modern weapon systems. The defense sector is undergoing rapid digitalization, intelligentization, and automation. At the same time, the sustained nature of these conflicts has elevated supply chain resilience and the modernization of the defense industrial base to core national security priorities.

These shifts in the global security and industrial landscape

form the strategic backdrop for Korea’s national defense and defense industry policies. In recent years, Korea’s defense sector—branded as “*K-Bangsan*”—has drawn global attention with remarkable export growth, enhancing its international profile as a potential arsenal of democracy. Nevertheless, structural challenges remain, including stagnant domestic demand, limited innovation in advanced technologies, dependence on imported core components and materials, and a relatively narrow industrial ecosystem.

Against this backdrop, this article examines the position of *K-Bangsan* within the rapidly evolving global defense environment and outlines the key roles and strategic tasks necessary to achieve the Korean government’s goal of becoming one of the world’s top four defense powers.

## II. Three Major Trends in the Global Defense Industry Landscape

### 1. Intensified Global Defense Spending: Military Expenditures Reach Record Highs

One of the most significant developments in today’s global defense industry landscape is the sharp rise in defense budgets driven by growing geopolitical instability. In 2024, global military spending reached an all-time high of USD 2.718 trillion—a 9.4% increase from the previous year.<sup>2)</sup>

In Europe alone, defense expenditures climbed to USD 693 billion in 2024, representing a 17.9% year-on-year increase. The Middle East followed a similar trajectory, with spending reaching USD 243 billion—up 15% from 2023. Particularly notable was the NATO Summit agreement in June 2024, where member states pledged to raise defense budgets to 5% of GDP by 2035. This commitment is likely to usher in a USD

1) This report is a revised and supplemented version of the article titled “Recent Trends and Future Challenges of *K-Bangsan* for Entering the Global Top Four Defense Powers”, which was published in the July 2025 issue of IR Focus: Issues and Analysis.

2) SIPRI, SIPRI Military Expenditure Database, April 2025.

3 trillion era of global defense spending in the near future.

The trend extends well beyond Europe and the Middle East. In the Indo-Pacific, U.S. demands for greater burden-sharing under the second Trump administration are gaining momentum. Countries such as Japan, Australia, and South Korea now face mounting pressure to align with NATO's proposed 5% of GDP benchmark for defense spending.

## 2. Technological Disruption and the Acceleration of Diversified Acquisition Models

Second, the rapid emergence of disruptive technologies—particularly artificial intelligence (AI), drones, and space-based systems—has fundamentally reshaped the character of modern warfare. These technologies are acting as battlefield game changers, driving both diversification and acceleration in weapon acquisition methods.

Modern warfare is now defined by capabilities in AI, drones, space, and cyber technologies. Without them, battlefield visualization and real-time detection-identification-strike cycles are virtually impossible. Ukraine, for example, has expanded its production capacity for loitering munitions and long-range drones to an estimated 4-5 million units annually, a dramatic increase from prewar levels. Space-based assets have become equally critical: commercial satellite services such as Starlink, Iceye, and Maxar now deliver real-time tactical data directly to frontline forces.

In response, major defense powers are moving beyond traditional acquisition models toward approaches designed for the rapid integration of emerging technologies. These include AI-specific acquisition pathways, software procurement, service-based contracting models, and other rapid acquisition mechanisms.

The United States leverages the Defense Innovation Unit's (DIU) Commercial Solutions Opening (CSO) framework to transition fieldable prototypes into operational use within weeks or months. Similarly, Israel's iHLS (Israel Homeland Security) and Ukraine's Brave1 function as advanced acquisition accelerators, enabling next-generation capabilities to reach the battlefield at unprecedented speed.

## 3. Supply Chain Resilience and the Strategic Value of the Defense Industry Ecosystem

The strategic importance of supply chain resilience and the modernization of the defense industrial ecosystem has grown dramatically in recent years. With unprecedented global military build-ups, disruptions in defense supply chains have become a central concern in national security strategies.

The ongoing Russia-Ukraine war has exposed critical shortages of semiconductors, rare earth materials, ammunition, and missile inventories. In response, both the United States and the European Union released national defense industrial strategies in 2024—the National Defense Industrial Strategy (NDIS) and the European Defense Industrial Strategy (EDIS)—placing supply chain resilience at

the top of their policy agendas.

For example, severe shortages in production capacity for ground combat systems in Eastern European countries such as Poland have become a key driver behind the surge in South Korean defense exports, particularly of K2 main battle tanks and K9 self-propelled howitzers.

At the same time, the composition of the defense ecosystem is evolving. Once limited to defense firms, government agencies, and armed services, it now increasingly incorporates advanced civilian technology companies, startups, allied nations, and private financial institutions. This broader ecosystem underscores the growing emphasis on fostering robust networks through support for startups and SMEs, the development of regional defense clusters, the cultivation of skilled talent, and deeper international defense cooperation.

## III. Recent Achievements and Structural Limitations of *K-Bangsan*

In 2023, Korea's defense industry recorded strong performance, with total sales of KRW 23.3 trillion, exports of KRW 4.8 trillion, and an operating profit margin of 8.9%. This success earned the sector recognition as an emerging "Arsenal of Democracy." However, beneath this export-driven growth lie structural challenges that threaten long-term sustainability, including stagnant domestic demand, widening disparities between large and small firms, heavy reliance on imported core materials, limited capabilities in emerging technologies, and a rigid acquisition system.

First, the domestic market remains stagnant. While exports have surged, the share of the national defense budget allocated to force improvement has grown by only 1.2% annually from 2020 to 2025, revealing a disconnect between international sales growth and domestic investment.<sup>3)</sup>

Second, polarization between large defense contractors and SMEs has intensified. In recent years, roughly 80% of total defense sales and over 90% of exports<sup>4)</sup> have been concentrated in a small number of major companies. This imbalance undermines the viability and innovation capacity of mid-tier and small enterprises, which form the backbone of the defense industrial ecosystem.

Third, dependence on foreign core materials and components remains high. Although the localization rate for defense parts reached approximately 82% in 2024, reliance on imported advanced defense materials still stands at 79%. In the case of military-grade semiconductors, imports account for over 99%.<sup>5)</sup> Such dependence reduces supply chain resilience, lengthens lead times for both domestic and export orders, and increases the risk of delivery delays and

3) Ministry of National Defense, Defense White Paper, various editions.

4) delivery basis

5) DAPA, Development Strategy for Defense Semiconductors, *Presentation Materials for the Prosperous Nation and Strong Military Forum*, 2024.

performance shortfalls.

Fourth, Korea lags behind leading nations in critical emerging technologies. Capabilities in AI, software, cyber operations, and drone technologies remain underdeveloped. The application of AI to weapon systems has made little real progress due to regulatory restrictions, limited datasets, and barriers to data sharing. In the drone sector, stringent regulations on large firms, supply chain bottlenecks, and frequent audits have weakened competitiveness—leading some observers to label Korea a “drone underdeveloped nation.”

Fifth, the acquisition system is rigid and outdated. The defense procurement process still follows a traditional, long-cycle “requirements-development-deployment” model that cannot keep pace with rapidly evolving threats and technologies. Although “Rapid Pilot Acquisition Programs” and “Rapid Operational Needs” initiatives have been introduced, they remain largely ineffective due to small budgets and bureaucratic constraints. Crucially, Korea lacks a dedicated innovation-oriented acquisition platform—similar to the U.S. Defense Innovation Unit (DIU) or Israel’s iHLS—that would allow startups and civilian technology firms to meaningfully participate in procurement.

Lastly, the industrial ecosystem remains narrow and overregulated. The sector is still dominated by DAPA, major defense firms, and affiliated R&D institutes, creating high barriers to entry for new participants such as startups and civilian ICT companies. Frequent government audits and a compliance-heavy oversight culture discourage innovation and risk-taking, potentially deterring private investment and undermining the industry’s overall dynamism.

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## IV. Future Strategies for the *K-Bangsan*

The new Lee administration, which took office on June 4, 2025, has declared its vision of transforming South Korea into one of the world’s top four defense powers in the world. To this end, the new government has pledged to strengthen the national defense export control tower, expand investment in AI defense R&D, and enhance the defense ecosystem and regional industrial clusters. In light of the shifting global security and defense industry landscape, three strategic imperatives for *K-Bangsan* are proposed as follows:

### 1. Gradual Increase in Defense Spending and Military Modernization

To enhance the competitiveness of *K-Bangsan* in the new Cold War era, export expansion must be accompanied by a stable domestic market. The recent NATO Summit’s agreement to raise defense spending to 5% of GDP by 2035 offers significant implications for South Korea. In the context of the second Trump administration’s emphasis on allied self-reliance and Korea’s own need to modernize its military with advanced technologies, a phased increase in

defense spending appears inevitable.

South Korea should therefore consider a long-term roadmap to raise its defense budget from 2.6% of GDP, KRW 61.2 trillion in 2025, to 3% by 2027, 3.5% by 2030, and 5% by 2035—including both direct and indirect infrastructure investments. This would enable not only a reduction in dependence on foreign weapons systems but also a proactive response to key priorities, such as: Modernization of Korea’s three-axis deterrence system, Acceleration of digital transformation in defense, Deployment of AI-enabled systems for real-time battlefield visualization, detection, identification, decision-making, and strike, Expansion of joint R&D and co-production of advanced weapon systems with the U.S. and Europe, and Strengthening of MRO (Maintenance, Repair, and Overhaul) support for U.S. Forces Korea (USFK) equipment.

In particular, the digital transformation of national defense includes transitioning to AI-based command and control systems, expanding adoption of autonomous weapon platforms such as drones and robots, and developing big data-driven situational awareness capabilities.

Institutionally, this requires establishing a new “Office of Advanced Defense Capabilities” (tentative name) within the Ministry of National Defense to serve as the national AI command center for defense innovation. In addition, a “Defense Capability Optimization System” should be created to reassess and reprioritize weapon acquisition programs based on evolving domestic and global security conditions—even for programs that have already received approval. For example, the U.S. regularly adjusts procurement plans, such as reducing F-35 orders while increasing unmanned drone acquisition.<sup>6)</sup> Korea should actively consider regulatory reforms to support such flexibility and promote international joint development of weapon systems.

### 2. Establishment of a Korean Rapid Acquisition Framework

A fundamental overhaul of Korea’s defense acquisition system is urgently needed to enable the rapid adoption of advanced technologies like AI, drones, and cyber systems. Major defense powers—including the U.S., Israel, and Ukraine—have already established systems to deliver fieldable prototypes to troops within weeks or months.

Since 2018, the U.S. has implemented six acquisition pathways beyond traditional models, including rapid acquisition (MTA), software acquisition, and service acquisition. The Defense Innovation Unit (DIU) has played a key role through its Commercial Solutions Opening (CSO) program, fostering defense unicorns such as Palantir and Anduril. Israel’s iHLS, launched in 2012, serves as a springboard for defense and homeland security startups to enter global markets: over 30 firms have already expanded into the U.S. and NATO. Similarly, Ukraine launched its

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6) Defense One, June 11, 2025.

Brave1 defense innovation platform in 2023, successfully fielding drones, electronic warfare, and cyber systems within weeks.

In contrast, Korea has introduced the Rapid Pilot Program (2020) and Rapid Operational Needs Program (2023), but they have not met expectations due to insufficient budgets, exclusion of early-stage operational requirements, limited civilian participation, and uncertainty around follow-on procurement.

To address these issues, the Korean government must urgently develop a new acquisition process tailored to the rapid integration of emerging technologies. In addition to enhancing existing rapid acquisition programs, Korea should explore new procedures that allow fast-track adoption of civilian innovations, including those from startups. Such a framework would support a more diverse, agile, and streamlined full-cycle acquisition system for future battlefield needs.

### 3. Expanding the Defense Industry Ecosystem and Ensuring Export Sustainability

The final strategic imperative for *K-Bangsan* is the expansion of South Korea's defense industrial ecosystem and the assurance of long-term export sustainability. Achieving this goal will require a structural transition from a traditionally closed and prime contractor-centered model to a broader and more inclusive framework that integrates a wider range of stakeholders. This transformation should begin by significantly increasing participation from civilian innovation actors, including startups, private technology companies, government-funded research institutes, and corporate R&D centers. At the same time, targeted government support should be directed toward the creation and growth of regional defense clusters that combine capabilities in aerospace, space, and other dual-use industries, in close collaboration with local governments.

Strengthening international cooperation will be equally critical. South Korea should seek to conclude a Republic of Korea-United States Reciprocal Defense Procurement Agreement (RDP-A) to enable mutual market access, deepen defense industrial ties with NATO through cooperative R&D and integrated supply chains, and establish long-term defense cooperation frameworks with key partner countries in Latin America, the Middle East, and Southeast Asia.

To ensure the sustainability of defense exports, Korea must also enhance defense diplomacy with its principal markets, shift from a domestically led to a global demand-driven model of development planning, localize critical supply chains in priority export regions, allocate dedicated budgets for the rapid upgrading of existing export platforms, and establish specialized export channels tailored for SMEs.

Collectively, these measures would enable Korea to expand

joint development, co-production, and co-marketing initiatives with partner nations. A whole-of-government export coordination mechanism, anchored by an expanded presidential-level control tower, along with regulatory reforms to ease restrictions on specialized talent and employment, will be indispensable in securing Korea's position as a global leader in the defense industry.

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