UNCLASSIFIED

CENTER FOR GLOBAL SECURITY RESEARCH

Lawrence Livermore National Laboratory

Strengthening Deterrence in the Indo-Pacific

Workshop Summary

April 30 – May 1, 2025

Lawrence Livermore National Laboratory

LLNL-MI-2007323

Workshop Summary

Strengthening Deterrence in the Indo-Pacific

Center for Global Security Research
Livermore, California, April 30 – May 1, 2025

Prepared By: Daniel Allen, Anthony Blevans, Ross Buchanan,
Maximilian Hoell, Kimberly Peh, and Caroline Wesson[1]

On April 30-May 1, the Center for Global Security Research (CGSR) at Lawrence Livermore National Laboratory (LLNL) hosted a workshop titled "Strengthening Deterrence in the Indo-Pacific." This session brought together participants drawn across the policy, military, and technical communities. The workshop examined the elements of the U.S.-led regional deterrence architecture, the military capabilities and objectives of China and the DPRK, Russia's involvement in the region, and the mix of capabilities required for the U.S. and its allies to deter adversaries in the region.

The discussion was guided by the following key questions:

- Has deterrence eroded? If so, why? And how much so?
- What are the options for strengthening deterrence, technical and otherwise?
- What steps would have the most impact on deterrence over the next 4-5 years?

Key takeaways:

1. Despite more than a decade of improvements to the military postures of the U.S. and its allies in the Indo-Pacific, deterrence has continued to erode. Adversaries have been improving their postures in critical ways and at a speed driven by their leadership's sense of urgency. The risk of direct armed confrontation has risen and along with it nuclear risk.

2. China is of course the pacing threat. It is three decades into a dramatic transformation of its military strategy and posture. Its strategy for countering U.S. power and defeating U.S. power projection is multi-layered and involves attempts to achieve a military fait accompli over Taiwan, to separate U.S. allies from the United States, and to impose significant costs on U.S. power projection and on the United States itself if need be. It has made very

[1] *The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States government or Lawrence Livermore National Security, LLC, and shall not be used for advertising or product endorsement purposes.*

significant progress in bringing together the conventional and strategic capabilities it deems necessary for this task. But some important gaps remain, for example, in lift, logistics, and above all combat experience.

3. While China is the pacing threat, it is not the only threat. North Korea continues to seek to strengthen its coercive leverage, bargaining power, and military preparedness. It prepares for large-scale conflict with improvements to its nuclear arsenal and missile forces and also to its conventional forces and capabilities in cyber space and outer space. It has made substantial progress in the five major strategic weapon tasks set out in the 8th Party Congress in 2021. It is also gaining first-hand combat experience in Ukraine.

4. Russia is re-asserting a role in the region and modernizing and growing it military forces there. Russia is also providing new military and other support to the DPRK. President Putin has also stated an intent to support the DPRK in case of war on the peninsula. He has also deepened cooperation with China to undermine U.S. regional alliances. Deception plays a major role in the strategies of all three countries.

5. U.S. and allied deterrence strategies seek to ensure that any leader contemplating aggression against the United States and/or an ally will judge the rewards to be in serious doubt, the costs to be intolerable, and the risks of nuclear escalation to be real.

6. What acts of aggression are most concerning? That is a function of where one sits. Those who see China as the pacing threat put primary and even sole focus on the Taiwan contingency. Others see aggression by Pyongyang as the more immediate concern. Few are willing to forecast future Russian behaviors in the region.

7. To underwrite deterrence objectives, the U.S. and its allies have assembled a web of capabilities into a regional deterrence architecture. That architecture has many elements. These include the maintenance of credible bilateral security relationships, U.S. provision of extended nuclear deterrence, forward U.S. military presence, partnership with allies in maintaining complementary military capabilities, the capacity to reinforce U.S. military forces in theater from outside the theater, and robust enabling capabilities (e.g., resilience in cyber space and outer space). To shape the strategic level of war, the architecture includes long-range offensive capabilities (both nuclear and non-nuclear), defensive capabilities (both active and passive), and human capital (to map out, anticipate, and prepare for timely and effective decision-making).

8. As the regional deterrence architecture is so comprehensive, efforts to strengthen it have been similarly wide-ranging. At the conventional level of war, these include many technical enhancements and other capability improvements. At the strategic level, these include efforts to integrate regional missile defenses and new deep precision (and non-nuclear) strike systems and to steadily improve both. The United States also contributes modernized theater and strategic nuclear forces to the overall deterrence toolkit. These efforts date back to at least 2009 and have enjoyed strong U.S. domestic political support.

9. But significant gaps remain or are emerging as China and others modernize and adapt their military forces. The eroding balance is evident at the conventional level of war, given the dramatic growth in People's Liberation Army (PLA) forces and their rapidly improving capabilities tailored to create particular dilemmas for the U.S. and its allies and partners.

10. The regional offense-defense balance is particularly disadvantageous to the U.S. and its allies, as adversaries continue to make significant progress in the capabilities for overwhelming the defense. The new U.S. commitment to next-generation missile defense raises many important questions for the region. Will the Golden Dome for America (GDA) ensure U.S. military engagement in crisis and war; or will it enable the United States to retreat from such engagement without penalty? Will it enhance protection of U.S. allies and partners in addition to the United States? What plans exist to implement the part of the GDA Executive Order focused on regional defenses? At this particular moment, there are many more questions than answers. But the push to place more sensors in space can be expected to have benefits for both homeland and regional missile defense. The same is true of the push for directed energy weapons. The development of next generation capabilities will also present many opportunities for joint activity and thus also for burden sharing.

11. Progress by the U.S. and its allies and partners in fielding new deep precision strike capabilities has also been slow relative to the need. These efforts have barely begun to redress the regional imbalance currently favoring potential challengers. Looking to the future, there are many options to accelerate and scale up capability delivery. But the United States remains reluctant to cede to its allies a role in initiating escalation. The United States has also been slow to explore the "solution space" that opened with the demise of the INF treaty. It could get good strategic advantage by embracing a much more robust suite of strike tools.

12. In space, long-standing U.S. strategic advantages are eroding. China has fielded a robust and advanced system to exploit U.S. vulnerabilities there in crisis and war, even as its military and commercial dependence on space grows. But many of the problems confronting the United States are self-inflicted. These include an erosion of the defense industrial base and a failure to fully exploit partnerships with allies and private sector actors. Challenges could be rapidly overcome if the political will to do so were present. There are particular advantages to be had in a "new triad" of cyber, space, and special operations forces.

13. The eroding regional balance is also evident in the nuclear domain. Recall that the Strategic Posture Commission judged the U.S. regional nuclear deterrent to be not fit for purpose and destined to become even less so over the decade ahead. The gaps are both quantitative and qualitative. In the Indo-Pacific, the U.S. practice of extended deterrence depends on a force posture designed in 1991 (when all U.S. nuclear weapons were removed from the region and from naval surface combatants) and 2009 (when the TLAM-N was retired from storage), leaving the United States reliant on strategic systems. For most experts in Japan and South Korea, this posture is inadequate for the new security environment. Some seek a graduated approach to strengthening the U.S. nuclear umbrella. Begin with an effort to make good on the long-standing U.S. policy to be ready to deploy dual-capable fighter-bombers and their weapons into the region in crisis and war. Accelerate to the extent possible the longer-term

solution (SLCM-N). Take an additional medium-term step such as fielding a theater-range missile that is capable of delivering either conventional or nuclear warheads (but in peacetime would be deployed only with conventional warheads). Think of this additional step as a response to comparable Chinese and Russian systems.

14. Experts disagree on where to prioritize investments to get the most deterrence benefit in the medium term. Everyone has a favorite capability or two. But no one seems to have an analytical framework for such comparative analysis. This reflects the fact that the U.S. and its allies and partners have not so far set out a theory of victory across the full conflict continuum for the conflict(s) in which they now find themselves. Such a theory is overdue. It would also have a positive political value in specifying the burdens that must be shared beyond the burdens of defense spending.

15. The U.S. defense strategy review will necessarily consider questions about how the United States should re-balance its investments for deterrence. Allied experts are particularly worried about two potential shifts. One is a potential re-balance of the U.S. deterrence posture so that its sole focus is Taiwan. The ROK and Japan are prepared to carry more of the conventional burden of deterrence vis-à-vis the DPRK but simply cannot replace the United States in all respects (e.g., nuclear). The other is a potential U.S. decision to place its extended deterrence bet on GDA and to terminate efforts to strengthen the U.S. nuclear umbrella. Allied experts perceive a critical and long-standing weakness in that umbrella and a reluctance of the United States to address their concerns. A U.S. decision to stop trying to do so could be the tipping point to nuclearization by one or more U.S. allies and partners, both in and beyond the region. Experts are divided on just how likely is a decision in Seoul to seek nuclear weapons but all agree that it has become more likely.

Panel 1: The Regional Deterrence Architecture

- What are the main elements of that architecture?
- What gaps exist?
- What plans are already in place to fill those gaps? On what timelines?

The main goal of the regional deterrence architecture is to convince adversaries that aggression will not serve their purpose nor end in their favor. To do so, the U.S.-led architecture in the Indo-Pacific region builds on a series of bilateral alliances to maintain a credible deterrent relationship with key allies in the region, namely Australia, Japan, and South Korea. In addition, the architecture sustains a significant U.S. forward presence in the region that signals U.S. commitment to allies and partners, ensures that adversaries must engage U.S. forces in conflicts, and denies adversary advantage at the outset of a conflict. Allies also play a role, complementing and backing up the U.S. forward presence by maintaining their own conventional capabilities and providing reinforcements, so that the United States and its allies are able to sustain superiority over adversaries and prevent the protraction of conflicts. While several elements of the architecture are credible, the regional architecture as a whole is not capable of fully deterring all potential problems that could arise from China and North Korea in the region.

Currently, the U.S. political commitment remains credible to allies due to the bipartisan consensus to focus on the Indo-Pacific region. However, there is a risk of a credibility gap because of historical U.S. ambiguity around the defense of Taiwan and China's growing capabilities, which may render U.S. intervention in the region less credible. Similarly, while the buildup of capabilities among allies is currently sound, Taiwan's lagged development efforts, China and North Korea's proximity to the theater of conflict, and the United States' potential inability to sustain in a prolonged conflict are some challenges that need to be addressed. Most critically, more attention needs to be directed toward challenges posed by China's theater nuclear capabilities and its potential advantage in space. China possesses theater systems with low-yield warheads that can threaten allies and U.S. bases in the region. Yet, the United States has no ability to respond to a nuclear first strike in the region in a flexible and timely fashion. Furthermore, China is already capable of threatening U.S. assets in space and disrupting the United States' ability to send reinforcements to the region.

There is a conventional gap between the United States and its adversaries in the Indo-Pacific region, specifically China, because the United States does not have a secure second strike at the conventional level. To address the conventional gap, one panelist recommended the development of a conventional triad. The logic of the conventional triad follows that of the concept of a secure second strike in the nuclear realm, which aims to urge adversaries to think twice about launching a first strike. At the conventional level, building such capability would entail having more conventional war submarines, bombers, and road mobile missiles launchers—three legs that follow the nuclear triad model. Such a triad would reduce U.S. vulnerability to short-, medium-, and long-range precision strikes and increase the resilience of its C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance), which is critical for warfare. As the United States gradually moves away from embracing limited defense and the second offset and toward thinking about a secure second strike capability, the U.S. and its allies will need to ponder over how to establish a stable conventional equilibrium that is robust to China's first strike advantages and short- to long-range precision strike capabilities.

Participants questioned how to prioritize investments, considering timelines and tight budgetary and resource constraints. However, there were no clear answers because the issue of prioritization and investments rests partly on choices that the U.S. and its allies have to make. For instance, they would need to consider whether to prioritize one conflict over another and whether to maintain conventional superiority against all adversaries or rely on nuclear weapons to compensate for potential inferiority in the case of adversarial collaboration or opportunistic aggression. Relatedly, the question of what to invest would depend in part on whether South Korea and Japan would acquire nuclear weapons and the U.S. position on that issue. Bureaucratic challenges and the bureaucracy's ability to decide on what to deprioritize to make space for the recommended investments would also impact what the United States would invest in and how quickly these developments may proceed.

Overall, there was general recognition among panelists and participants that the regional architecture is not currently capable of facing all problems posed by China and North Korea in the region. To meet these challenges and fill both existing and emerging gaps, open and honest conversations between the U.S. and its allies are crucial. Moreover, additional operational wargaming may be required to fully understand scenarios, including those involving limited nuclear use, to better assess impacts and needs.

Panel 2: North Korea's Maturing Strategic Deterrent

- What does Kim Jong Un seek beyond regime survival, if anything?
- What is the DPRK's military strategy to achieve these objectives?
- What progress has it made in assembling the needed capabilities?

The Kim regime has historically focused on its own survival, which meant the consolidation of political control as well as the establishment of a deterrent force. Having accomplished these goals, the DPRK has now turned its ambition to the international sphere and is undergoing a "strategic reshaping." This includes the creation of a multidimensional threat architecture, deepening of relations with China and Russia, and a newly institutionalized two-state theory that makes reunification with South Korea unlikely. All of these practices serve a common purpose: to undermine the current U.S.-led international order by driving a wedge between the U.S. and its allies and capitalizing on a general shift to a multipolar world.

To achieve this end, the DPRK's military strategy has undergone some changes while continuing to pay homage to older goals. Kim's desire to solidify his family's rule can be seen through the continued concentration of nuclear command, control, and communications (NC3) capabilities, centralizing himself alone in the kill chain and giving him the sole authority to launch nuclear weapons. While the deterrent assures the regime's survival, the current NC3 architecture assures his place within the regime.

Newer doctrines have also begun to emerge as seen through new constitutional doctrines and novel strategic ambitions. Traditional DPRK military strategy depended on surprise warfare, quick-decisive warfare, and combined warfare. Current military strategy is shifting towards conventional-nuclear integration to overcome conventional inferiority to the U.S.-South Korea alliance. In these scenarios, the DPRK would use nuclear weapons to deter and coerce, employing nuclear brinkmanship to constrain the strategic options of the United States and South Korea. It likely learned these lessons by watching the Russians during the early stages of the Russo-Ukraine war. To create a more sophisticated threat architecture, the DPRK has advanced its asymmetric capabilities, including investments in biological and chemical warfare. The DPRK has also deepened its ties with countries like China in strategic coordination for "clamor in the east, attack in the west" tactics that would link the strait and the peninsula. Materially, the DPRK has also integrated itself into the international system through its growing relations with Russia, delivering ballistic missiles and soldiers to the war in Ukraine. In return, the DPRK is receiving battle testing of its systems, as well as potential S&T transfers from Russia.

The capabilities required for the DPRK to achieve its strategic goals are underway on five main fronts. Firstly, Pyongyang is developing a super large nuclear warhead to reinforce strategic deterrence. However, technical gaps remain in its development associated with miniaturization and reentry survivability. There is also uncertainty in yield verification. The development of a super large nuclear warhead will likely be the reason for a 7th test from the DPRK. Secondly, Pyongyang is focusing on improving its intercontinental ballistic missile (ICBM) accuracy within the 15,000km range. Missiles like the Hwasong-18 and HS-18 already demonstrate intercontinental range in excess of 15,000km, however, precision and reentry vehicle survivability are still limited. Thirdly, the DPRK has been developing hypersonic glide vehicles (HGVs) designed to evade missile defenses through unpredictable low-altitude maneuvering. Hwasong-8 and 16Na have demonstrated glide-type vehicles in active testing. Still, given the advanced S&T associated with HGVs, much uncertainty still remains around their operability. Fourthly, the DPRK is advancing its solid-fueled ICBM capabilities, which in turn would allow greater survivability by decreasing launch times. Progress on this front has been consistent, with three-stage separation proven in 2023. Fifthly, the DPRK is working on nuclear-powered submarine and underwater strategic weapons. Currently, it has revealed construction of its nuclear-powered submarine, but due to a lack of reactor and safeguard technology, experts assess another decade before the DPRK can field them.

DPRK's goals of increasing relevance face key challenges. In the short term, the relationship with Russia threatens to weaken if the United States concedes demands in Ukraine, or the war ends. How the DPRK will maintain its integration into the new multipolar world is unclear. Furthermore, though the DPRK has shown strategic coordination with China, Beijing is unlikely to have its core interests threatened, especially as DPRK's increased attention towards developing a stronger deterrent is seen as a burden by the Chinese. Instead, Beijing is more likely to use the DPRK as a tool to disperse U.S. power in the Indo-Pacific. It is also unclear under what conditions the DPRK would actually strike South Korea. It was hypothesized that if the DPRK can provoke South Korea or cause crisis they would, so long as they retain control over the escalation ladder. However, the cost of U.S. intervention is high, and ideally the DPRK would seek to decouple U.S. actions from South Korea to achieve escalation dominance.

In sum, the Kim regime has shifted its focus from mere survival to asserting itself on the international stage through a "strategic reshaping" aimed at undermining the U.S.-led global order and capitalizing on the emerging multipolar world. This involves deepening ties with China and Russia, advancing military capabilities, and institutionalizing doctrines that make reunification with South Korea unlikely. North Korea's military strategy has evolved to integrate conventional and nuclear capabilities, leveraging nuclear brinkmanship to deter and constrain U.S.-South Korean strategic options, while also investing in asymmetric capabilities like bio-chemical warfare and hypersonic glide vehicles. The DPRK is pursuing advancements in five key areas: super large nuclear warheads, improved ICBM accuracy, hypersonic weapons, solid-fueled ICBMs, and nuclear-powered submarines, though technical challenges remain. Despite its growing relevance, North Korea faces uncertainties in sustaining its integration into the multipolar world, particularly as its relationships with Russia and China are shaped by broader geopolitical dynamics. The DPRK's ability to provoke or strike South Korea hinges on its control over escalation, but the risks of U.S. intervention remain a significant constraint.

Panel 3: China's Progress in Modernizing and Adapting its Strategy and Posture

- What is China's military strategy for countering U.S. power and defeating U.S. power projection?
- What progress has China made in building a strong deterrent?
- Is there unfinished business that is essential to China's military success in a conflict over Taiwan?

China's military strategies and deterrent capabilities are evolving in an effort to counter U.S. power, disrupt alliances, and dominate a potential conflict over Taiwan. China employs a layered strategy integrating political, economic, and military tools. A key tactic is weakening U.S. regional alliances through economic coercion, political pressure, and military intimidation, such as targeted attacks on maritime trade and infrastructure. To delay or prevent U.S. military involvement, China highlights U.S. vulnerabilities in cyberspace, space, and limited regional military infrastructure. The ideal Chinese scenario involves achieving rapid military success over Taiwan that forces the United States to contend with a fait accompli before effective intervention is possible.

There have been significant advancements in the modernization of China's conventional forces that may help facilitate this goal, including enhanced precision-strike capabilities with hypersonic missiles and improved capacities in cyber and space warfare. PLA's growing use of artificial intelligence is also a critical future factor. China's expanded nuclear triad, incorporating submarines, silos, and air-launched capabilities, alongside a shift towards launch-on-warning and lower-yield nuclear options, presents new strategic challenges to U.S. deterrence by filling out the escalation ladder of Chinese options and offering new methods of signaling. China's previous strategy for its nuclear forces was marked by a need for concealment to ensure survivability, which will decrease as its arsenal expands and allows the Chinese to engage in nuclear signaling. Additionally, the dual-use DF-26 system poses a unique challenge for the United States, involving a risk of nuclear entanglement that can be mitigated through clear communication and mutual understanding in any retaliatory strikes against these units.

However, substantial gaps remain, particularly in airlift, sealift, logistics, and realistic combat training, which are necessary for an effective invasion of Taiwan. Panelists also highlighted potential weaknesses due to China's highly centralized and politically constrained command structure, which could hinder rapid battlefield responses. Further complicating their military execution, panelists noted potential internal tensions among Chinese theater commands, as each may prioritize resources and supplies for their regions, potentially undermining a cohesive military effort during broader conflicts. It is also unclear as to how much faith President Xi Jinping places in the PLA's assessments of its capabilities and deficiencies, which creates an additional layer of uncertainty.

Non-military measures such as economic sanctions, international coalitions, and demonstrations of cyber and space vulnerabilities were identified as additional deterrents. While China maintains deliberate ambiguity regarding escalation and off-ramps, dangerous misperceptions about mutual military capabilities persist, exacerbated by limited real-world combat experience with advanced systems. Despite this, it was noted that there is a distinct lack of literature in China on off-ramps and de-escalation, which could complicate the efficacy of these options.

The panel stressed China's enhanced capability to pressure Taiwan through blockades utilizing advanced anti-access systems, complicating potential U.S. responses. They emphasized that there is a great deal of focus in Chinese literature on the "chain reaction of warfare," which highlights concerns of opportunistic attacks in other theaters that could present opportunities for leveraging the resource rivalries between regional commands.

While China's military posture and deterrence have significantly advanced, ongoing operational, logistical, and command vulnerabilities present opportunities for U.S. and allied strategies aimed at maintaining regional stability and preventing conflict escalation.

Panel 4: The Russia Factor in the Indo-Pacific

- How important a factor is Russia in the landscape of deterrence challenges for the United States and its allies in the region?
- What is Russia's strategy in the region?
- Is it preparing militarily for a larger regional role?

To evaluate the importance of Russia as a factor in the landscape of deterrence challenges for the United States and its allies in the region, it is necessary to examine both its military capabilities and its strategic partnerships. Russia's military assets include the Ukrainka long-range aviation base in Amur Oblast, which houses the 326th Heavy Bomber Aviation Division. This division is composed of approximately 30 TU-95MS (Bear) bombers. The Russian Ministry of Defense (MOD) is reportedly considering deploying a new TU-160 Blackjack regiment to Ukrainka, partly because Russia is attempting to relocate bombers from Engels Air Base. Some of these bombers are being moved to Belaya Air Base in Irkutsk. Additionally, Russia has five out of eight Borei-class nuclear-armed submarines (SSBNs) deployed with its Pacific Fleet in Rybachii, Kamchatka. The Imperator Aleksandr III joined the Pacific Fleet in September 2024. This submarine is armed with 16 SS-N-32 Bulava submarine-launched ballistic missiles (SLBMs), each capable of carrying up to six warheads.

Russia is also providing assistance to China. In 2019, President Putin stated, "We are now helping our Chinese partners to create a missile warning system, a missile attack warning system." There are also suggestions that Russia might assist China in acquiring the fissile material required to achieve its goal of deploying over 1,000 nuclear warheads. Furthermore, the region has witnessed joint patrols conducted by Russian and Chinese strategic bombers. Regular joint patrols between Russian TU-95MS bombers and Chinese H6K bombers began in 2019. In November 2022, these patrols used each other's air bases for the first time, departing Ukrainka and landing at Zhejiang Air Base. Russia's motivation for deepening ties with China appears to be driven by the desire to avoid a repeat of Cold War history, specifically ensuring that the United States does not succeed in driving a wedge between China and Russia.

Russia has also been cooperating with the DPRK and implicitly acknowledging its nuclear status. In March 2024, Russia vetoed the mandate of the UN Panel of Experts. There are indications that the DPRK may be benefiting from data on the performance of its ballistic missiles used in Ukraine. Russia may also be assisting the DPRK with its air defense systems, ICBMs, and SLBMs. It is worth noting that the 2024 Comprehensive Strategic Partnership agreement between the DPRK and Russia includes provisions for cooperation on civilian nuclear energy.

Russian strategy in the Indo-Pacific appears less aggressive than its actions in Europe. Russia seems territorially satisfied in East Asia, although some Russian nationalists harbor aspirations regarding Hokkaido. However, this idea has not gained traction among Russia's political or military elite. Furthermore, there is an absence of "compatriots" in the region. Russia often justifies its geopolitical actions by claiming to defend the interests of "compatriots"—individuals who are ethnically or culturally close to Russia but are not Russian citizens. In the Indo-Pacific, Russia seems focused on revising the regional status quo by "breaking the spokes" of alliances. For instance, Russian officials have referred to U.S. allies in the region as "vassals" (Patrushev) and have expressed a desire to weaken these alliances. As the Russian official Sergey Naryshkin has stated, "In my opinion, Japan should be a neutral country." Russia opposes the deployment of U.S. intermediate-range missiles to Japan and Japan's growing ties with NATO, the QUAD, and the Free and Open Indo-Pacific (FOIP). It is actively attempting to mobilize public opinion in Japan against these alliances. At the same time, Russia may tolerate increased South Korean and Japanese military capabilities if these developments lead to greater autonomy from alliance relationships.

In November 2024, Russia updated its nuclear doctrine. The revised doctrine reserves the right to use nuclear weapons in response to conventional attacks that pose a "critical threat" to the "sovereignty and territorial integrity" of Russia and Belarus. Previously, Russia's nuclear use policy was limited to threats to "the very existence of the state." This change introduces a lower threshold for nuclear use and greater ambiguity, raising questions about its application to regions like Crimea and beyond. The updated doctrine is likely a response to the United States permitting Ukraine to launch deep strikes within Russian territory.

A longstanding feature of Soviet and Russian military thinking, the Bastion strategy employs multi-layered defenses to prevent opposing forces from accessing the Sea of Okhotsk. Since 2016, Russia has strengthened its A2AD (anti-access/area denial) capabilities in the region.

Despite rhetoric suggesting expansive ambitions, Russia's military capabilities in the Indo-Pacific remain limited. For example, in April 2023, Putin told Chinese Defense Minister Li Shangfu that "the forces of the [Pacific] fleet... can certainly be used in conflicts in any direction." This statement may have been a reference to Taiwan. Russia has also been deepening its cooperation with Myanmar, including in civilian nuclear technology. In April 2025, Russia requested permission to base long-range aircraft at Manuhua Air Force Base in Indonesia. TU-95 bombers previously visited this base in

2017. However, Russian capabilities are likely too constrained to match its rhetoric. In the coming years, Russia will likely prioritize land forces, while naval modernization efforts focus on the Black Sea rather than the Pacific Fleet.

It is also doubtful whether Russia would play an active role in a Taiwan or Korea crisis. Russia's preference would likely be to remain as uninvolved as possible, formally presenting itself as neutral while leaning toward the Chinese side. However, China holds significant leverage over Russia due to Russia's growing dependence on China. If Russia decided against assisting China in a crisis, Beijing might demand more support, such as access to Russian airspace. Moscow would likely be unable to refuse. China's leverage over Russia is primarily economic, as the Russian economy has become heavily reliant on Chinese demand and supply. While China has used economic coercion against other countries, it has not yet employed this tactic against Russia. Nevertheless, economic dependence can be a double-edged sword, potentially leveraged against adversaries or even partners.

Panel 5: Deterring North Korea

- What behaviors of North Korea do the United States and its allies seek to deter?
- What progress have they made in adapting and strengthening the regional deterrence architecture toward that end?
- What more needs to be done?

The primary goal of the United States must be to deter North Korea's nuclear use, and its confidence in an ability to engage in a limited conflict. While the DPRK's growing confidence due to a strategic deterrent is not new, Pyongyang's strategic integration with countries like Russia and China is becoming a growing threat. Russia is providing assistance across a variety of domains to the DPRK including space launch vehicles (SLVs), anti-air technology, and drones. The DPRK's own advancements in ISR (intelligence, surveillance, and reconnaissance) are also pressuring South Korea. Any efforts to peel Russia away from the DPRK are likely futile until the war in Ukraine concludes. A deepening alliance has also caused concerns over strategic entanglements. Resolve is unknown in a scenario where the United States contends with Russian and North Korean nuclear weapons to protect its allies. The chance that this might occur is low, but nonetheless it complicates strategic calculations, and this ambiguity aids the DPRK. While these remain the central deterrence goals, numerous other behaviors out of the DPRK such as its cyber theft operations, missile tests, and conventional operations are also seen as needing containment—though these fall under the broader category of limiting North Korean confidence. In sum, the United States must deter DPRK's confidence in an ability to win in a limited war or in its ability to call upon partners in a wider conflict.

Efforts of changing the DPRK's behavior of provocation and nuclear proliferation were seen as unlikely to yield success, though some hope remained in the unpredictability of the current U.S. administration to bring concessions. However, this likely relies on DPRK's own assessment of risk. To this end, there has been significant progress, with U.S.-led regional deterrence being characterized as stronger and more visible than any time since the Cold War. Alliance integration has progressed, and while trilateral cooperation has historically lacked, it has shown resilience in the face of domestic political transitions. Parties have made commitments towards increased air defense drills, anti-submarine exercises, and escort practices. There have also been trilateral shared warning systems and Tabletop Exercises (TTXs) explicitly focused on a DPRK nuclear scenario. The standing up of Japan's Joint Operational Command has also emphasized the importance placed on interoperability. There have also been extended deterrence dialogues on the ministerial level. Materially, higher profile forces (B-52s) are being seen in Japanese joint exercises, and the United States has deployed more strategic capabilities in and around the peninsula.

Three possible paths forward were outlined to strengthen deterrence. The first path seeks to build incrementally upon existing programs and efforts. This would include continued deepening of exercises and consultations, with periodic U.S. strategic demonstrations of commitments. This path would in the long term develop infrastructure across the region, expand reconnaissance and conventional strike options while encouraging allies to do the same. The second path forward offered engaging directly with the nuclear deployment debates. Given the United States' clear ability to destroy the DPRK, the question comes down to commitment. Some argue that the solution could be an indigenous capability fielded by South Korea, while a smaller contingency argues for the deployment of U.S. weapons on the peninsula. Considering the taboo nature of this topic, however, the thinking on it has not been extensive. Concerns were expressed over allied reactions such as Japan's, with some arguing that it might cause concern over U.S. commitments to its allies, while others emphasized that Japan was unlikely to follow South Korea in acquiring a native deterrent. A third path forward offered a middle ground between these two solutions: committing to future deployments of U.S. weapons at an indeterminate time and creating a detailed process to show seriousness of intent and communicate resolve. However, this solution is more dependent on domestic politics, and some argue that this solution comes too late as South Korea might see the deterrence problem as not one directly solvable by the United States.

In sum, the United States must prioritize deterring North Korea's confidence in nuclear use and in its ability to engage in limited conflict, especially as Pyongyang deepens its strategic ties with Russia and China. Russia's support for North Korea in areas like anti-air technology, drones, and ISR capabilities heightens regional tensions, complicating U.S. strategic calculations. Efforts to isolate Russia from the DPRK are unlikely until the Ukraine conflict ends, while the growing alliance raises concerns about nuclear entanglements involving U.S. allies. Although North Korea's provocations, such as cyber theft and missile tests, require containment, the broader focus remains on limiting its confidence in winning a limited war or leveraging allies in a wider conflict. Regional deterrence has strengthened significantly, with enhanced trilateral cooperation, joint exercises, shared warning systems, and strategic deployments like B-52 bombers. Three paths forward for deterrence measures include incremental development of existing programs, engaging in nuclear deployment debates, or committing to future U.S. weapon deployments with detailed plans to demonstrate resolve. However, domestic politics and allied reactions, particularly from South Korea and Japan, complicate these approaches, leaving uncertainty about the optimal path for ensuring deterrence and regional stability.

Panel 6: Deterring China

- What behaviors of China do the United States and its allies and partners seek to deter?
- What progress have they made in adapting and strengthening the regional deterrence architecture for this purpose?
- What more needs to be done?

This panel addressed the dangerous behaviors by China that the United States and its allies aim to deter, evaluated the current regional deterrence posture, and discussed further necessary measures to strengthen regional security. A key behavior that the U.S. and its allies seek to deter is China's potential use of force to alter the status quo across the Taiwan Strait. Panelists emphasized that a Taiwan contingency would have significant global economic implications, severely affecting trade and leading to substantial increases in transportation and insurance costs. Beyond military confrontation, China's potential tactics include massive cyberattacks targeting Taiwanese energy and financial systems, and a comprehensive naval blockade that could severely threaten Taiwan's autonomy and economic stability. Additionally, the threat of using tactical nuclear weapons, particularly at sea, was highlighted as a critical scenario requiring preparation.

The panelists pointed out significant progress in adapting and strengthening the regional deterrence architecture. Specifically, Japan and Australia have strengthened their basing agreements and expanded their military infrastructure. Strategic groupings, such as the Quad (comprising Australia, India, Japan, and the United States), AUKUS (comprising Australia, the United Kingdom, and the United States), and trilateral dialogues involving Japan and South Korea, are becoming integral to reinforcing collective security. Japan has notably increased its defense spending, introduced offensive capabilities such as intermediate-range and hypersonic missiles, and altered its constitutional interpretations to allow more robust military operations, including offensive actions in coordination with the United States.

However, the panelists identified several areas needing further attention. One key recommendation was to refine the rhetoric around Taiwan, clarifying and emphasizing its strategic importance explicitly while rejecting Beijing's narrative of asymmetric interests. Taiwan's geographic and economic significance was reiterated as crucial to U.S. national security and the global economy, suggesting a need for more transparent public communication of these stakes.

The United States also needs to diversify and strengthen its military posture throughout the region, particularly in Japan, South Korea, Australia, and the Philippines. The panelists advocated increased investment in conventional capabilities, including unmanned systems, enhanced passive defenses such as infrastructure hardening and civil defense preparedness, and significantly boosting regional production capacities through co-production and co-development initiatives among allies. Panelists discussed the urgency of improving allied industrial collaboration, particularly in shipbuilding and resilient supply chains, to bridge the existing production gaps compared to China's rapid military expansion.

Regarding nuclear deterrence, panelists expressed the necessity for Japan to revisit its long-standing policy prohibiting the stationing of nuclear weapons on its soil. They argued for initiating a domestic and public debate about adjusting this policy to ensure credible deterrence against potential Chinese nuclear threats. Improved nuclear engagement among the United States, Japan, and South Korea that includes trilateral exercises and simulation is critical for strengthening collective nuclear deterrence.

Economic resilience to Chinese coercion was also discussed extensively. Panelists emphasized Japan's need to withstand economic pressure and advocated for continued economic diversification, notably highlighting Taiwan's ongoing efforts to shift its economic dependencies away from China toward Southeast Asia. This strategy could reduce vulnerabilities to potential Chinese economic retaliation.

The panel underscored the importance of unity among Indo-Pacific and Western allies for deterring China. Collective deterrence, backed by robust defense budgets and cohesive alliance politics, is essential. The panel warned that any perceived weakness or fragmentation among allies could inadvertently embolden Chinese aggression, and therefore, maintaining strong, integrated, and clearly communicated deterrence strategies is paramount for regional stability.

Panel 7: Missile Defense and Regional Deterrence

- What are the benefits of the proposed Iron (Golden) Dome for America for deterrence in the Indo-Pacific?
- What are the benefits of improved protection of U.S. allies from missile attack for regional deterrence?
- What technical options exist? How should we rate their benefits, costs, and risks?

The U.S. homeland is fairly vulnerable to missile attacks. Missile defense of the continental U.S. currently relies on 44 ground-based interceptors based in California and Alaska, which are designed for mid-course interception of ICBMs approaching the United States over the Pacific Ocean. This system may be enough to protect the continental U.S. against a few ICBMs launched from North Korea, but little else. It would be easily overwhelmed by a larger ICBM attack, it cannot intercept missiles approaching the United States from directions other than the Pacific Ocean, and it cannot intercept munitions other than ICBMs capable of hitting the United States (e.g., cruise missiles, hypersonic glide vehicles, and long-range attack drones). The existing missile defense system would not provide meaningful protection against a large-scale attack from China or Russia, and its effectiveness against a North Korean attack is increasingly in doubt due to the country's growing ICBM capabilities. Because of these limitations, this system probably does not affect deterrence.

U.S. regional missile defense capabilities in the Indo-Pacific are more robust than they are for the homeland. The United States has significant stockpiles of THAAD, Patriot, SM-3, and SM-6 interceptors, which serve a regional missile defense role. These systems are reasonably robust and could probably protect key military assets long enough for the United States to attack the point of origin of incoming missiles. These defenses are far from impenetrable, however, as a large attack would quickly deplete the supply of interceptors. They would also have trouble shooting down hypersonic glide vehicles.

While the proposed Golden Dome program is not yet well defined, it has the potential to strengthen U.S. missile defense capabilities both regionally and globally. The system will presumably consist of large constellations of space-based sensors and space-based interceptors. It may also eventually incorporate directed energy weapons, though these technologies are unlikely to be mature for many years.

If Golden Dome does indeed improve U.S. global and regional missile defense capabilities, it would have two major strategic benefits. First it would improve deterrence against near-peer adversaries like China. China may choose to launch a first strike against strategically important U.S. targets in the Pacific (e.g., Guam) if it felt that such a strike would likely cripple the United States' ability to conduct operations in the region to respond to Chinese aggression. Enhancing regional U.S. missile defense capabilities would make a first strike against key U.S. strategic infrastructure less likely to succeed and may therefore dissuade China from attempting such an attack. The second benefit is it would reassure allies that U.S. defense commitments are sufficiently credible and that they do not need to develop indigenous nuclear weapons to protect themselves. Without robust missile defense, U.S. allies may fear that an adversary could dissuade the United States from intervening by holding targets in the U.S. homeland at risk. Stronger missile defense of the U.S. homeland would make this scenario less likely.

A major point of discussion throughout this session focused on the likely technical capabilities and limitations of Golden Dome. The system's space-based interceptors will likely be designed for mid-course interception of ICBMs. They may also be able to intercept ICBMs during their assent phase. The system's space-based sensor network may allow for better tracking of inbound hypersonic glide vehicles, which could enable interception by ground-based systems. Space-based interceptors would likely be ineffective against targets other than long-range ballistic missiles, such as attack drones, cruise missiles, short-range ballistic missiles, and hypersonic glide vehicles—all of which fly too low to be intercepted by a space-based missile. To be effective against relatively low-altitude targets, Golden Dome would need to incorporate interceptors based on the ground or on aerial platforms.

To bolster missile defense, one of the panelists advocated for a substantial investment in directed energy weapons over at least the next decade as part of the Golden Dome program. They argued that directed energy weapons would offset several of the primary weaknesses of missile-based interception systems, such as the high cost of interceptor missiles and magazine depth limitations. The question of how much the Golden Dome system will cost was discussed throughout the session. The lower threshold of the discussed cost estimates was in the $25 to $50 billion range, which would be under 10% of the cost estimates for the satellite-based anti-missile systems considered during the Cold War. Some participants suggested that the cost would more likely be hundreds of billions of dollars. One reason for this uncertainty is that the system's costs are sensitive to adversary capabilities that are likely to change. For instance, one participant stated that adversaries decreasing the boost time of their ICBMs by a few minutes would increase the number of space-based missiles needed for a successful interception by thousands. A second driver of this uncertainty is that key attributes of the Golden Dome system itself remain unknown. How often the system's space-based sensors and interceptors would need to be replaced is unclear, for example, and would have a profound impact on the system's cost over time.

Panel 8: The Role of Deep Precision Strike

- What are the regional deterrence benefits of advanced non-nuclear strike systems fielded by the United States? By allies and partners?
- What steps have already been taken by Japan, the ROK, and Australia?
- What technical options exist to improve these capabilities? How should we rate their different benefits, costs, and risks?

The role of deep precision strikes in the Indo-Pacific has grown, and advanced non-nuclear strike systems are seen as valuable given their inherently increased survivability due to their distance from adversaries, as well as their ability to strike past an enemy's denial zone. Because of these capabilities, deep precision strike capabilities might deter enemy aggression preemptively. Though traditionally deep precision strike capabilities have been thought of in terms of ATACMs and Stormshadows, the Indo-Pacific should be more focused on anti-ship capabilities to counter amphibious operations against its main regional adversary, China. Though the United States is likely to lose the salvo competition with China over the next 10 years, deep precision strike capabilities can allow the United States to focus on China's "weakest links" including air force enablers on the ground and its naval forces and effectively achieve victory in a Taiwan invasion scenario.

While the United States is poised materially to carry out deep precision strikes, it will require allied cooperation to become operational due to the range limits (3000 km) of these capabilities. Conversely, U.S. allies often have limited ability to carry out such strikes but are geographically stationed to do so. There is a broad range of potential capabilities including subsonic cruise missiles, hypersonic cruise missiles, and ballistics. Japan has also launched a five-year development plan focused on anti-ship precision strike capabilities, though current capabilities focus on a defensive role for aerial evacuations and refueling in anticipation to damage to fuel sites.

From a more offensive perspective, Japan could also focus on developing more dedicated anti-runway weapons (in essence cluster munitions), though overcoming treaty difficulties might prove challenging. Australia has some deep precision strike capabilities but is limited in stockpile. Given the capability for deep strike precision weapons to hit strategic targets, managing potential escalation will be crucial. Here, increased cooperation between South Korea, Japan, and the United States will be necessary to maintain real-time cooperation for joint targeting coordination.

There was a robust debate over how these deep precision strike capabilities should be used. High end deep precision strike capabilities have increased accuracy and destructive capabilities but are inherently limited in supply. Generally, an increased focus on production capabilities (especially of low-cost munitions), as well as interoperability between allied forces was seen as a way to increase the stockpile for allied forces. From a strategic point of view, however, the use of these stockpiles comes down to targeting methodology and will depend on allied confidence in winning quickly, or needing these capabilities for a longer, protracted conflict. Specific targeting priorities were also unclear, with domain-shaping facilities (such as data centers for the information environment) emerging as contested priorities. There was broad consensus however that more advanced deep strike precision capabilities should be used to hit critical infrastructure such as communications facilities, and large, special mission aircraft (like an AWACS), which are generally found in hardened facilities.

Where capability gaps emerge (such as with Japan), the importance of inter-alliance learning was stressed. Though Japan will have to rely on U.S. ISR and targeting support for the next 5-10 years, it can learn from the U.S.-South Korea alliance's interoperability structure. More generally, Japan's slow procurement pipeline and overall inflexibility (such as developing drone technologies and other capabilities inspired by Ukrainian advancements) was also critiqued as a potential hinderance to alliance readiness.

The panel's bottom line was simple: more is better. Today's environment is fundamentally different from three decades ago. While in the past we only had to stop the DPRK, today we must contend with a Russian and Chinese threat simultaneously. The Indo-Pacific alliance will require more information sharing, deeper relationships, more advanced strike capabilities, and larger stores of cheaper munitions with increased production capacity. Beyond this, however, much was left unclear. The U.S. role in carrying the lion's share of the material capability was emphasized, but the unique role that different allies would play in an actual conflict was left to debate. How and what would be targeted (beyond naval vessels and unspecific ground targets) was not resolved, nor the hurdles that allies like Japan would have to overcome to achieve increased readiness.

Panel 9: Other Non-Nuclear Tools in the Deterrence Toolkit

- At the conventional level, have the United States and its allies and partners been able to maintain a favorable balance? What should be done?
- Are cyber space and outer space places where deterrence benefits can be had?
- What does resilience in those domains contribute to deterrence?

This session detailed the evolving nature of deterrence and the tools available in the modern geopolitical landscape. While the goals of deterrence remain the same today as in the past, the question of what constitutes an effective deterrence toolkit is timely. This is especially true as new domains of competition emerge, and new adversaries rise and improve their capabilities. The discussion explored a wide variety of non-nuclear tools for deterrence and emphasized the continued importance of conventional capabilities. While the United States and its allies have historically maintained a favorable balance in conventional military power, adversaries like Russia and China have made significant investments in their own capabilities. Investments discussed included advancements in information and influence operations, maritime capabilities, and space technologies.

A new strategic triad has emerged, comprising cyber, space, and special operations forces. Each component brings unique capabilities—offensive, defensive, reconnaissance, and more—but their true strength lies in integration. For example, cyber operations can set conditions for special forces missions, while space capabilities can enable both cyber and special operations. The recombination of these elements offers a range of options that are greater than the sum of their parts.

Space as a dual-use domain has profound strategic implications. Much of the group's discussion focused on this domain. Space capabilities are increasingly decisive in conventional warfare. Hybrid architectures that combine commercial and government satellites in various orbits enhance resilience and redundancy, making it harder for adversaries to blind or disable systems. Responsive space capabilities—rapidly replacing damaged satellites—are also critical, particularly in collaboration with allies. Points of discussion focused heavily on China's ambitious objectives in space, aiming to secure dominance and leverage its advantages for terrestrial challenges. Given this, discussions of the United States and allies' response to this were a focus. Production issues in the space domain remain a barrier for the West. Political will and industrial capacity are lagging, preventing necessary progress. Meanwhile, China has adopted a wartime production mindset, prioritizing rapid development and deployment of capabilities, while the West remains stuck in a peacetime perspective, often failing to work collectively and share resources effectively.

Information warfare and cyber operations are another area the group actively discussed. It was noted that adversaries have excelled, using these tools to sow discord among allies and undermine collective efforts. The U.S. and allies have largely been reactive in this domain, responding to adversaries' actions rather than proactively shaping narratives. Cyber tools offer advantages through speed and precision. Yet, its deterrence value is often underappreciated. Participants argued that offensive cyber operations have been seen as escalatory, but there is potential to use them more effectively as deterrents. Demonstrating these capabilities could help adversaries better understand their impact and deter undesirable actions.

One of the recurring themes of the discussion was the need for smarter spending and deeper collaboration among allies and partners. The U.S. strategic advantage lies in its network of partnerships, creating a need to foster collective problem-solving and capability-sharing. Defense budgets of allies are rising, but governments need to justify these investments with clear strategic reasoning. Collaboration among allies not only enhances redundancy and resilience but also enables access to capabilities that may not exist within individual governments. Attendees also agreed that the commercial sector, with its iterative cycles, risk acceptance, and speed of capability acquisition, offers valuable lessons that could be leveraged globally.

The discussion of allies highlighted several challenges in collaboration and integration, particularly in the context of public-private partnerships and multilateral engagements. While the private sector has been a willing participant in many cases, there are instances where commercial interests diverge from government priorities. Legislative mechanisms, such as those under defense acts, could help align private sector capabilities with national security needs, but these take time to implement in democracies. Bureaucratic barriers to information sharing also persist, though there are signs of improvement.

Budgetary constraints were highlighted as being a particularly large barrier, especially as China continues to prioritize strategic areas despite economic challenges. While the Chinese economy faces uncertainties, its investments in space, biotechnology, and other critical domains remain steady. China's ability to achieve significant results with relatively low investment is a point of concern, highlighting the need for the United States and its allies to improve efficiency and return on investment.

Ultimately this session underscored the complexity of modern deterrence, which spans conventional, non-nuclear, and non-kinetic domains. Space, cyber, and information warfare are increasingly central to strategic competition, offering both opportunities and challenges. Collaboration among allies, leveraging the commercial sector, and improving efficiency are critical to maintaining strategic advantages. At the same time, there is a need to think creatively about problems and solutions, integrating new technologies and capabilities to deliver potent effects. As the global balance of power continues to shift, the ability to adapt and innovate will be key to effective deterrence.

Panel 10: The Nuclear Foundation

- What are the roles of the strategic and theater nuclear forces in the regional deterrence architecture?
- What adaptations to U.S. strategic forces are needed to support regional deterrence? And what adaptations to its non-strategic forces?
- What technical options exist? How should we rate their benefits, costs, and risks?

The United States' capacity to use nuclear weapons to defend its allies in the Indo-Pacific is essential for protecting allied countries from nuclear attack and from being blackmailed by the threat of nuclear attack. Without the U.S. nuclear umbrella, allies would likely choose to develop indigenous nuclear capabilities to protect themselves from nuclear coercion. Despite the foundational importance of U.S. nuclear capabilities for alliance security in the region, the United States and its Indo-Pacific allies have avoided explicitly discussing the role of nuclear weapons in the alliance structure since the United States withdrew its nuclear weapons from the region at the end of the Cold War. In recent years, however, allies have become increasingly interested in nuclear deterrence as China and North Korea have become more threatening. Discussion and cooperation between the U.S. and its allies over nuclear deterrence is now constrained by the lack of mechanisms for facilitating dialogue on the subject.

It is unclear how many nuclear weapons are necessary to deter China and North Korea, but there was wide agreement among the participants that the current number of deployed weapons is probably not enough. One of the participants explained why they think the current U.S. nuclear posture is insufficient while also acknowledging that deterrence depends on Chinese and North Korean perceptions, which are inherently difficult for us to ascertain. The participant pointed out that the number of militarily significant targets in China and North Korea is quite large and that the United States would have significant difficulties attacking many of these targets without nuclear capabilities deployed in the region. American strategic bomber aircraft would have difficulty maintaining a high tempo of operations from bases in the United States, and attacking mobile targets with U.S.-based weapons would be extremely difficult.

The United States has several options for increasing the overall number of deployed nuclear weapons with its existing legacy systems. It can reopen the dormant ballistic missile tubes on Ohio-class submarines, and it can re-attach multiple warheads to its existing land-based ballistic missiles. The United States could also deploy nuclear capable aircraft to bases in the Indo-Pacific. The main gap in existing U.S. nuclear capabilities is its inability to employ tactical nuclear weapons—i.e., relatively low-yield nuclear weapons against mobile targets—in the Indo-Pacific. The United States has two types of low-yield nuclear weapons on long-range platforms it could launch from outside the region: a small quantity of W76-2 warheads on submarine-launched ballistic missiles, and a larger stockpile of W80 warheads on air-launched cruise missiles based in the continental U.S. However, these systems were not designed to hit moving targets. The United States will acquire a true tactical nuclear capability when the new submarine-launched nuclear cruise missile (SLCM-N) comes online in the 2030's. However, if the SLCM-N is carried only on dedicated nuclear-armed submarines (SSBNs), there will be a low practical limit to how many can be deployed to the Indo-Pacific.

The United States has several ways in which it could further increase the number of tactical nuclear weapons available for use in the Indo-Pacific. Each has drawbacks that the United States (and its allies) would need to weigh. One option is that the United States redeploy B61 gravity bombs from Europe to the Indo-Pacific. This option has the disadvantage of weakening nuclear deterrence in Europe. The B61's inability to strike targets at standoff distances also makes it poorly suited for the Indo-Pacific, where operating over long distances is essential. A second option is to base ground-launched or other air-launched nuclear weapons in the region. This would require agreements with allies, and any agreement would need to navigate around allied domestic political obstacles. A third option is for the United States to deploy nuclear weapons on its attack submarines (SSNs) or surface ships as it did during the Cold War. This would require conventionally armed ships to take on the added burdens associated with securely carrying nuclear weapons.

This session also touched on how allies could strengthen nuclear deterrence in the region without possessing their own nuclear weapons. The most detailed suggestion from this discussion was for the U.S. and its allies to conduct joint strategic bomber missions, where allies would support U.S. bomber aircraft with in-air refueling, fighter escorts, and possibly other resources. Such missions would have multiple benefits, such as helping to better distribute the resource costs of strategic bomber missions between the U.S. and its allies. They would also be a catalyst for better interoperability between the United States and allied forces.

Panel 11: Thinking about the "Appropriate Mix"

- Do the United States and its allies have the required mix of capabilities for deterrence and defense? That is, do they have the full needed set in the needed quantities?
- Where can the United States and its allies and partners get the most rapid return on investments for deterrence?

Panelists examined whether the United States and its allies currently possess the necessary mix and quantity of capabilities for deterrence and defense, with a focus on scenarios involving China, Taiwan, and the DPRK. The consensus among speakers was that present capabilities are insufficient. Critical areas requiring enhancement include conventional forces, cyber and electromagnetic capabilities, mine-sweeping operations, missile defense, and unmanned systems. These are essential for deterring Chinese aggression against Taiwan, specifically against amphibious assaults and naval blockades, and for deterring attacks on regional allies like Japan. Cyber and electromagnetic capabilities were highlighted as critical elements in disrupting Chinese command and control, thus influencing escalation dynamics.

Japan faces two significant challenges in addressing its deterrence capabilities. Firstly, its conventional forces remain inadequate to counter China's overwhelming strength. While Japan plans to acquire substantial numbers of Tomahawk missiles and other capabilities, the specifics of these plans remain unclear. Secondly, Japan's traditional non-nuclear stance complicates responses to potential Chinese nuclear threats. Discussions around revising Japan's "three non-nuclear principles" (no production, possession, or introduction of nuclear weapons) surfaced, but implementing NATO-style nuclear-sharing remains politically challenging.

For South Korea, concerns primarily revolve around the credibility and robustness of extended U.S. deterrence amid advancing DPRK capabilities. South Korea faces limitations in its independent missile defense and ISR capabilities. The evolving DPRK-Russian partnership also heightens the strategic complexity, requiring more robust and credible deterrent measures.

To achieve rapid returns on deterrence investments, panelists suggested multiple approaches. Strengthening nuclear deterrence through clearer U.S. commitments and potential regional nuclear-sharing arrangements was discussed by the participants. Enhancing conventional deterrence via improved missile defense systems, UAVs, cyber capabilities, and bolstered logistical sustainability was also deemed necessary. Panelists also stressed the importance of continuity and stability in U.S. deterrence signaling to avoid emboldening adversaries.

Integrating Indo-Pacific and European theaters through logistics and munition supply chains was identified as a vital strategic step. The importance of joint military exercises and coordinated industrial production among allies was underscored, highlighting a need for resilient, agile, and scalable responses in the face of potential simultaneous threats.

Lastly, a gradual and realistic approach to enhancing nuclear deterrence was debated, including the deployment of intermediate-range, dual-capable systems like an "allied DF-26," which could significantly strengthen deterrence credibility in the region before the deployment of the SLCM-N. However, political feasibility and budget constraints were acknowledged as potential hurdles. There is a significant consensus on the need for substantial investment and coordinated efforts among the United States and its regional allies. Addressing these areas rapidly and effectively will be critical in strengthening deterrence across the Indo-Pacific region.