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Integrated Deterrence with Allies and Partners

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About the Defense Program

Over the past 15 years, CNAS has defined the future of U.S. defense strategy. Building on this legacy, the CNAS Defense Program team continues to develop high-level concepts and concrete recommendations to ensure U.S. military preeminence into the future and to reverse the erosion of U.S. military advantages vis-à-vis China and, to a lesser extent, Russia. Specific areas of study include concentrating on great-power competition, developing a force structure and innovative operational concepts adapted for this more challenging era, and making hard choices to effect necessary change.

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Executive Summary

The United States faces a strategic landscape unlike anything it has encountered in its recent history. It faces a rising great power in China, a diminished but still dangerous Russian military threat, and myriad "lesser threats" in the form of Iran, North Korea, and violent extremist organizations. Moving forward, the United States will need to deter aggression by two nuclear armed great-power adversaries while also keeping other threats at bay to protect the U.S. homeland and its global interests. But Washington finds itself in a precarious position where it may not have sufficient capacity, capability, nor readiness to contend with multiple advanced threats and crises. The Pentagon, therefore, needs allies and partners to help it deter Chinese and Russian aggression and manage the lesser but persistent threats that could grow if ignored.

To overcome these challenges, the U.S. Department of Defense (DoD) has advanced the concept of integrated deterrence in the 2022 National Defense Strategy (NDS). Integrated deterrence seeks to integrate all tools of national power across domains, geography, and spectrum of conflict, while working with allies and partners. But what integrated deterrence entails in practical terms remains unclear, particularly to the very allies and partners Washington wants more from. This ambiguity raises the risk that integrated deterrence may find itself dead on arrival—and along with it, the ally and partner line of effort in the NDS. This risk is particularly high since the unclassified version of the NDS, which is the only one that is available to most allies and partners, was long delayed and finally released in late October 2022.

To enable the DoD's NDS implementation efforts and turn integrated deterrence from rhetoric to reality, the authors developed a framework to help the department think about and implement its strategy of integrated deterrence with allies and partners. This framework highlights three levels of integration between the United States and its allies and partners: tactical, institutional, and strategic.

Tactical integration is the most visible form of multilateral defense cooperation and the most common. It emphasizes interoperability between America and its allies and partners through common or compatible equipment and shared tactics. Institutional integration is a deeper form of cooperation that requires higher levels of trust, as it involves incorporating allies and partners into DoD decision-making processes. Institutional integration tends to center around a few areas, including information sharing; research and development; and capability development, acquisition, and production. The pinnacle

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of integration is strategic integration, which is arguably the hardest to achieve as strategic and policy differences have long been a significant barrier to deepening integration with allies and partners. Strategic integration entails the DoD and allies and partners developing a common understanding and prioritization among threats and agreeing on a division of labor for how to counter them. In theory, tactical and institutional cooperation should flow from discussions and decisions made in the strategic integration process.

Integrated deterrence requires cooperation at all three levels highlighted in this report. But the one area most pivotal to the integrated deterrence concept is where deeper collaboration is most sorely and urgently needed: strategic integration. Strategic integration should serve as the backbone of integrated deterrence and help focus American military cooperation. The U.S. government must work with allies and partners to develop a shared strategic vision to overcome the barriers to deeper institutional and tactical integration. Strategic integration has been the missing link in collective deterrence efforts.

Washington and its allies and partners need to deepen integration in peacetime, rather than waiting for a crisis or conflict to serve as a forcing function. In a conflict with China or Russia, they likely will not have the time to resolve these important issues. Moreover, enhancing institutional and tactical integration does not happen overnight as acquisition, research and development, and coproduction all have long lead times, pushing Washington to make decisions about these now to have the capabilities required to deter and, if needed, defeat future threats from China and Russia. But in the meantime, all these activities—peacetime strategic and operational planning, improving and demonstrating tactical interoperability, and making smart collective choices about future capabilities—provide signals of credibility and resolve that enhance deterrence and have the potential to keep China and Russia from aggression while these efforts bear fruit.

As the "center of gravity" of the 2022 NDS, allies and partners need to be on board with the concept of integrated deterrence for the strategy to be a success. The delayed release of the unclassified strategy limited the time available for allies and partners to ponder the NDS, consider their role in it, develop their nation's response, and get their bureaucracies aligned to support and implement the integrated deterrence concept. As such, the DoD has a long way to go in realizing integrated deterrence with allies and partners. With only two years left in the administration, time is not on the department's side, and it must take immediate steps to actualize integrated deterrence.

To deepen strategic integration, the U.S. Department of Defense should:

- Use this framework to develop a roadmap for bilateral integration, starting with an assessment of strategic alignment—especially prioritization of threats—and develop plans for further integration that conform with overlapping U.S. and ally and partner priorities.
- Specify what the United States is asking of democratic European and Indo-Pacific allies and partners, including a division of labor.
- Deepen strategic and operational planning with highly capable allies and partners to improve multilateral responsiveness to Chinese and Russian aggression.

To deepen institutional integration with allies and partners, the U.S. Department of Defense should:

- Improve information sharing with allies and partners to enhance integration and to incentivize this behavior throughout its bureaucracy.
- Extend International Traffic in Arms Regulation (ITAR) exemptions to all National Technology and Industrial Base (NTIB) members to promote integration and resiliency.
- Pursue codevelopment and coproduction of key capabilities to strengthen the combined defense industrial base capacity and improve resiliency.
- Consider how to create a network and data architecture for Joint All Domain Command and Control (JADC2) that can include allies and partners.

To deepen tactical integration with allies and partners, the U.S. Department of Defense should:

- Work with Congress, the National Security Council, and the State Department to reform the arms sales process to accelerate the provision of weapons that could be used to deter China or Russia either through direct commercial sales or foreign military sales to allies and partners.
- Adopt a multilateral exercise schedule that demonstrates interoperability and strengthens ally and partner capabilities in a high-end conflict.

Introduction

The United States faces a strategic landscape unlike anything it has encountered in its recent history. Today, it faces a rising great power in China, the U.S. Department of Defense's (DoD) "pacing challenge."[1] China's extensive conventional military modernization is approaching a milestone, as Beijing's military might has the ability to tip the local balance of power in East Asia in its favor. China's growing nuclear arsenal casts a shadow over the region and beyond, and buoys its conventional military power.[2] Simultaneously, Washington also must contend with the "acute threat" of Russia.[3] As Russia's military performance in Ukraine as of late 2022 has proven to be underwhelming, the threat posed by Russian conventional combat capabilities has somewhat diminished. Nevertheless, Moscow's risk-acceptant leadership, stockpiles of strategic and nonstrategic nuclear weapons, and potential ability to reconstitute military strength in the coming years render Russia an enduring concern for the DoD.[4] Moreover, the United States also faces a myriad of "persistent" but lesser threats—in the form of Iran, North Korea, and violent extremist organizations—that threaten the security of the U.S. homeland and American allies and partners abroad.[5]

Moving forward, the United States will need to deter two major adversaries from aggression while also keeping other threats at bay to protect the U.S. homeland and support its extended deterrence commitments to allies and partners around the globe. However, it finds itself in a critical position where it may not have sufficient capacity, capability, or readiness to contend with multiple advanced threats and crises.[6] The U.S. military needs extensive conventional and nuclear military modernization to deter the challenges posed by China and Russia. However, the United States' ability to rapidly make the needed changes is constrained by a fragile and contracted defense industrial base that is optimized for efficiency over surge capacity and resiliency.[7] Washington has struggled to expand the defense industrial base to produce capabilities at the rate required, just as it has strained to innovate and develop new capabilities necessary for high-end future conflict. Simultaneously, the U.S. military faces shrinking force structure and, despite making great strides, continues to struggle with maintaining the high levels of readiness required to manage its global day-to-day responsibilities, let alone respond to aggression from a single advanced adversary.

To deter these threats and overcome the internal challenges facing the U.S. military, the DoD has advanced the concept of integrated deterrence in the National Defense Strategy (NDS).[8] Integrated deterrence—touted as the cornerstone of the NDS—is defined by the DoD as combat-credible American forces "working seamlessly across warfighting domains, theaters, the spectrum of conflict, other instruments of U.S. national power, and our unmatched network of Alliances and Partnerships," and bolstered by the U.S. nuclear deterrent.[9] It is intended to be a holistic approach that aligns the DoD's processes, priorities, and activities to strengthen deterrence and tailored to specific threats in a bid to ameliorate the challenges currently faced by the U.S. military. But despite the greater specificity provided in the NDS, it remains unclear in practical terms what integrated deterrence may entail.[10]

Integrated deterrence also seeks to align the DoD with allies and partners and better incorporate them into its planning and activities.[11] The NDS calls allies and partners "the center of gravity for this strategy."[12] If that is the case and integrated deterrence is the primary "strategic way" of the strategy to achieve its aims, then it is deeply important to clarify how the DoD intends to cooperate with allies and partners to strengthen deterrence against the two highest priority threats it faces: China and Russia.[13] The late release of the NDS has led to confusion in various capitals about what Washington is likely to require of them and how they fit into integrated deterrence efforts.[14] Now that the strategy has been released, the DoD has an opportunity to clarify to allies and partners what this means for them.

Moving forward, the United States will need to deter two major adversaries from aggression while also keeping other threats at bay to protect the U.S. homeland and support its extended deterrence commitments to allies and partners around the globe.

The 2018 NDS emphasized working with allies and partners to promote burden sharing to free up U.S. attention and resources to focus on great-power competition.[15] But the Trump administration's efforts to enhance burden sharing among the United States and its top allies fell flat, as it unhelpfully emphasized the financial elements of burden sharing, failed to prioritize allies and partners in NDS implementation, and did not sufficiently engage allies and partners in its defense planning and processes.[16] The Biden administration has had several

notable successes, including the trilateral Australia, United Kingdom, United States (AUKUS) partnership and a new Quad initiative to enhance maritime domain awareness in the Indo-Pacific.[17] But many obstacles remain to realizing both the submarine and advanced capability pillars of AUKUS,[18] and while the Quad has dipped its toe into the realm of security cooperation, it has not lived up to its potential in the security sphere.[19] The specter of earlier ineffective efforts to deepen cooperation with allies and partners, coupled with the lack of clarity around the integrated deterrence concept, has left many foreign capitals worried that the 2022 NDS may suffer the same fate as the preceding strategy.[20]

The release of the long-delayed unclassified version of 2022 NDS in October 2022, which is the only version available to most allies and partners, may allay some of those fears. The strategy is notable in its prioritization of threats and risk acceptance. More so, it doubles down on the importance of allied and partner contributions to global security, particularly in deterring the two high-end threats of Beijing and Moscow. The strategy notes how it intends to work with allies and partners in each region in general terms, although it falls short of explaining specific ways and means.[21] Nevertheless, the explanation of threat and geographic priorities and risk acceptance is useful to allies and partners. The 2022 NDS identifies the need to strengthen interoperability, collective force planning, information sharing, and capability development as a prerequisite to achieve integrated deterrence.[22] Most notably, the strategy acknowledges the institutional barriers that have stymied deeper cooperation and collaboration between the United States and its allies and partners to date. But whether the department will be able to reform the processes that have acted as a roadblock to deeper integration remains to be seen.

Now is the most important phase of the strategy process: the implementation phase for the 2022 NDS. Given the importance of allies and partners to the strategy and the concept of integrated deterrence, it is critical that NDS implementation successfully incorporates allies and partners into DoD deterrence efforts to move from rhetoric to reality.

To aid DoD's NDS implementation efforts, the authors developed a framework to help the department think about and implement its strategy of integrated deterrence with allies and partners. This framework is intended for the DoD and allied and partner defense ministries. While the NDS aspires to better integrate nonmilitary tools with military tools, that is beyond the scope of the analysis. Instead, this analysis focuses on how allies and partners in the Indo-Pacific and Europe can contribute to effectively deterring China and Russia.

The authors do not seek to further define integrated deterrence nor predict how the department intends to work with allies and partners to enhance deterrence beyond the published defense strategy. Rather, this framework highlights what the ally and partner component of integrated deterrence *should* be to effectively deter China and Russia. This ideal type of integration is not necessarily achievable nor desirable with many allies and partners, but it does offer a way for the United States and its allies and partners to systematically think through how they could implement the concept of integrated deterrence, even if partially. There are three levels of cooperation between the United States and its allies and partners in the framework—tactical, institutional, and strategic integration—to provide suggestions for where and how the DoD should focus its military collaboration efforts.

This report begins with making the case for why the United States must work with allies and partners to manage global threats and alleviate some of the internal challenges facing the DoD. It then identifies some of the barriers to deepening cooperation with allies and partners and realizing integrated deterrence. The report outlines a framework for military integration with allies and partners at the tactical, institutional, and strategic levels, before delving into each of these three types of cooperation in detail. This includes a discussion of the barriers to cooperation at each level, providing suggestions for overcoming impediments to cooperation, and identifying new ways to collaborate. The report concludes with recommendations for how the DoD can strengthen tactical, institutional, and strategic cooperation with allies and partners, and actualize the allies and partners component of the integrated deterrence.

Why Are Allies and Partners Needed?

A senior DoD official noted that integrated deterrence is a "team sport."[23] This reflects an increasing recognition within the department that the U.S. military does not have the resources, force structure, or capabilities needed to meet its global requirements. America's mismatch between strategy and resources has grown as the United States now faces potential aggression from two advanced adversaries in the Indo-Pacific and Europe, just as the U.S. military has gotten smaller and more expensive. The conclusion that the United States cannot and should not go it alone has reinforced the need to work with other capable and like-minded states to deter China and Russia from aggression.

Part of the reason for the U.S. focus on allies and partners is a renewed emphasis on burden sharing, whereby ally and partner militaries contribute more to their own defense, regional defense, or collective defense. In theory, allies and partners willing to take on greater security responsibility helps by freeing American forces up to focus on the priority threats and most pressing military missions rather than managing regional crises. It could also reduce some of the military's global responsibilities, enabling it to recoup readiness and make greater resource investments in modernization. According to Colin Kahl, the Undersecretary of Defense for Policy, integrated deterrence is "not an argument for allies and partners to do more so we do less." Instead, the concept is that "we need to do more and others need to do more alongside us and...we need to integrate those efforts together."[26]

Operating with allies and partners increases the combat power of U.S.-led coalitions. In a demonstration of friendship and combined dynamic force deployment, the U.S. Air Force flies an F-22 Raptor, the German Air Force flies a Eurofighter, and the Royal Australian Air Force flies an RAAF EA-18G Growler over Australia in 2022. (Genevieve Armstrong and Christian Timmig/U.S. Air Force)

WHO ARE U.S. ALLIES AND PARTNERS?

The United States differentiates among the nations it cooperates with by placing them in two primary categories: allies and partners. Allies refer to the countries with whom the United States has a formal agreement that affirms America is willing to defend the country in case of attack. While the United States has engaged in bilateral treaties with many allies, such as the United Kingdom, it has also entered into collective security agreements with multiple nations. NATO is an example of a collective treaty, where member states—including the United States—have a shared commitment to respond collectively to armed attacks.[24]

But America also has close security cooperation with nations with whom it does not have a formal commitment to its defense and these countries are often referred to as partners.[25] Ukraine—which is not a member of NATO—is an example of a U.S. partner, as is Taiwan. However, just because the United States does not have a treaty alliance does not mean Washington does not provide support to its partners. As the Ukraine example shows, while the United States and other NATO members have declined to militarily intervene after Russia's invasion of Ukraine, it has provided financial, material, and intelligence support to Kiev that has contributed to Ukraine's ability to respond to Russian aggression to defend its sovereignty and security.

In other words, integrated deterrence is not trying to shift U.S. responsibilities, but to deepen coordination with allies and partners to increase the effectiveness of individual deterrent efforts while avoiding unnecessary duplication. The 2022 NDS stresses the role that regional allies and partners must play in deterring the persistent threats in lower priority regions. But it also suggests a new division of labor in Europe where "over time" the United States "will focus on enhancing denial capability and key enablers ... while NATO allies seek to bolster their conventional warfighting capabilities."[27]

Second, capable allies and partners provide additional combat power in coalition operations, thereby strengthening deterrence and shifting the balance of power in their favor. China has a large military that is modernizing and enhancing its ability to project power, potentially enabling Beijing to overmatch the United States in certain East Asian scenarios. But the U.S. military rarely fights alone; it normally operates as part of a multilateral coalition that acts as a force multiplier. While a U.S.-led alliance might remain quantitatively inferior to China, its qualitative technological superiority and combined strength could "ensure power projection in a contested environment" and generate enough mass to win.[28]

A key component of military power is materiel.[29] It is the ground vehicles, ships, aircraft, missiles, ammunition, satellites, and networks that connect these systems. The war in Ukraine has served as a reminder

that large-scale wars consume a massive amount of equipment and ammunition, and that in protracted conflicts it is critical to be able to rapidly resupply and reconstitute forces. In the words of William LaPlante, the Undersecretary of Defense for Acquisition and Sustainment, weapons "production is deterrence."[30] After decades in which the emphasis was on efficiency and just-in-time defense supply chains, the United States and its allies and partners are ill-prepared for the return of industrial warfare.[31] The United States habitually underinvests in precision-guided munitions,[32] and many allies and partners make the same mistake, assuming that in an emergency they can draw from U.S. stockpiles.[33] Improved defense industrial base cooperation with allies and partners is needed to produce enough of the weapons that would be needed to prevail in a war against China or Russia.

Moreover, establishing cooperative capability development and coproduction among the United States and its allies and partners expands their capacity to produce the weapons needed for deterrence. Additionally, this bolsters the resiliency of the defense industrial base, fosters innovation, and creates redundant and secure supply chains. Therefore, the 2022 NDS stresses the need for the United States to work with allies and partners in capability and technology development, and to expand the innovation ecosystem to aid future coalitions' interoperability and resiliency.[34] All of these developments would result in maintaining a favorable balance of power to uphold the rules-based international order.

Significant cooperation with allies and partners to deter aggression is also a signal of resolve, adding additional credibility to deterrent threats. This is one of the many reasons why the 2022 NDS is anchored on cooperating with allies and partners and emphasizes the need for interoperability and combined coalition capability.[35] Multiple states demonstrate their combined resolve to stand up to and resist any attempts to forcibly change the international order. The prospect that a large coalition of nations will oppose aggression by indirectly supporting the defender, directly assisting to defeat the attack, or imposing costs on the aggressor strengthens deterrence. This signal of resolve is not a one-way street where the United States as the security guarantor commits to fight in support of allies and partners, but rather a combined signal of resolve where multiple parties demonstrate their intent to work together to defeat illegal attacks on other states. Enhanced interoperability and multilateral exercises are tangible demonstrations of credibility, commitment, and resolve, and are often seen as indicators of a coalition's commitment to oppose aggression. Additionally, cooperation with allies and partners can also serve as an important signal of assurance that Washington would, if necessary, come to their defense.

But true defense integration is, in many respects, an aspiration rather than reality. There are multiple impediments to deepening cooperation and coordination among the United States and its allies and partners. The 2022 NDS highlights just a few of these, in particular the institutional barriers to increased cooperation.[36] More so, there are open questions of whether allies and partners can and will contribute their share financially, materially, or operationally. In addition to these, there are also risks that stem from deepening cooperation: risks of entanglement in conflicts the United States doesn't wish to be party to, the risks of interests and allegiances changing, and the risks that come from sharing sensitive information that could hurt American interests and national security were it to be obtained by its rivals.

In 2022, a U.S. Air Force (USAF) B-2 bomber was escorted by Royal Australian Air Force (RAAF) F-35A fighters, EA-18 Growlers, and RAAF F/A-18F and USAF F-16 fighters. This bilateral training exercise demonstrated USAF and RAAF interoperability in high-end combat air operations. (Hailey Haux/U.S. Air Force)

The Current State of Integration with Allies and Partners

Before developing a framework for how allies and partners can be incorporated into integrated deterrence, it is necessary to understand the current state of U.S. integration, and the barriers that exist to deepening military cooperation. The United States has an extensive network of overlapping multilateral, minilateral, and bilateral arrangements and forums to liaise with allies and partners on a wide range of issues. Many of these are legacy arrangements that were created to deal with prior threats like the Soviet Union (in the case of NATO), or earlier crises, and they are not optimized for the current geopolitical environment.

True integration is often elusive. Existing cooperative efforts may be robust in some areas—such as enhancing technical interoperability of weapons systems—and lacking in others, like strategic planning for likely contingencies in advance of crises. Due to the NATO alliance, European military integration is broader and deeper compared to the hub-and-spokes system of bilateral and emerging minilateral partnerships in the Indo-Pacific. But as NATO has expanded, reaching consensus among the 30 member states has become difficult, leading to the creation of many smaller groupings of members and outside partners.[37] These minilateral groupings—such as the Framework Nations Concept, Joint Expeditionary Force, European Intervention Initiative, and Bucharest 9—aim to enable a more agile and responsive approach to regional threats or specific challenges, which in turn indicates that NATO has been lacking in this regard.[38] Moreover, while NATO has weapons standards, LaPlante has asserted that these do not enable true interchangeability, and more progress needs to be made in this area.[39]

In the Indo-Pacific, the situation is more fragmented as the United States has bilateral treaties with Australia, Japan, the Philippines, Thailand, and South Korea. However, until recently, efforts to expand these arrangements have been sluggish.[40] While the Quad—the security dialogue between Australia, India, Japan, and the United States—began in 2007, it languished for more than a decade, until being reinvigorated in 2017.[41] Despite making tangible progress in the past five years, the Quad has not lived up to its full potential in terms of deepening security cooperation and coordination, especially in the face of growing Chinese assertiveness in the region.[42] There are, however, other promising developments. In October 2022, for instance, Japan and Australia signed a joint declaration on security cooperation, pledging to "expand and deepen practical cooperation and further enhance interoperability," in support of a "free and open Indo-Pacific."[43] Yet efforts to improve relations among close U.S. allies—especially Japan and South Korea—have continued to flounder, even as North Korea poses an increasing shared threat.[44]

Finally, there is a growing trend of cross-regional security cooperation with European states, especially the UK and France, playing a more active role in the Indo-Pacific.[45] AUKUS and the burgeoning Japanese-UK security cooperation[46] are evidence of London's "tilt" toward the Pacific[47], while France with its extensive overseas territories is a "fully fledged Indo-Pacific country" that seeks to "be a stabilizing force" and to deepen its relationship with India, Australia, and Japan.[48] The U.S. National Security Strategy aims to strengthen this "connective tissue ... between our democratic allies and partners in the Indo-Pacific and Europe."[49]

These connective efforts are less than the sum of their parts because they are disjointed and spotty, and fall well short of what is needed to enable combined responses to aggression, especially from great power adversaries.

Although they appear extensive, these cooperative efforts are less than the sum of their parts because they are disjointed and spotty, and fall well short of what is needed to enable combined responses to aggression, especially from great-power adversaries.

Growing threats from China and Russia demand deeper integration between the United States and its allies and partners to improve defense strategy, force development, and operations for effective deterrence. But significant barriers to enhancing cooperation remain and cut across multiple areas, ranging from political alignment to technology sharing. U.S. government officials are aware of these roadblocks, with one official noting that, "The more we [the DoD] try to do, the more difficult it becomes to integrate [with allies and partners]."[50] While such barriers do not currently prevent or halt cooperation, they make the level of cooperation required for effective deterrence against advanced adversaries more difficult.

Barriers to Deeper Integration

There are numerous political barriers that hinder greater integration between the United States and its allies and partners. Ultimately, a number of these come down to political sensitivities that impede cooperation and can be found at several levels.

First, the United States and its allies and partners have different interpretations of and restrictions on collective defense. Even NATO, which was founded on the principle of collective self-defense, faces questions about whether its members' pledge to treat an attack against one as an attack against all and to use armed force "to restore and maintain security of the North Atlantic area" is credible.[51] As NATO has expanded, its 30 members have become more diverse and often have different threat perceptions and national priorities, raising concerns that they are less willing to sacrifice for each other, especially in the face of ambiguous cyber-attacks or gray zone tactics.[52] While U.S. President Joe Biden has affirmed to defend "each and every inch of NATO territory,"[53] and Russia's 2022 invasion of Ukraine has strengthened NATO's cohesion and resolve,[54] cracks in this unity may be emerging and could become larger in the future.[55] Additionally, Japan's constitution limits Japanese military forces to self-defense operations; although, this has expanded in recent years to include collective self-defense.[56] This has led Japan to undertake significant reforms to evolve its security posture and enable greater security cooperation with the United States and regional partners.[57] But even with these reforms, Japan is still limited politically in the amount of integration it can seek to attain with the United States.[58]

Political sensitivities also hinder cooperation on a bilateral and multilateral basis. Even between the United States and its closest allies, there is a reticence to share information that would be critical to advance planning for some of the most pressing contingencies they would collectively face. This includes sharing of key national caveats that dictate when and how military forces may be used. In recent multinational operations, managing multiple different caveats has significantly complicated coalition operations.[59] However, military operations have often been the forcing function to share information about caveats and such discussions rarely occur in peacetime, in advance of a crisis.[60] Additionally, some collective security institutions, such as NATO, involve many different countries with different priorities and interests, which makes it difficult to reach agreement and may constrain their willingness to be forthcoming about their true positions.

Political sensitivities among allies and partners also extend to sharing their perceptions and analysis of threats. As a result, it has been difficult for the United States and its allies and partners to develop shared appreciation for potential threats, with some foreign government officials suggesting there is a significant mismatch between Washington and their capitals in how they view the China challenge.[61] Additionally, some countries are reticent to honestly admit their vulnerabilities and capability gaps, given concerns that this information could be used against them—even by other allies and partners. To effectively plan for high-end conflict, it is necessary to understand what different states can bring to the table as well as vulnerabilities that could be exploited by adversaries and introduce complications into coalition military operations.

> **U.S. export controls such as ITAR limit the exchange of technical data, making it difficult for the United States to share information necessary for the codevelopment and production of systems and platforms.**

Political preferences stemming from differences in national interests and strategic culture, in turn, trickle down into government bureaucracies. As one allied government noted, "our [country and the United States] bureaucracies have allergies to talking to other bureaucracies."[62] An example of this "allergy" is found in the U.S. DoD which tends to overly classify information, hindering its ability to share information about potential threats with some allies and partners.[63] While Washington was effectively able to share intelligence in the run-up to Russia's invasion of Ukraine in February 2022, this is likely an exception rather than the norm.[64] Moreover, this intelligence sharing occurred during crisis, a time when U.S. leaders were more willing to take risks, rather than during peacetime. It is deeply important for many allies and partners to see the intelligence themselves, as the memory of U.S. intelligence assessments that Iraq had weapons of mass destruction that the Bush administration used to build a case for the 2003 war still looms large.[65]

There are also significant technological barriers to enhancing cooperation. These include a lack of compatible platforms, systems, and communications.[66] For example, coalition members during NATO's Operation Unified Protector—the air war in Libya—had difficulty integrating incompatible communications links, creating bottlenecks in air operations.[67] Additionally, U.S. export controls such as the International Traffic in Arms Regulation (ITAR) limit the exchange of technical data, making it difficult for the United States to share information necessary for the codevelopment and production of systems and platforms.[68] This coupled with other U.S. restrictions—such as the Berry Amendment, which requires the DoD to give preference to domestically manufactured goods—have led some allies and partners to feel as though "buy American" is their only option for military integration with the United States and that Washington is in an "arms race" with its allies.[69]

Additionally, the United States works with allies and partners that possess different military capabilities and are at different stages of military development. There is a gap between U.S. military capabilities and those of even some of its more capable military allies and partners. This technological gap is likely to widen as Washington modernizes its military in the coming years. Moreover, the DoD is embracing the concept of Joint All Domain Command and Control (JADC2), which seeks to create interconnected communications and targeting networks that connect all American forces together.[70] If JADC2 takes the form of a closed architecture, it will be difficult for allies and partners to be technically integrated. But DoD concerns over information sharing may be a larger impediment to including allies and partners in critical networks under the rubric of JADC2.

While the 2022 NDS proclaims that it "is a call to action for the defense enterprise to incorporate allies and partners at every stage of defense planning," these barriers stymie the sharing of vital yet sensitive information and in turn impedes strategic and operational planning with allies and partners.[71] As a result, strategic planning between the United States and its high-end allies and partners for potential conflicts with China or Russia are not occurring at the level of detail or frankness required.[72]

Barriers to Integrated Deterrence

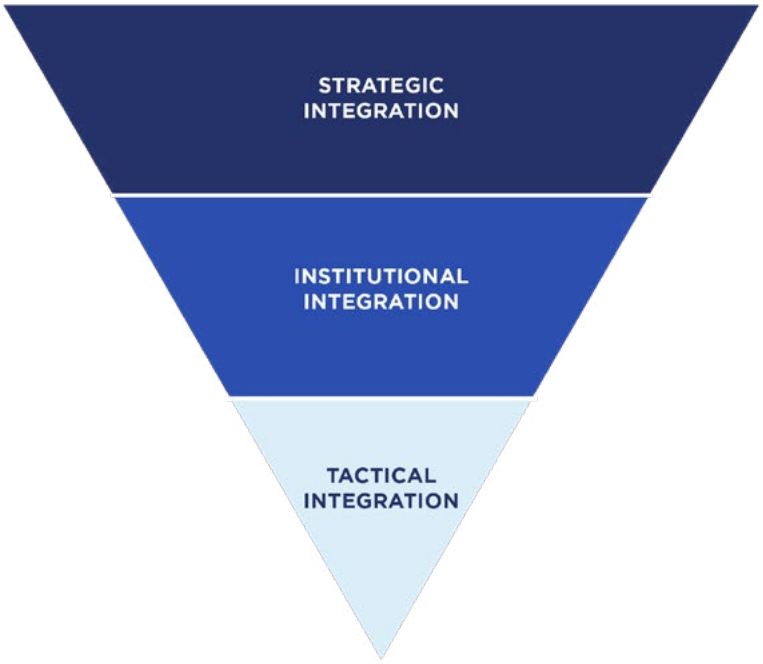
All of these barriers to deepening cooperation are coming to a head under the banner of integrated deterrence. But the concept of integrated deterrence is itself a barrier to implementing the concept, as what it means and what it entails is not well understood by allies and partners. As one allied official told the authors, "We have two problems with integrated deterrence—one is integration, the other is deterrence."[73]

In addition to differing threat perceptions, some of America's closest allies and partners differ on what deterrence should mean and the military's role in deterrence. For instance, the French predominantly associate the term with nuclear deterrence.[74] As such, the term "integrated deterrence" has a different meaning in France. Similarly, some allied and partnered officials noted that while they view deterrence as the means to prevent conflict, they perceive Washington as conflating deterrence with compellence—or getting an adversary to stop activities it is already undertaking.[75] There are concerns in many capitals that the United States is currently framing multiple activities—including diplomatic and economic activities—as deterrence. The perception of an expanded scope of what deters, as well as the emphasis on the China challenge, has limited some allies and partners' willingness to sign on to certain efforts.[76] This is particularly true of nations who are not fully aligned with the United States on threat perceptions, particularly with regard to China.

There are also some differences in perception between the DoD and some U.S. allies in the types of aggression that need to be deterred. While the 2022 NDS highlights how various actors are leveraging gray zone tactics to erode regional and global security, it elevates high-end deterrence—deterring conventional and nuclear aggression—as the DoD's priority.[77] Other key allies, however, may view gray zone tactics as requiring a response.[78] As these "gray zone" tactics often emphasize nonmilitary tools, there is a need for allies and partners to better understand where the DoD's priorities are and how nonmilitary tools—which largely fall outside of the department's purview—contribute to deterrence.[79]

How the United States intends to integrate allies and partners into its deterrent efforts is also an area of concern. At present, America's allies and partners do not understand the integrated deterrence concept and what it would require of them, nor are Washington's own expectations clear. There are open questions whether integrated deterrence is a new term for burden sharing, whether it requires allies and partners to undertake new and different activities, and where they may be called upon to act. While the 2022 NDS seemingly aspires toward true integration with select allies and partners, it is unclear whether the DoD will be able to reform several barriers to cooperation, including information sharing. But what is clear is that there are currently more questions than answers about integrated deterrence, highlighting the need for a more systematic way to think about cooperation between the United States and allies and partners to successfully implement this concept.

FIGURE 1: THE IDEAL PYRAMID OF INTEGRATION



A Framework for Integrated Deterrence with Allies and Partners

Integrated deterrence advances an ambitious vision of integration across domains, geography, conflict, and tools.[80] The NDS aspires to "strengthen major regional security architectures with our allies and partners based on complementary contributions, combined, collaborative operations, and force planning; increasing intelligence and information sharing; [and] new operational concepts."[81] This goal is unlikely to be realized in the near term. Not only is this due to the barriers previously discussed, but it is also due to the insufficient guidance provided by the NDS about which aspects of military coordination the Pentagon should focus on with allies and partners to strengthen deterrence against China and Russia. To make integrated deterrence with allies and partners a reality, the DoD needs a clear roadmap for how exactly it wants to deepen military collaboration with specific allies and partners. Allies and partners must also understand what the DoD is asking of them so that they can determine which of the American requests align with their own goals and interests. The authors developed a framework to help the United States and its allies and partners assess their current level of integration, plan how they can achieve the mutually desired level and type of integration, and track progress in realizing this objective.

Too often defense integration is conflated with tactical military interoperability. Although tactical integration of American and allied and partner forces is critical, there are deeper forms of integration—at the institutional and strategic levels—that are necessary to fully realize the benefits of having American forces operate with allied and partner forces. Institutional integration involves incorporating allies and partners into core DoD organizations and decision-making processes, especially its research, development, testing, and evaluation processes; acquisition processes; production processes; and information sharing processes.

The base of the pyramid of integration and the central level from which other forms of integration should flow is strategic and policy integration. Strategic and policy integration is focused on developing a common understanding for how the allies can together deter aggression or prevail in a war should deterrence fail. Strategic integration entails the DoD and allies and partners developing a common understanding of threats; identifying which specific scenarios to focus on; the roles, missions, and responsibilities among them; and sharing views on risk tolerance and escalation management. This framework depicts the most holistic version of integration, which is not possible nor necessarily desirable with all allies and partners. Each of these levels depicted on the pyramid of integration in the figure above will be discussed in more detail.

Tactical Integration

Tactical interoperability is the most visible form of multilateral defense integration. Interoperable forces can effectively perform military tasks together, which can be achieved by using shared tactics, techniques, and procedures (TTPs), compatible hardware, or having common weapons and technical components that can communicate and share data with each other.[82]

Secure communications and data sharing have become increasingly important to coalition operations as warfare has become more reliant on information, leading adversaries to aim to disrupt American military communications.[83] As the DoD looks to develop the next generation of secure tactical datalinks, it is important to consider how to maintain interoperability with allies and partners. In the 1970s, for example, the United States developed Link-16, a datalink to allow fighter aircraft and airborne warning and control aircraft to share information and develop a real-time common operating picture. While it has enabled tactical communication—particularly among high-end NATO members—not all allied and partner aircraft have Link-16 terminals.[84] This has led to workarounds such as reverting to verbal communications over analog radios or ad hoc solutions such as messaging over commercially available platforms. These are highly susceptible to interception and jamming, are not as fast and reliable, and do not enable sharing a common operating picture.[85]

U.S. Marine Corps F-35Bs operate off the HMS Queen Elizabeth *aircraft carrier in the South China Sea in 2021. This type of combined operation is moving toward interchangeability. (Zachary Bodner/U.S. Indo-Pacific Command)*

In the absence of technical solutions, compatible components and common TTPs are often enough to enable basic interoperability. During the 2022 Pitch Black multinational air combat exercise held in Northern Australia, Singaporean tanker aircraft provided in-flight refueling to a range of different fighters, including Australian F-35As, U.S. Marine Corps F-35Bs, and French Rafales, as well as Eurofighter Typhoons.[86] Similarly, the U.S. Space Force is putting two Enhanced Polar Systems-Recapitalization payloads on Norwegian satellites to provide secure communications for American forces operating in the Arctic region.[87] This is the first international space collaboration of its kind, which reduces costs, delivers a capability to warfighters more quickly than would otherwise be possible, and increases the resilience of U.S. and Norwegian space communications architecture.[88]

A more demanding degree of interoperability would be using common equipment that is fully compatible. This essentially requires different countries to operate the same weapons system. In 2021, the U.S. Marine Corps deployed a squadron of F-35B aircraft onto the British aircraft carrier HMS Queen Elizabeth alongside a UK Royal Air Force F-35B Wing and sailed through the Mediterranean and Indo-Pacific. During the deployment, the U.S. and UK F-35s reportedly shared spare parts, which is an added benefit of common equipment.[89] This type of logistics cooperation would not have been possible if the Royal Navy Air Squadron had consisted of only AV-8 Harrier aircraft, which was true until 2010.

The highest level of tactical interoperability is what current UK Chief of Defence Staff Admiral Sir Tony Radakin has called "interchangeability."[90] Despite being sometimes produced in different locations and owned by different nations, interchangeable forces possess enough similar technical components and capabilities that they are substitutable for each other.[91] This means not only commensurate technical capabilities but also nearly equal performance from any human operators. Interchangeability is the holy grail of tactical integration because it would dramatically ease the burden of

During Maritime Partnership Exercise 2021, the U.S. Navy's USS Carl Vinson *aircraft carrier, the Royal Navy's HMS* Queen Elizabeth *aircraft carrier, the Japanese Maritime Self Defense Force's JS Kaga helicopter destroyer, and ships from the Royal Australian Navy sail in formation. (Haydn N. Smith/U.S. Navy)*

planning coalition operations, but it is likely only achievable with a very limited number of allies. Currently, planning for multinational coalition operations is onerous because of the large number of dissimilar forces in terms of types of equipment, capability, and levels of operator proficiency.[92] If a coalition's forces are truly fungible, planners in theory do not need to worry about the nationality of ship, aircraft, or brigade. Instead, they can truly treat all forces as the same—all building blocks can be assembled in different ways to build a larger whole. This level of fungibility would enhance the coalition's flexibility and ability to mass effects because commanders could employ the most proximate forces to the battlefield to improve responsiveness and outmatch an adversary.

To deepen tactical integration, the DoD undertakes a wide range of security cooperation activities to provide allies and partners with American military equipment, practice multinational operations, and routinely interact with each other. The United States can sell arms or military equipment to allies or partners through foreign military sales (FMS), direct commercial sales (DCS), and excess defense articles transfers.[93] American forces can also improve interoperability through international military education training programs that bring international officers to American professional military education programs. Participating in multilateral exercises is another means to deepen tactical integration. For instance, during Maritime Pacific Exercise 2021, U.S. Navy, Royal British Navy, Royal Australian Navy, and Japanese Maritime Self Defense Force ships operated together in the Indian Ocean. The multinational fleet, which consisted of Australian frigates, a British carrier strike group, a Japanese helicopter carrier and destroyers, and a U.S. carrier strike group practiced advanced tactics for antisubmarine warfare, offensive and defensive air operations that included aircraft from one nation landing on another nation's ship, and live-fire drills.[94]

Additionally, American and allied and partner nations have enhanced their interoperability through actual military operations as a part of a coalition. For instance, during Operation Inherent Resolve, 28 nations contributed forces to military operations against the Islamic State of Iraq and Syria (ISIS).[95] Finally, overseas bases and acquisition and cross-service agreements (ASCAs) can help deepen tactical integration with allies and partners who provide American forces with access to bases in their territory or provide logistics support to American forces. Being in a foreign country increases the opportunity for American forces to engage in opportunistic security cooperation as a part of their routine training and operations.[96]

Institutional Integration

While tactical integration can occur routinely or during an ongoing real-world military operation, institutional integration deepens the DoD's relationship with an ally or partner by regularizing the interaction and incorporating the ally or partner into routine processes. It is therefore a deeper form of integration than tactical integration.

Institutions are defined as the creation of shared principles, norms, and rules that guide interactions.[97] At the most formal end, institutional integration may take place in an international organization, such as NATO. However, institutional integration does not require the creation of an independent organization. On the other end of the spectrum, institutional integration may simply involve liaison officers or other forms of personnel exchanges, where a foreign officer is assigned for an extended period to an American defense organization. For instance, the deputy commander of the U.S. Army in the Pacific is a Royal Australian Major General, while the UK has up to 28 liaison and exchange officers in U.S. Army commands.[98] In between the two, there are standing forums and arrangements like the Five Eyes intelligence-sharing agreement that was born out of signals intelligence cooperation during World War II. The Five Eyes Alliance includes the United States, the UK, Australia, Canada, and New Zealand, all of whom informally divide the world into areas of responsibility where each member monitors communications and shares this intelligence with the other members.[99]

Institutional integration tends to occur in a few areas, including information sharing; research and development(R&D); and capability development, acquisition, and production. To understand how institutional integration already occurs, it is worth looking at existing means of information sharing. Five Eyes is the pinnacle of information sharing as it is deeper than many other institutional arrangements. For example, in organizations like NATO or Interpol, information is only disseminated by exception (i.e., on a need-to-know basis) or as part of an exchange between members states. In contrast, by default, Five Eyes shares all communications intelligence that is collected with all five members of the alliance, although there are some exceptions and other forms of intelligence are not automatically shared.[100]

Information sharing is one of the areas that allies and partners find significant barriers to deepening integration due to U.S. classification practices.[101] By default, the DoD often classifies information as Not Releasable to Foreign Nationals (NOFORN) or No Foreign, which proscribes its sharing with other nations.[102] Some very sensitive information should be limited to only American officials, but because the use of the NOFORN caveat is so widespread, it means that allies and partners—even trusted allies like the Five Eyes nations—are marginalized and excluded from many discussions and events. The NOFORN designation can be revised or exceptions made, but this can be a lengthy and cumbersome process as many additional bureaucratic and legal hurdles need to be surmounted to make the information available to any foreign nations. Circumscribing the use of the NOFORN caveat to where it is essential and making more use of authorized release (such as releasable (REL) to an individual nation or ad hoc grouping) would significantly improve intelligence sharing and strengthen military collaboration with allies and partners.

The DoD has extensive R&D cooperation with many different countries that is focused on basic science and technology research. The 2020 DoD International Science and Technology Engagement strategy identified cooperation as being needed to maintain U.S. military-technological superiority by "stay[ing] abreast of emerging" developments in the world, "leverag[ing] other's investments and actively seek[ing] research collaborations."[103] An example of existing institutional integration include the Technical Cooperation Program, which includes Australia, Canada, New Zealand, the UK, and the United States, and is focused on collaborating on research, science, and technology exchanges, often through government-run laboratories.[104]

Because the use of the NOFORN caveat is so widespread, it means that allies and partners—even trusted allies like the Five Eyes nations—are marginalized and excluded from many discussions and events.

Codevelopment and coproduction of military capabilities tend to only occur with some U.S. allies.[105] Coproduction agreements vary significantly in their shape, but in general they provide the technical data and knowledge on how to manufacture or assemble a piece of military equipment to an allied nation.[106] At a minimum, coproduction entails assembly of part or all of a piece of military hardware, and it could include manufacturing major components of a weapons system in an allied nation. For instance, in the past, the Sidewinder and Stinger missile programs were coproduced in Europe and the United States.[107] Currently, a number of states aspire

to enter into codevelopment or coproduction agreements. For example, Poland is seeking to purchase High Mobility Artillery Rocket Systems (HIMARS) and to have some of the launchers or their components produced in Poland.[108]

Codevelopment, which involves codesigning a new capability and the research development testing and evaluation of this system, is the "most difficult and intense form of cooperation."[109] Nevertheless, because codevelopment shares the cost across multiple partners, it offers the only way that some states can afford expensive weapons systems. An example of past codevelopment is the Fighter Support-Experimental collaboration between the United States and Japan in the 1980s. This program sought to develop a new Japanese fighter jet based on the F-16 and resulted in the F-2 support fighter, but this was a difficult partnership that did not realize many of the DoD's goals.[110]

More recently, the AUKUS partnership of 2021 includes the coproduction and codevelopment of capabilities. AUKUS aims to provide Australia with a conventionally armed nuclear-powered submarine (SSN) and to deepen technical cooperation on advanced capabilities among the three allies.[111] Australia is only the second nation after the UK that the United States will share nuclear propulsion technology with, but AUKUS goes beyond submarines and is aspiring to significantly deepen cooperation on advanced military capabilities, including hypersonics, counterhypersonics, and electronic warfare.[112] Taking this even further, Undersecretary LaPlante recently argued that the United States needs "multicountry procurements" with multiple redundant production lines for the same item in different countries.[113]

The National Technology and Industrial Base (NTIB) is an example of institutional integration that spans R&D, production, and maintenance of defense or dual-use technologies. The NTIB includes the United States, Canada, the UK, and Australia and is intended to help maintain American military-technological superiority, to develop reliable supply chains and sources of critical materials, and a resilient defense industrial base that can support operations during an emergency or war.[114] NTIB has been severely hindered by the U.S. export control system and in particular the ITAR.[115] The United States has an extensive system of export controls that apply to adversaries and allies alike to maintain American technological dominance and protect state-sponsored technologies.[116]

ITAR's broad conceptualization of "defense services" and required licensing requirements seriously inhibit cooperation even with close allies and stifle innovation.[117] NTIB members are better off than non–member states as they are nearly guaranteed to be granted an ITAR license within six to nine months, but this is still a considerable delay that can have serious implications for industry and production timelines.[118] Canada is the only state that has an ITAR licensing requirement exemption for select defense items, while other NTIB members lack ITAR exemptions and thus spend considerable amounts of time, money, and effort to comply with the American regulations.[119]

Another type of institutional integration that enhances tactical interoperability are agreements that establish common standards for military systems. These fall well below codevelopment or even coproduction but are useful for ensuring that military equipment is technically compatible, thereby enabling tactical integration. NATO has interoperability standards and profiles for NATO common-funded programs. Member states can also sign NATO standardization agreements in which they agree to partially or entirely adopt a standard.[120] Additionally, the American, British, Canadian, Australian, New Zealand (ABCANZ) Armies Program creates standards for land forces. Based on lessons learned from operations in Afghanistan, for example, ABCANZ issued a new standard for tactical-level command and control.[121] The international community's efforts to support and resupply Ukraine have emphasized the importance of standards and interchangeable equipment. Senior American defense officials have noted that existing standards are inadequate and new multilateral agreements to develop standards are needed to avoid problems in the future.[122]

Strategic integration consists of a common understanding of threats and prioritization among them and a coordinated division of labor for responding to these challenges. But strategic integration is elusive and the most difficult type of integration to realize due to differing national interests.

Technical standards are "guidelines to ensure that materials, products, processes, representations and services are fit for their intended purpose," and are particularly important for military communications, computers, networks, and data systems.[123] STANAG 4607, for example, is a standardized NATO format that is used for ground radar imagery. This standard was created to ensure that NATO and member states' intelligence surveillance and reconnaissance platforms could share their radar pictures, analyze the information collected from different sources, and transfer it to an operator who

could then use it to strike moving targets, such as trucks and vehicles. Initially, a U.S.-led effort to create the standard was transferred to NATO, which promulgated the first version in 2005, and has since updated it twice.[124] Common data architectures and open network standards that are flexible enough to accommodate new technological developments will be particularly important if the United States wants to incorporate its allies and partners into future operating concepts, such as JADC2.[125]

Strategic Integration

Strategic-level cooperation is the pinnacle of integration and important to help align integration across all levels with the countries' overarching objectives and policies. Strategic integration consists of a common understanding of threats and prioritization among them and a coordinated division of labor for responding to these challenges. But strategic integration is the most difficult type of integration to realize due to differing national interests. Divergent national interests often lead to different and perhaps even conflicting strategic and policy priorities, which have long been a significant barrier to deepening integration with allies and partners.[126] Countries' perceptions of threats also often vary and may hinder integration, in addition to a desire to not be overly reliant on another nation, national pride, domestic public opinion, and domestic economic considerations.[127]

Strategic integration is particularly difficult to achieve in peacetime. It often takes a crisis or a war to overcome the strong factors that typically lead to a prioritization of national goals over combined ones, as it presents an urgent shared threat that supersedes other priorities and overcomes obstacles, at least temporarily. For instance, the Eisenhower administration was able to overcome persistent congressional opposition to nuclear sharing with the UK after the Soviet Union had launched the Sputnik satellite, raising fears that the West was falling behind in the arms race.[128] Only in this period of heightened tensions was U.S. President Eisenhower able to repeal the McMahon Act that made it illegal for any Americans to share nuclear weapons design or production to foreigners. Yet the unprecedented 1958 Anglo-American nuclear agreement was predicated on strategic agreement, in particular a shared focus on the Soviet threat to Western Europe and a commitment to the strategy of massive retaliation to deter Soviet aggression.[129]

To deepen strategic cooperation, the United States and its allies and partners need to agree on the priority threats and an appropriate combined response to these challenges. This level of strategic alignment is likely only possible with a small number of states. More often, the United States and its allies and partners will need to understand each other's prioritized challenges and then, depending on the degree of commonality, craft a coordinated response that fits within the parameters of both parties' preferences.

U.S. and Japanese military planners participate in an integrated air and missile defense wargame in 2014. Wargaming can help deepen strategic integration between the United States and its allies and partners. (Nathan Allen/U.S. Air Force)

The first issue is: which threats, in what order, and what regions? For instance, the United States has specified China as its foremost long-term challenge, then Russia as the immediate threat, and finally other persistent challenges. Some European allies and partners might reverse the order between the two great powers, which could lead to a natural division of labor, with the United States focused more on the Indo-Pacific while its European allies and partners take the lead on deterring Russia. Yet the United States is also seeking to have its European allies play an increasing role in securing the Indo-Pacific. All parties face resource constraints and likely do not have the means to do everything, so it is important to determine each states' level of concern about both threats and the comparative advantages that each individual nation can bring to the table to develop a strong coordinated response that is realistic.

If both parties agree on the priority threat—in this instance, China—they then need to discuss when, where, and how they expect this threat to manifest. In other words, strategic integration requires the discussion and prioritization of specific scenarios and the development of a theory of victory and how to fight in these contexts, while protecting each partner's core national interests. Specifying the scenario is critically important to ensure that allies and partners are discussing the same context.[130] For instance, all might agree that China is the adversary that they are most worried about, but Japan might be focused on conflicts in the East China Sea, Taiwan on a Chinese blockade of the island, the United States on an invasion of Taiwan, and Australia on the South Pacific. Geography has a significant impact on the types of capabilities that would be most useful and where they need to be located. Similarly, it is important that allies and partners consider the same timeframe. If some are preparing for a near-term conflict, while another is developing plans for a possible war 10 or 15 years in the future, it is likely to lead to confusion and different conclusions.

Finally, the scenario needs to specify the type of threat and the adversary's likely strategy. Some NATO members may be focused on how Russia could employ gray zone tactics, such as little green men, disinformation, and subversion to seize some NATO territory, while others may be focused on a conventional Russian attack to rapidly overrun the Baltic capitals or to create a land bridge to Kaliningrad. Likewise in the Indo-Pacific, some nations might emphasize the day-to-day competition and the more likely forms of limited aggression, which involve gray zone coercion rather than a large-scale invasion. Scenarios need to identify the level of conflict and the United States and its allies and partners need to determine which part of the spectrum of conflict their planning is centered around. Establishing a small, prioritized list of scenarios for discussion and combined planning is critical for deepening strategic integration.

By focusing on a specific scenario, the allies can discuss their theories of deterrence, escalation management, and warfighting, and consider the roles, missions, and responsibilities that they would contemplate undertaking. Ideally, they would develop a sense of what capabilities each partner might contribute, and where there are gaps and unmet requirements. On issues where agreement cannot be reached, it is still important to have an honest strategic dialogue about military operations so that each side can make accurate assumptions about the others' plans and develop workarounds where the parties are not aligned. This type of strategic planning and integration should motivate and shape R&D and acquisition priorities, doctrine, and tactics.

In recent conflicts, coalitions rarely resolved these issues or only learned about different members' preferences, capabilities, and national caveats after the operation had begun. Disagreement was a nuisance that hindered tactical integration, but since these coalitions typically overmatched their adversaries, these issues did not determine the outcome of the conflict.[131] For example, during Operation Allied Force, the 1999 air war in defense of Kosovo, NATO allies disagreed on the intensity and pace of operations and the use of ground forces.[132] While these strategic disagreements may have prolonged the conflict, a more intense air campaign or the threat of a ground invasion could have prompted Milosevic to capitulate sooner; NATO eventually won.[133] Against a more capable adversary, lengthy deliberations about the appropriate strategy and concept of operations would likely have a deleterious impact on battlefield outcomes and could even lead to losing the war.

In the event of a war with China, an opposing coalition is not likely to have the time to agree on a strategy and concept of operations before it is defeated. In World War II, the Allies waited until after Japan attacked to tackle these core issues and to establish multilateral planning bodies. The American-British Combined Joint Chiefs of Staff planned the war across theaters and ultimately developed the Germany first strategy,[134] while the subsidiary American-British-Dutch-Australian (ABDA) Command only existed for a few weeks, during which time it presided over a string of losses to the Japanese.[135] ABDA may have simply been overmatched by the Japanese and doomed to fail, but poor coordination and planning ensured that it lost in a spectacularly rapid fashion. In part, the ABDA Command was an abject

failure because it was an Anglo-American strategy that was developed at the Arcadia Conference in December 1941 without consulting with the Dutch or Australians.[136] But ABDA's fate was sealed because of its incoherent strategy stemming from the differing political goals among the allies, and divergent perspectives on which locations the allies should prioritize defending.[137] The ABDA allies were never able to align national objectives with coalition objectives before the fighting started, resulting in national restrictions placed on the ABDA military commander, limiting his ability to respond effectively to Japanese attacks.

In addition to enabling effective and rapid combined wartime operations, multilateral planning in peacetime would be a strong signal of the countries' intent to oppose aggression, while improving their collective capability to do so. In other words, integrated planning with allies and partners will strengthen deterrence and reduce the likelihood that a war begins in the first place. There have been some recent gains in this area. Japan and the United States have drawn up military plans for a Taiwan crisis that include U.S. Marines deploying in a distributed fashion across the Nansei Islands with Japanese armed forces providing essential logistics, such as fuel and ammunition.[138] Reportedly, the United States is also discussing possible responses to a Chinese attack on Taiwan with Australia.[139] The American-Australian strategic planning is covering a range of possible contingencies or scenarios, including "other aspects of coercion that do not quite reach the level of a military invasion."[140]

However, these are nascent steps that only begin to sketch out the details for how the U.S., allied, and partner forces might work together to deter or defeat aggression by China. Vast uncertainties remain about the details and across the number of important scenarios under consideration. It is unclear how the war in Ukraine will end and what kind of threat Russia will pose to NATO in the future. It will likely take Russia some time to reconstitute its conventional forces, but it is currently led by a reckless leader who has demonstrated poor decision-making and has control over the largest nuclear arsenal in the world. Given these factors, while the war in Ukraine is the immediate threat, Russia will continue to pose an enduring challenge. Aside from uncertainties about the future environment, the lack of mutual understanding creates coalitions that are less capable than the sum of their constituent forces. Unclear strategies hinder the development of truly combined operations plans or at least plans that make reasonable assumptions about what each ally and partner might contribute and be willing to do. It also makes it difficult to create institutional arrangements that allow for aligned force designs and to ensure that existing forces are sufficiently interoperable, practiced, and conducting the type of missions that might be needed for the priority challenges.

Fixing this gap in mutual understanding could have a greater effect on U.S., allied, and partner security than large increases in defense budgets. This persistence is driven in part by divergent threat assessments, sensitivity regarding military planning, and, in some cases, a desire

FIGURE 2: INTEGRATED DETERRENCE FRAMEWORK

Level of Integration	Definition	Examples of Activities	Barriers
Tactical	Achieves interoperability often through compatible or common equiptment or shared tactics, techniques, and procedures	▪ Foreign military sales (FMS) ▪ Direct commercial sales (DCS) ▪ Multilateral exercises ▪ Training ▪ Combined operations ▪ Cooperative logistics ▪ Access and basing	▪ Slow and cumbersome FMS/DCS processes ▪ Political sensitivities and preferences ▪ Different budgets and resourcing levels ▪ Language and culture
Institutional	Incorporating allies and partners into core DoD organizations and decision-making processes	▪ Codevelopment of military capabilities ▪ Coproduction of military capabilities ▪ Information sharing ▪ Shared standards ▪ Liaison and exchange officers	▪ Export controls, especially International Traffic in Arms Regulation (ITAR) ▪ Political sensitivities and preferences ▪ Not Releaseable to Foreign Nationals (NOFORN) caveat ▪ Domestic politics ▪ Domestic economic concerns
Strategic	Common understanding of threats, scenarios, missions, roles and responsibilities, and national caveats	▪ Wargames ▪ Dialogues	▪ Political sensitivities and preferences ▪ Domestic politics ▪ Desire to avoid dependence

to protect domestic defense industries. There are indications, however, that the urgency of the threats posed by China and Russia and the scale and scope of necessary responses are helping to alleviate some of these concerns and creating an opportunity for substantive collaboration. Deepening strategic integration, therefore, is an essential building block of achieving integrated deterrence.

Applying the Framework

The framework laid out in the previous pages and summarized in Figure 2, is an ideal type and, in some respects, aspirational. In reality, integration can occur on a spectrum from low to high and integration across all three levels is not necessary nor even possible in many circumstances. Tactical integration often occurs without strategic integration, or with minimal strategic integration. For instance, in August 2022, the State Department approved Brazil's request to purchase 222 Javelin anti-tank missiles and supporting equipment for $74 million. This sale will deepen U.S.-Brazilian tactical integration and was justified as improving the security of an important regional partner.[141] Nonetheless, it is unclear that there is any significant strategic integration between Washington and Brasilia. The same sort of vague rationale is provided for the sale of 36 F-15ID aircraft and supporting parts to Indonesia for $13.9 billion in February 2022.[142]

Oftentimes, the United States approaches the issue of security cooperation with allies and partners with a focus on enhancing tactical interoperability without linking it to areas of strategic alignment. This may in part be because the United States frequently uses security cooperation to achieve the amorphous goal of expanded influence or a tactical goal, such as base access, that is divorced from the ally or partner's military capabilities.

A better approach would be for the United States to outline major threats, scenarios, and key operational challenges, and what it would ideally like an ally or partner to do in these situations.[143] Then DoD officials should consider whether the threat is likely, whether the ally or partner nation is truly capable of doing what they promised, and whether Washington is willing to trust that this partner will follow through. In turn, ally and partner nations use a threat-driven approach to determine what they would like from the United States in such a situation and what level of trust they have that the United States will follow through on a security commitment. Even if the United States cannot have open dialogue with the ally or partner to develop a nuanced understanding of their perceptions of threats and scenarios, it should be able to glean the broad contours of their views and be able to use this to inform its approach to enhancing tactical integration.

The United States will likely be able to achieve deep integration across the strategic, institutional, and tactical levels with only a select few allies and partners. If applied appropriately, the United States and its ally or partner begin at the strategic level and use frank discussions about priorities to tentatively agree to take on certain roles, responsibilities, and missions for different threats and different scenarios. Then enhanced strategic integration will facilitate institutional integration, which enables improved tactical integration.

A potential example of deep integration is AUKUS. Currently, AUKUS is an effort focused predominantly on enhancing institutional integration to further improve interoperability with two close American allies. There is general strategic alignment insomuch as the three parties agree to a free and open Indo-Pacific. More implicitly, it is acknowledged that this partnership is a response to China's increasingly assertive behavior. Yet at the current moment, the effort lacks sufficient strategic integration to justify the required institutional integration, which would help overcome the obstacles that AUKUS faces. If the three parties were to discuss threats and scenarios and consider the roles and missions that they would be comfortable with undertaking, they could better explain why certain technologies or capabilities were needed.

> **Fixing this gap in mutual understanding could have a greater effect on U.S., allied, and partner security than large increases in defense budgets.**

For instance, if China invades Taiwan, Australia may not plan on directly participating in the defense of the island, but instead support the U.S.-led effort by controlling chokepoints along critical sea lines of communication in the South Pacific. The mission of chokepoint control would help explain the desire for SSNs.[144] From the United States' perspective, this is desirable because it frees up the U.S. Navy to focus on defeating the invasion. Moreover, if Australia develops the bases and infrastructure to support SSN operations, U.S. attack submarines may be able to use Australian ports as a safe place to resupply and rearm.[145] Alternatively, Australian SSNs might be tasked with patrolling the Indian Ocean and attacking any Chinese ships that they encounter to establish sea control over

this vast body of water.[146] At present, such justifications for the most high-profile element of AUKUS are lacking from all three capitals.

Similarly, deepening strategic understanding about the priority threats and roles and responsibilities would help justify why the Pillar 2 elements of AUKUS laid out in the text box below have focused on the selected eight advanced capabilities. Some of these—like quantum, artificial intelligence (AI), and autonomy—may simply be so important and potentially revolutionary that the allies cannot afford to lose the military technical edge in these areas. But an understanding of how hypersonic weapons or unmanned autonomous vehicles might be used would help determine the combined requirements for these systems. Being able to explain how the AUKUS nations would operate together in different circumstances could sufficiently convince skeptical domestic audiences of the merits of these efforts and help overcome bureaucratic resistance to greater information and technology sharing.

AUKUS

In September 2021, Australia, the United Kingdom, and the United States (AUKUS) created an "enhanced trilateral security partnership" to deepen security, defense, industrial, and technological cooperation in the Indo-Pacific region.[147]

Stated Objectives

- Maintain "a free and open Indo-Pacific, and more broadly to an international system that respects human rights, the rule of law, and the peaceful resolution of disputes free from coercion."[148]
- President Biden stated that AUKUS will "enhance our shared ability to take on the threats of the 21st century."[149]
- Ensure that all partners have the most modern capabilities to defend against threats.[150]

Implicit Objectives

- Balance against China's growing military power and assertiveness.[151]

Pillar 1: Jointly Developed Nuclear-Powered Submarines for Australia

Key Developments

- Exchange of Naval Nuclear Propulsion Information Agreement, which entered into force on February 8, 2022
- New submarine base on Eastern Australia, which was announced March 7, 2022

Pillar 2: Advanced Capabilities

- Undersea robotics autonomous system project
- Quantum, initially focused on precision, navigation, and timing (PNT) trial experiment
- AI and autonomy
- Advanced cyber
- Hypersonic and counter hypersonic (added April 2022)
- Electronic warfare (added April 2022)
- Innovation (added April 2022)
- Information sharing (added April 2022)

Recommendations

The "center of gravity" of the 2022 NDS—integrating with allies and partners—is at risk of being dead on arrival because allies and partners need to be on board with the concept. The delayed release of the unclassified strategy limited the time available for allies and partners to ponder the NDS, consider their role in it, develop their nation's response, and get their bureaucracies aligned to support and implement the integrated deterrence concept. As such, the DoD has a long way to go in realizing integrated deterrence with allies and partners. With only two years left in the administration, time is not on the department's side and it must take immediate steps to actualize integrated deterrence.

To deepen strategic integration, the U.S. Department of Defense should:

Use this framework to develop a roadmap for bilateral integration, starting with an assessment of strategic alignment—especially prioritization of threats—and develop plans for further integration that conform with overlapping U.S. and ally and partner priorities.

Obviously, the United States will not achieve the same level of integration with all allies and partners, even the most capable ones. Holistic deep-scale integration may not be desired by an ally or partner or even remotely feasible given their policies and preferences. Other allies and partners may not be capable of integrating at all levels, given the current state of their defense industrial base and their military capabilities. An integration framework—specifically the one advanced in this report—can be used to find ways of deepening integration with allies and partners that flows from shared strategic priorities. This framework can also be used to think about the current level of integration with various allies and partners and the desired level of integration that is achievable. By considering the different levels and associated activities, both parties can systematically think through what they are currently doing, where they ideally want to be, and how to close the gap between the two by deepening tactical interoperability and perhaps institutional integration.

Specify what the United States is asking of democratic European and Indo-Pacific allies and partners, including a division of labor.

Integrated deterrence is an ambitious concept that could be read as asking more of allies or partners than they can reasonably support. Allies and partners are supposed to enhance tactical interoperability across all domains, while taking actions to strengthen deterrence across the spectrum of conflict. Additionally, the United States seems to be asking democratic European and Indo-Pacific allies and partners to counter China and Russia in both priority regions. To ensure the allied and partner line of effort within the NDS gets implemented, the DoD should articulate a proposed division of labor with each key ally and partner and then revise the concept based on dialogue and discussion until a common understanding is reached. This requires the DoD to identify what it is asking allies and partners in practical terms. Does integrated deterrence mean dividing and conquering and asking allies and partners to focus on their own security needs, or to support activities globally to uphold the liberal international order? Or does it mean some allies and partners focus on gray zone threats and day-to-day competition, while the United States deepens tactical integration with select allies and partners so that they can operate as a part of a seamless high-end coalition that can meet the China and Russia challenges and strengthen deterrence? These are fundamental questions that need to be answered to make the concept meaningful. This integration framework provides an opportunity for the department to specify what it is seeking from each ally or partner and how it can be implemented through tangible tactical and institutional outcomes.

Deepen strategic and operational planning with high-end allies and partners to improve multilateral responsiveness to Chinese and Russian aggression.

Additional strategic integration and discussions would facilitate a rapid response should Chinese or Russian aggression appear imminent. Moreover, developing a shared understanding of each country's capabilities, preferences, caveats, sensitivities, and interests is a

tangible way of strengthening deterrence in the near term by demonstrating both the willingness and improved capability to operate as a part of an integrated coalition opposing aggression. Bilateral and multilateral engagements will be necessary to begin these discussions, but a new way of engaging with allies and partners—one predicated on honesty and sharing—is required to truly enhance strategic integration. For allies and partners reticent to share information, wargaming and tabletop exercises may provide an opportunity to discuss some sensitivities within the confines of a fictional scenario.

To deepen institutional integration with allies and partners, the U.S. Department of Defense should:

Improve information sharing with allies and partners to enhance integration and to incentivize this behavior throughout its bureaucracy.

At the institutional level, one of the most significant obstacles to improved cooperation is the limits that the common U.S. classification practices place on information sharing. The DoD should adopt practices to move toward a culture that supports information sharing with key allies, and away from the current culture that often encourages over-classifying information and restricting its sharing with foreign governments. One option to do so is by making the NOFORN caveat require additional approval. This places the onus on a more senior person to assess whether the information really needs to be restricted only to Americans or whether it could be shared with some close allies and partners. Doing so would shift NOFORN from the default to the exception—at least for materials to be shared with highly capable allies and partners, or advanced groupings such as AUKUS. In addition, leadership in offices that require information sharing with allies to be effective should encourage the special security officers for that office to provide more detailed, proactive guidance to staff about information that is appropriate to share and should be shared.

Extend ITAR exemptions to all NTIB members to promote integration and resiliency.

ITAR licensing requirements significantly impede the realization of NTIB and other institutional technology development and industrial base integration efforts. They potentially could subvert the realization of AUKUS. The exemption granted to Canada should be granted to other NTIB members, the UK, and Australia, and expanded beyond the items currently identified in Canada's exemption.

Pursue codevelopment and coproduction of key capabilities to strengthen the combined defense industrial base capacity and improve resiliency.

Today, the combined defense industrial base of the United States and allies and partners is fragile and incapable of meeting the expected demands of a great-power war. Multilateral production and stockpiling of key weapons not only enhance deterrence by buttressing combined capabilities, but it also strengthens the defense industrial base by making it more adaptable, capable of weathering disruptions, and surging if needed. The DoD should consider expanding codevelopment and coproduction of capabilities where appropriate as a way of not only increasing the capacity of the defense industry but also creating redundancy in the industrial base and supply chains to reduce their vulnerability to disruption. Moreover, it often makes sense operationally for some capabilities, especially high-quantity items like missiles and munitions to be produced and stored closer to the likely operational areas in allied or partner countries.

Consider how to create a network and data architecture for JADC2 that can include allies and partners.

As the DoD develops a network to connect all of its forces and rapidly pass information to allow a higher level of coordination as a part of JADC2, it should take into consideration what kind of standards might allow for the incorporation of allies and partners. It should err toward open standards that can be modified and adapted as the situation changes if it hopes to incorporate any allies or partners in future operations.

To deepen tactical integration with allies and partners, the U.S. Department of Defense should:

Work with Congress, the National Security Council (NSC), and the State Department to reform the arms sales process to accelerate the provision of weapons that could be used to deter China or Russia either through direct commercial sales or foreign military sales to allies and partners.

American arms sales processes have evolved into a sclerotic system that lacks urgency and aim to protect an American technological advantage that has eroded. These controls do little to help the United States to regain its edge, but they continue to hinder the nation's ability to improve the capability of its allies and

partners through arms sales, which also benefit domestic industry. The DoD is not the only stakeholder in this process and must work with the NSC, State Department, and Congress to enact reforms. The U.S. government should launch an interagency initiative led by the NSC to reform arms sales to expedite the provision of weapons to allies and partners that could be used to deter China or Russia. This interagency initiative should regularly engage with the relevant congressional committees and leadership to find ways to accelerate the current FMS and DCS processes.

Adopt a multilateral exercise schedule that demonstrates interoperability and strengthens ally and partner capabilities in a high-end conflict.

The DoD and allies and partners should focus on undertaking multilateral exercises that deepen interoperability, and demonstrate capabilities relevant to a high-end conflict, specifically the enhanced capability and improved resolve to stand up to Chinese and Russian aggression. Although at some level practicing all types of military operations can facilitate interoperability for warfighting, to clearly strengthen deterrence, the DoD should undertake more multilateral exercises that practice large-scale combined warfighting operations.

Conclusion

This framework aims to provide the DoD with a roadmap for how it can deepen military integration with allies and partners to actualize its integrated deterrence concept and successfully implement the 2022 NDS. It also provides allies and partners with a way to conceptualize integrated deterrence in practical terms, enabling them to think about how to align their goals and interests with these collective security aspirations. While there are already steps being taken to enhance tactical, institutional, and strategic integration with select allies and partners, more needs to be done to shift integrated deterrence from rhetoric to reality. This requires removing some of the existing barriers to deeper multilateral cooperation and coordination and trying to deepen integration across all levels with the most trusted and capable allies and partners.

Integrated deterrence requires cooperation at all three levels highlighted in this report. But the one area most pivotal to the integrated deterrence concept is where deeper collaboration is most sorely and urgently needed. Strategic integration is the most difficult form of military cooperation, but it is arguably the most important. It has been pushed aside for years in favor of tactical cooperation—a more accessible type of integration that produces tangible results. The result has been ad hoc and unlinked legacy security cooperation activities that are not tied to a broader strategic objective.

Strategic integration should serve as the backbone of integrated deterrence and military cooperation. Choices about institutional and tactical integration should flow from decisions made at this level, and strategic planning can help align integration with allies and partners' interests and objectives. Without taking steps to develop a shared strategic vision, it will be difficult to overcome the barriers to deeper institutional and tactical integration. Strategic integration has been the missing link in collective deterrence efforts as, without it, it is difficult to craft a coherent narrative for why the United States and its allies and partners are making certain choices about capabilities, posture, and force structure decisions. Strategic planning serves as a useful step to create purposeful choices and activities, and provide a narrative for individual nations to make the case for resources to skeptical audiences and stakeholders within their political systems.

America and its allies and partners cannot wait until crisis or conflict to force greater strategic integration. For integrated deterrence to work, Washington and its allies and partners must emphasize and prioritize peacetime planning. Given the advanced threats facing the United States and its allies and partners, waiting until a crisis emerges may be too late as the speed of future conflict means coalitions will lack the time to figure out mechanisms for cooperation or overcome strategic disagreements.

The time to work on strategic integration is now. Doing so will produce gains in collective security—both now and in the future. Deepening institutional and tactical integration does not happen overnight as acquisition, R&D, and coproduction all have long lead times, pushing Washington to make decisions about these now to have the capabilities required to deter and, if needed, defeat future threats from China and Russia. But in the meantime, all these activities—peacetime strategic and operational planning, demonstrating existing tactical interoperability, and making smart collective choices about future capabilities—provide signals of credibility and resolve that enhance deterrence and keep China and Russia from aggression while these efforts bear fruit.

1. "Secretary Lloyd J. Austin III Message to the Force," U.S. Department of Defense, press release, March 4, 2021, https://www.defense.gov/News/Releases/Release/Article/2525149/secretary-lloyd-j-austin-iii-message-to-the-force/.

2. Stacie Pettyjohn and Jennie Matuschak, "Long Shadows: Deterrence in a Multipolar Nuclear World," (Center for a New American Security, May 2022), https://www.cnas.org/publications/reports/long-shadows-deterrence-in-a-multipolar-nuclear-age.

3. Department of Defense, Fact Sheet: 2022 National Defense Strategy, March 28, 2022, https://media.defense.gov/2022/Mar/28/2002964702/-1/-1/1/NDS-FACT-SHEET.PDF; and Department of Defense, 2022 National Defense Strategy of the United States of America, (October 27, 2022), https://media.defense.gov/2022/Oct/27/2003103845/-1/-1/1/2022-NATIONAL-DEFENSE-STRATEGY-NPR-MDR.PDF.

4. Andrea Kendall-Taylor and Michael Kofman, "Russia is Down. But It's Not Out," The New York Times, June 2, 2022, https://www.nytimes.com/2022/06/02/opinion/russia-ukraine-war-nato.html.

5. Department of Defense, 2022 National Defense Strategy of the United States of America.

6. Stacie Pettyjohn, Becca Wasser, and Jennie Matuschak, "Risky Business: Future Strategy and Force Options for the Defense Department," (Center for a New American Security, July 20, 2021), https://www.cnas.org/publications/reports/risky-business-future-strategy-and-force-options-for-the-defense-department.

7. Government Accountability Office, Defense Industrial Base: DOD Should Take Actions to Strengthen Its Risk Mitigation Approach, GAO-22-104154 (July 7, 2022), https://www.gao.gov/products/gao-22-104154; and Department of Defense, Fiscal Year 2019 Industrial Capabilities: Report to Congress, (June 23, 2020), https://www.businessdefense.gov/docs/resources/USA000954-20_RPT_Subj_FY19_ICR_07092020.pdf.

8. Department of Defense, 2022 National Defense Strategy of the United States of America.

9. Department of Defense, Fact Sheet: 2022 National Defense Strategy; and C. Todd Lopez, "Defense Secretary Says 'Integrated Deterrence' is Cornerstone of U.S. Defense," Department of Defense, April 30, 2021, https://www.defense.gov/News/News-Stories/Article/Article/2592149/defense-secretary-says-integrated-deterrence-is-cornerstone-of-us-defense/.

10. Department of Defense, 2022 NDS Fact Sheet: Integrated Deterrence, (March 28, 2022), https://media.defense.gov/2022/Mar/28/2002964702/-1/-1/1/NDS-FACT-SHEET.PDF.

11. Department of Defense, 2022 National Defense Strategy of the United States of America; and Department of Defense, 2022 NDS Fact Sheet: Integrated Deterrence.

12. Department of Defense, 2022 National Defense Strategy of the United States of America.

13. Department of Defense, 2022 NDS Fact Sheet: Integrated Deterrence.

14. Authors' conversations with foreign government official(s).

15. Department of Defense, Summary of the 2018 National Defense Strategy of the United States (January 19, 2018), https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

16. Authors' conversation with foreign government official(s).

17. "Joint Leaders Statement on AUKUS," Prime Minister of Australia, media statement, September 16, 2021, https://web.archive.org/web/20210927191438/https://www.pm.gov.au/media/joint-leaders-statement-aukus; and the White House, Fact Sheet: Quad Leaders' Tokyo Summit 2022 (May 23, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/23/fact-sheet-quad-leaders-tokyo-summit-2022/.

18. Colin Clark, "AUKUS at 1 Year: Aussie Defense Brief Says Navy Faces 'High Risks' in Modernization Race," Breaking Defense: Indo-Pacific, September 15, 2022, https://breakingdefense.com/2022/09/aukus-at-1-year-aussie-defense-brief-says-navy-faces-high-risks-in-modernization-race/; Jennifer D.P. Moroney and Alan Tidwell, "Making AUKUS work," ASPI: Australian Strategic Policy Institute, March 22, 2022, https://www.aspistrategist.org.au/making-aukus-work/; and Jennifer D.P. Moroney, "The Challenges to Making AUKUS Work," Security & Defence PLuS, https://securityanddefenceplus.plusalliance.org/essays/making-aukus-work/.

19. Dhruva Jaishankar and Tanvi Madan, "The Quad Needs a Harder Edge," Foreign Affairs, May 19, 2022, https://www.foreignaffairs.com/articles/world/2022-05-19/quad-needs-harder-edge; and Lisa Curtis, et al., "Operationalizing the Quad," (Center for a New American Security, June 30, 2022), https://www.cnas.org/publications/reports/operationalizing-the-quad. For more on the scale issue, which is the largest challenge facing the maritime domain awareness initiative, see Zack Cooper and Gregory Poling, "The Quad Goes to Sea," War on the Rocks, May 24, 2022, https://warontherocks.com/2022/05/the-quad-goes-to-sea/.

20. Authors' conversations with foreign government official(s).

21. Department of Defense, 2022 National Defense Strategy of the United States of America.

22. Department of Defense, 2022 National Defense Strategy of the United States of America.

23. Richard Fontaine and Dr. Colin Kahl, "Opening Session: Security in the Balance with Dr. Colin Kahl" (Center for a New American Security, June 17, 2022), https://conference.cnas.org/session/opening-keynotes-a-new-american-security/.

24. North Atlantic Treaty Organization, The North Atlantic Treaty, April 4, 1949, https://www.nato.int/cps/en/natolive/official_texts_17120.htm.

25. Claudette Roulo, "Alliances vs. Partnerships," U.S. Department of Defense, March 22, 2019, https://www.defense.gov/News/Feature-Stories/story/Article/1684641/alliances-vs-partnerships/.

26. Colin Kahl, "The 2022 National Defense Strategy: A Conversation with Colin Kahl" (Brookings Institution, November 4, 2022), https://www.brookings.edu/events/the-2022-national-defense-strategy-a-conversation-with-colin-kahl/.

27. Department of Defense, 2022 National Defense Strategy of the United States of America, 10, 14-16.

28. Department of Defense, 2022 National Defense Strategy of the United States of America, 15.

29. We are not arguing that the only measure of military power is equipment or technology. The war in Ukraine has reinforced the long-held truth that nonmaterial factors, especially training and morale, play a significant role in combat outcomes.

30. John A. Tirpak, "LaPlante on Why Weapon Production Constitutes Deterrence," Air & Space Forces Magazine, October 26, 2022, https://www.airandspaceforces.com/laplante-on-why-weapon-production-constitutes-deterrence/.

31. Alex Vershinin, "The Return of Industrial Warfare," Royal United Services Institute, June 17, 2022, https://www.rusi.org/explore-our-research/publications/commentary/return-industrial-warfare.

32. Stacie L. Pettyjohn and Hannah Dennis, "Precision and Posture: Assessing the FY23 Budget Request," (Center for a New American Security, November 2022), https://www.cnas.org/publications/reports/precision-and-posture-defense-spending-tre.

33. John A. Tirpak, "Climbing Out of the Munitions Hole," Air & Space Forces Magazine, March 22, 2019, https://www.airandspaceforces.com/article/climbing-out-of-the-munitions-hole/.

34. Department of Defense, 2022 National Defense Strategy of the United States of America, 19–20; and Department of Defense, 2022 NDS Fact Sheet: Integrated Deterrence.

35. Department of Defense, 2022 National Defense Strategy of the United States of America, 14.

36. Department of Defense, 2022 National Defense Strategy of the United States of America, 14.

37. Sophie Arts and Steven Keil, "Flexible Security Arrangements and the Future of NATO Partnerships," (The German Marshall Fund of the United States, February 2021), 3, https://www.gmfus.org/sites/default/files/Arts%2520%2526%2520Keil%2520-%2520NATO%2520partnerships%2520formats.pdf.

38. Arts and Keil, "Flexible Security Arrangements and the Future of NATO Partnerships," 6–9.

39. Dr. William A. LaPlante and Sasha N. Baker, "Under Secretary of Defense (Acquisition and Sustainment) LaPlante and Deputy Under Secretary of Defense (Policy) Baker Hold a Media Roundtable on the Recent Meeting of the National Armaments Directors Under the Auspices of the Ukraine Defense Contract Group," (September 30, 2022), https://www.defense.gov/News/Transcripts/Transcript/Article/3176537/under-secretary-of-defense-acquisition-and-sustainment-laplante-and-deputy-unde/.

40. Thomas Wilkins, "A Hub-and-Spokes 'Plus' Model of US Alliances in the Indo-Pacific: Towards a New 'Networked' Design," Asian Affairs 53, no. 3 (July 19, 2022).

41. Patrick Gerard Buchan and Benjamin Rimland, "Defining the Diamond: The Past, Present, and Future of the Quadrilateral Security Dialogue," (Center for Strategic & Integrated Studies, March 16, 2020).

42. Jaishankar and Madan, "The Quad Needs a Harder Edge"; and Dhruva Jaishankar and Tanvi Madan, "How the Quad Can Match the Hype," Foreign Affairs, April 15, 2021, https://www.foreignaffairs.com/articles/united-states/2021-04-15/how-quad-can-match-hype.

43. Department of Foreign Affairs and Trade of Australia, Australia-Japan Joint Declaration on Security Cooperation, (October 22, 2022), https://www.foreignaffairs.com/articles/united-states/2021-04-15/how-quad-can-match-hype.

44. Gregg A. Brazinsky, "Achieving a More Durable Japan-South Korea Rapprochement," (United States Institute of Peace, September 6, 2022), https://www.usip.org/publications/2022/09/achieving-more-durable-japan-south-korea-rapprochement; and Kathryn Botto, "Overcoming Obstacles to Trilateral U.S.-ROK-Japan Interoperability," (Carnegie Endowment for International Peace, March 18, 2020), https://carnegieendowment.org/files/Korea_Net_Assesment_2020.pdf.

45. Bruce Vaughn, Derek E. Mix, and Paul Belkin, Congressional Research Service, The United Kingdom, France and the Indo-Pacific, (August 5, 2021), https://sgp.fas.org/crs/row/IF11052.pdf.

46. Department of Foreign Affairs and Trade of Australia, Australia-Japan Joint Declaration on Security Cooperation; and Kana Inagaki and Demetri Sevastopulo, "Japan to Sign Military Pact with UK as Allies Eye China Threat," Financial Times, November 6, 2022, https://www.ft.com/content/6ea15304-551b-4161-af6c-38cccf56d40d.

47. HM Government of the United Kingdom, Global Britain in a Competitive Age, (March 2021), 60, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/975077/Global_Britain_in_a_Competitive_Age-_the_Integrated_Review_of_Security__Defence__Development_and_Foreign_Policy.pdf.

48. Government of France, France's Indo-Pacific Strategy, (February 2022), 3, https://www.diplomatie.gouv.fr/IMG/pdf/en_dcp_a4_indopacifique_022022_v1-4_web_cle878143.pdf.

49. The White House, National Security Strategy, (October 2022), https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf.

50. Authors' conversation with US Government official(s).

51. North Atlantic Treaty Organization, Collective Defence and Article 5, (September 20, 2022), https://www.nato.int/cps/en/natohq/topics_110496.htm.

52. Pål Jonson, "The Debate about Article 5 and Its Credibility," No. 58 (North Atlantic Treaty Organization Defense College, May 2010), 11, https://www.files.ethz.ch/isn/116548/rp_58.pdf; Erica D. Lonergan and Sara B. Moller, "NATO's Credibility Is on the Line with Its Cyber Defense Pledge. That's a Bad Idea." POLITICO (April 27, 2022) https://www.politico.com/news/magazine/2022/04/27/nato-credibility-cyber-defense-pledge-russia-ukraine-00027829; and Stacie L. Pettyjohn and Becca Wasser, "Competing in the Gray Zone," (RAND Corporation, 2019), https://www.rand.org/pubs/research_reports/RR2791.html.

53. The White House, Office of the Press Secretary, "Remarks by President Biden on the United Efforts of the Free World to Support the People of Ukraine," The Royal Castle in Warsaw, Poland, March 26, 2022, https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/03/26/remarks-by-president-biden-on-the-united-efforts-of-the-free-world-to-support-the-people-of-ukraine/.

54. The White House, Fact Sheet: The 2022 NATO Summit in Madrid, (June 29, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/06/29/fact-sheet-the-2022-nato-summit-in-madrid/; and North Atlantic Treaty Organization, NATO's Response to Russia's Invasion of Ukraine, (October 18, 2022), https://www.nato.int/cps/en/natohq/topics_192648.htm.

55. Jeremy Schapiro, "The Coming Transatlantic Rift over Ukraine," European Council on Foreign Relations, October 3, 2022, https://ecfr.eu/article/the-coming-transatlantic-rift-over-ukraine/; and Judy Dempsey, "Europe's Fading Unity over Ukraine," Carnegie Europe, April 21, 2022, https://carnegieeurope.eu/strategiceurope/86948.

56. Prime Minister of Japan and His Cabinet, The Constitution of Japan, (November 3, 1946), https://japan.kantei.go.jp/constitution_and_government_of_japan/constitution_e.html.

57. Ministry of Foreign Affairs of Japan, The Guidelines for Japan-U.S. Defense Cooperation, (April 25, 2017), https://www.mofa.go.jp/region/n-america/us/security/guideline2.html; "Statement by Minister for Foreign Affairs of Japan on Adoption of the 'National Security Strategy (NSS)'" Ministry of Foreign Affairs of Japan, press release, December 7, 2013, https://www.mofa.go.jp/press/release/press4e_000141.html; Ministry of Defense of Japan, Defense of Japan 2022, (August 2022), https://www.mod.go.jp/en/publ/w_paper/wp2022/DOJ2022_EN_Full_02.pdf; Masahiro Kurosaki, "Japan's Evolving Position on the Use of Force in Collective Self-Defense," Lawfare, August 23, 2018, https://www.lawfareblog.com/japans-evolving-position-use-force-collective-self-defense; and authors' conversation with foreign government official(s).

58. Authors' conversation with foreign government official(s).

59. Becca Wasser, et al., "The Air War Against the Islamic State: The Role of Airpower in Operation Inherent Resolve," (RAND Corporation, 2021), https://www.rand.org/pubs/research_reports/RRA388-1.html; and Colonel Douglas V. Mastriano, "Faust and the Padshah Sphinx: Reshaping the NATO Alliance To Win In Afghanistan," (U.S. Army War College, February 24, 2010), https://apps.dtic.mil/sti/pdfs/ADA518150.pdf.

60. Authors' conversation with foreign government official(s).

61. Authors' conversation with foreign government official(s).

62. Authors' conversation with foreign government official(s).

63. Department of Defense, Audit of the Development and Maintenance of Department of Defense Security Classification Guides, (June 21, 2022), https://www.dodig.mil/reports.html/Article/3071578/audit-of-the-development-and-maintenance-of-department-of-defense-security-clas/.

64. Michael D. Shear, "Citing U.S. Intelligence, Biden Says Putin Has Decided to Invade Ukraine," The New York Times, February 18, 2022, https://www.nytimes.com/live/2022/02/18/world/russia-ukraine-biden-putin.

65. United States Senate, Report on Whether Public Statements Regarding Iraq by U.S. Government Officials Were Substantiated by Intelligence Information, (June 5, 2008), https://www.congress.gov/congressional-report/110th-congress/senate-report/345/1?s=1&r=279; and authors' conversation with foreign government official(s).

66. Christopher G. Pernin, et al., "Targeted Interoperability: A New Imperative for Multinational Operations," (RAND Corporation, 2019), https://www.rand.org/pubs/research_reports/RR2075.html.

67. Karl P. Mueller, ed., "Precision and Purpose: Airpower in the Libyan Civil War," (RAND Corporation, 2015), 263–264, 356–357, 370–371, https://www.rand.org/pubs/research_reports/RR676.html.

68. "The International Traffic in Arms Regulations (ITAR)," U.S. Department of State Directorate of Defense Trade Controls, https://www.pmddtc.state.gov/ddtc_public?id=ddtc_kb_article_page&sys_id=24d528fddbfc930044f9ff621f961987.

69. Valerie Bailey Grasso, Congressional Research Service, The Berry Amendment: Requiring Defense Procurement to Come from Domestic Sources, (February 24, 2014), https://sgp.fas.org/crs/natsec/RL31236.pdf; and authors' conversation with foreign government official(s).

70. John R. Hoehn, Congressional Research Service, Joint All-Domain Command and Control (JADC2), (January 21, 2022), https://sgp.fas.org/crs/natsec/IF11493.pdf.

71. Department of Defense, 2022 National Defense Strategy of the United States of America, 14.

72. Authors' conversation with foreign government official(s).

73. Authors' conversation with foreign government official(s).

74. Bruno Tertrais, "French Nuclear Deterrence Policy, Forces, and Future: A Handbook," (Fondation pour la Recherche Stratégique, February 2020), 16, https://www.frstrategie.org/sites/default/files/documents/publications/recherches-et-documents/2020/202004.pdf.

75. Thomas Schelling, Arms and Influence, (New Haven, CT: Yale University Press, 1966), 69–90.

76. Authors' conversation with foreign government official(s).

77. Department of Defense, 2022 National Defense Strategy of the United States of America, 14.

78. Authors' conversation with foreign government official(s).

79. Pettyjohn and Wasser, "Competing in the Gray Zone."

80. Department of Defense, "Fact Sheet: 2022 National Defense Strategy," 2.

81. Department of Defense, 2022 National Defense Strategy of the United States of America, 2.

82. The DoD defines interoperability as: "The ability to operate in synergy in the execution of assigned tasks. The condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users." Department of Defense, Department of Defense Dictionary of Military and Associated Terms, (February 15, 2016), 118, https://irp.fas.org/doddir/dod/dictionary.pdf.

83. Chris Dougherty, "More than Half the Battle: Information and Command in a New American Way of War," (Center for a New American Security, May 20, 2021), https://www.cnas.org/publications/reports/more-than-half-the-battle.

84. Myron Hura, et al., "Interoperability: A Continuing Challenge in Coalition Air Operations," (RAND Corporation, 2000), 107–108, https://www.rand.org/pubs/monograph_reports/MR1235.html.

85. Benjamin S. Lambeth, "NATO's Air War for Kosovo: A Strategic and Operational Assessment," (RAND Corporation, 2001), 167, https://www.rand.org/pubs/monograph_reports/MR1365.html.

86. Mike Yeo, "Record Number of Tankers Participate in Pitch Black Exercise," Defense News, September 8, 2022, https://www.defensenews.com/training-sim/2022/09/08/record-number-of-tankers-participate-in-pitch-black-exercise/.

87. Sandra Erwin, "Space Force Delivers First of Two U.S. Payloads to Launch on Space Norway's Arctic Broadband Mission," SpaceNews, June 9, 2022, https://spacenews.com/space-force-delivers-first-of-two-u-s-payloads-to-launch-on-space-norways-arctic-broadband-mission/; and Nathan Strout, "How 2 Space Norway Satellites Will Help the Air Force in the Arctic," C4ISRNet, July 5, 2019, https://www.c4isrnet.com/battlefield-tech/2019/07/05/how-2-space-norway-satellites-will-help-the-air-force-in-the-arctic/.

88. "USSF's EPS-R Program on Schedule for Historic Polar Mission," U.S. Space Force, press release, October 29, 2021, https://www.ssc.spaceforce.mil/Newsroom/Article-Display/Article/2827813/ussfs-eps-r-program-on-schedule-for-historic-polar-mission.

89. Mallory Shelbourne, "Blended U.S. Marine, U.K. Royal Air Force Air Wing Aboard HMS Queen Elizabeth Will be Largest F-35 Deployment to Date," U.S. Naval Institute, April 29, 2021, https://news.usni.org/2021/04/29/blended-u-s-marine-u-k-royal-air-force-air-wing-aboard-hms-queen-elizabeth-will-be-largest-f-35-deployment-to-date.

90. Megan Eckstein, "U.S., U.K. Navies Working to Achieve 'Interchangeability' in Carrier Forces, Collaboration on Unmanned and AI," U.S. Naval Institute, October 20, 2020, https://news.usni.org/2020/10/20/u-s-u-k-navies-working-to-achieve-interchangeability-in-carrier-forces-collaboration-on-unmanned-and-ai.

91. LaPlante discussed interchangeable artillery rounds: LaPlante and Baker, "Under Secretary of Defense (Acquisition and Sustainment) LaPlante and Deputy Under Secretary of Defense (Policy) Baker Hold a Media Roundtable on the Recent Meeting of the National Armaments Directors Under the Auspices of the Ukraine Defense Contract Group."

92. Hura, et al., "Interoperability: A Continuing Challenge in Coalition Air Operations," 12.

93. Nathan J. Lucas and Michael J. Vassalotti, Congressional Research Service, Transfer of Defense Articles: Sale and Export of U.S.-Made Arms to Foreign Entities, (April 30, 2020), https://sgp.fas.org/crs/weapons/R46337.pdf.

94. "Warships from Australia, Japan, and U.S. Join Forces in Maritime Partnership Exercise 2021," U.S. Navy, Carrier Strike Group One Public Affairs, press release, October 18, 2021, https://www.navy.mil/Press-Office/News-Stories/Article/2814419/warships-from-australia-japan-uk-and-us-join-forces-in-maritime-partnership-exe//.

95. Wasser, et al., "The Air War Against the Islamic State," 32–33.

96. Moroney, et al, "Working with Allies and Partners: A Cost-Based Analysis of U.S. Air Forces in Europe," 1.

97. Our definition of institutions aligns with a broad conception of the term in the international relations literature, which stipulates that institutions are "relatively stable sets of related constitutive, regulative and procedural norms and rules." John Duffield, "What Are International Institutions?" International Studies Review 9, no. 1 (March 2007): 7–8, https://scholarworks.gsu.edu/political_science_facpub/39/; see also Stephen Krasner, International Regimes, (Ithaca, NY: Cornell University Press, 1983), 1.

98. Angela O'Mahony, et al., "Prioritizing Security Cooperation with Highly Capable U.S. Allies: Framing Army-to-Army Partnerships," (RAND Corporation, 2022), 20, https://www.rand.org/pubs/research_reports/RRA641-1.html.

99. Corey Pfluke, "A History of the Five Eyes Alliance: Possibility for Reform and Additions," Comparative Strategy 38, no. 4 (August 2019): https://www.tandfonline.com/doi/abs/10.1080/01495933.2019.1633186?journalCode=ucst20.

100. Pfluke, "A History of the Five Eyes Alliance: Possibility for Reform and Additions," 305. For more on how the alliance has evolved and the details known about sharing see Scarlet Kim and Paulina Perlin, "Newly Disclosed NSA Documents Shed Further Light on Five Eyes Alliance," Lawfare, March 25, 2019, https://www.lawfareblog.com/newly-disclosed-nsa-documents-shed-further-light-five-eyes-alliance.

101. Authors' conversations with foreign government official(s).

102. Department of Defense, Memorandum: Use of the 'Not Releasable to Foreign Nationals' (NOFORN) Caveat on Department of Defense (DoD) Information, (May 17, 2005), https://sgp.fas.org/othergov/dod/noforn051705.pdf.

103. Department of Defense, Department of Defense International Science and Technology Engagement Strategy, (October 2020), 1, https://www.cto.mil/wp-content/uploads/2020/12/Signed-International-ST-Engagement-Strategy.pdf.

104. "The Technical Cooperation Program," Australian Government Department of Defence, https://www.dst.defence.gov.au/partnership/technical-cooperation-program.

105. O'Mahony, et al., "Prioritizing Security Cooperation with Highly Capable U.S. Allies," 22.

106. "Co-production Programs," Defense Acquisition University, https://www.dau.edu/glossary/Pages/GlossaryContent.aspx?itemid=27157.

107. U.S. Congress, Office of Technology Assessment, Arming Our Allies: Cooperation and Competition in Defense Technology, OTA-ISC-449 (May 1990), 97, https://ota.fas.org/reports/9005.pdf.

108. Joe Saballa, "Poland to Acquire 500 HIMARS From US," The Defense Post, June 7, 2022, https://www.thedefensepost.com/2022/06/07/poland-himars-us/.

109. U.S. Congress, Office of Technology Assessment, Arming Our Allies: Cooperation and Competition in Defense Technology, 98.

110. Mark A. Lorell, "Troubled Partnership: An Assessment of U.S.-Japan Collaboration on the FS-X Fighter," (RAND Corporation, 1995), https://www.rand.org/pubs/monograph_reports/MR612z1.html.

111. The White House, Fact Sheet: Implementation of the Australia – United Kingdom – United States Partnership (AUKUS), (April 5, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/05/fact-sheet-implementation-of-the-australia-united-kingdom-united-states-partnership-aukus/.

112. Moroney, "The Challenges to Making AUKUS Work."

113. LaPlante and Baker, "Under Secretary of Defense (Acquisition and Sustainment) LaPlante and Deputy Under Secretary of Defense (Policy) Baker Hold a Media Roundtable on the Recent Meeting of the National Armaments Directors Under the Auspices of the Ukraine Defense Contract Group."

114. Heidi M. Peters, Congressional Research Service, Defense Primer: The National Technology and Industrial Base, (February 3, 2021), 1, https://sgp.fas.org/crs/natsec/IF11311.pdf.

115. Peters, Congressional Research Service, Defense Primer: The National Technology and Industrial Base, 2; and William Greenwalt, "Leveraging the National Technology Industrial Base To Address Great-Power Competition: The Imperative to Integrated Industrial Capabilities of Close Allies," (Atlantic Council, April 2019), 5, https://atlanticcouncil.org/wp-content/uploads/2019/04/Leveraging_the_National_Technology_Industrial_Base_to_Address_Great-Power_Competition.pdf.

116. For more on export controls see Ian F. Fergusson, Paul K. Kerr, and Christopher A. Casey, Congressional Research Service, The U.S. Export Control System and the Export Control Reform Act of 2018, (June 7, 2021), 4, https://crsreports.congress.gov/product/pdf/R/R46814.

117. Martijn Rasser, "Rethinking Export Controls: Unintended Consequences and the New Technological Landscape" (Center for a New American Security, December 8, 2020) https://www.cnas.org/publications/reports/rethinking-export-controls-unintended-consequences-and-the-new-technological-landscape; Greenwalt, "Leveraging the National Industrial Base To Address Great-Power Competition, 9.

118. Greenwalt, "Leveraging the National Industrial Base To Address Great-Power Competition, 10.

119. Peters, Congressional Research Service, Defense Primer: The National Technology and Industrial Base, 2.

120. "Standardization," North Atlantic Treaty Organization, January 23, 2017, https://www.nato.int/cps/en/natohq/topics_69269.htm; NATO Interoperability Standards and Profiles, North Atlantic Treaty Organization, May 26, 2021, 2, https://nhqc3s.hq.nato.int/Apps/Architecture/NISP/pdf/NISP-Vol1-v14-release.pdf.

121. O'Mahony, et al., "Prioritizing Security Cooperation with Highly Capable U.S. Allies," 18.

122. LaPlante and Baker, "Under Secretary of Defense (Acquisition and Sustainment) LaPlante and Deputy Under Secretary of Defense (Policy) Baker Hold a Media Roundtable on the Recent Meeting of the National Armaments Directors Under the Auspices of the Ukraine Defense Contract Group."

123. Jon Schmid, et al. "The Role of Standards in Fostering Capability Evolution: Does Design Matter? Insights from Interoperability Standards," (RAND Corporation, 2022), 7, https://www.rand.org/pubs/research_reports/RRA1576-1.html.

124. Schmid, et al., "The Role of Standards in Fostering Capability Evolution," 17–19.

125. Schmid, et al., "The Role of Standards in Fostering Capability Evolution," 40.

126. O'Mahony, et al., "Prioritizing Security Cooperation with Highly Capable U.S. Allies," 43.

127. Hura, et al., "Interoperability," 10.

128. John Baylis, "The 1958 Anglo-American Mutual Defence Agreement: The Search for Nuclear Interdependence," Journal of Strategic Studies 31, no.3 (2008): 436-440 https://www.tandfonline.com/doi/abs/10.1080/01402390802024726; and Jennifer Mackby and Paul Cornish, U.S.-UK Nuclear Cooperation after 50 Years, (Washington: CSIS, 2008), 8, https://www.csis.org/programs/international-security-program/project-nuclear-issues/us-uk-nuclear-cooperation-after-50.

129. Kevin Harrison, "From Independence to Dependence: Blue Streak, Skybolt, Nassau and Polaris," The RUSI Journal 127, no. 4 (1982): 25, https://www.tandfonline.com/doi/abs/10.1080/03071848208523423.

130. Pernin, et al., "Targeted Interoperability," 22.

131. O'Mahony, et al., "Prioritizing Security Cooperation with Highly Capable U.S. Allies," 44.

132. John E. Peters, et al., "European Contributions to Operation Allied Force: Implications for Transatlantic Cooperation," (RAND Corporation, 2001), 36–51, https://www.rand.org/pubs/monograph_reports/MR1391.html.

133. Lambeth, "NATO's Air War for Kosovo," 234–241.

134. National Archives and Records Service, Federal Records of World War II Volume II, National Archives Publication No. 51-8 (1951), 2.

135. Department of Defense, Joint Staff, The Arcadia Conference: December 1941-January 1942, (September 26, 1973), 179–180, https://www.jcs.mil/Portals/36/Documents/History/WWII/Arcadia3.pdf.

136. MAJ Rene W.A. van den Berg, "Unchained Interests: American-British-Dutch-Australian Command 1942," (United States Army Command and General Staff College, January 2014), https://apps.dtic.mil/sti/pdfs/ADA612211.pdf.

137. van den Berg, "Unchained Interests," 90–92.

138. Kiyoshi Takenaka, "Japan, U.S. draw up plan for any Taiwan emergency -Kyodo," Reuters, December 23, 2021, https://www.reuters.com/world/china/japan-us-draw-up-joint-operation-plan-any-taiwan-emergency-kyodo-2021-12-23/.

139. Jason Scott, "U.S. in Talks With Australia on Response to War Over Taiwan, Diplomat Says," Bloomberg, March 31, 2021, https://www.bloomberg.com/news/articles/2021-04-01/u-s-in-talks-with-australia-on-taiwan-response-diplomat-says.

140. Andrew Greene, "Australia discussing 'contingency' plans with United States over possible Taiwan conflict," ABC News Australia, March 21, 2021, https://www.abc.net.au/news/2021-04-01/australia-discuss-contingency-plans-us-possible-conflict-taiwan/100043826.

141. Defense Security Cooperation Agency, Brazil – Javelin Missiles, (August 9, 2022), https://www.dsca.mil/press-media/major-arms-sales/brazil-javelin-missiles.

142. Defense Security Cooperation Agency, Indonesia – F-15ID Aircraft, (February 10, 2022), https://www.dsca.mil/press-media/major-arms-sales/indonesia-f-15id-aircraft.

143. This is a threat-driven approach to force planning: David A. Ochmanek, "Improving Force Development Within the U.S. Department of Defense," (RAND Corporation, 2018), 9, https://www.rand.org/pubs/perspectives/PE302.html; see also Michael J. Mazarr, et al., "The U.S. Department of Defense's Planning Process," (RAND Corporation, 2019), 12–13, https://www.rand.org/pubs/research_reports/RR2173z2.html.

144. Jim Thomas, Zack Cooper, and Iskander Rehman, "Gateway to the Indo-Pacific," (Center for Strategic and Budgetary Assessment, 2013), 24–26, https://csbaonline.org/research/publications/gateway-to-the-indo-pacific-australian-defense-strategy-and-the-future-of-t.

145. Thomas, Cooper, Rehman, "Gateway to the Indo-Pacific," 20–21.

146. Thomas, Cooper, Rehman, "Gateway to the Indo-Pacific," 26–28.

147. Department of Defence of Australia, AUKUS: Trilateral Security Partnership Fact Sheet, (April 5, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/04/05/fact-sheet-implementation-of-the-australia-united-kingdom-united-states-partnership-aukus.

148. The White House, Fact Sheet: Implementation of the Australia – United Kingdom – United States Partnership (AUKUS).

149. The White House, Office of the Press Secretary, "Remarks by President Biden, Prime Minister Morrison of Australia, and Prime Minister Johnson of the United Kingdom Announcing the Creation of AUKUS," White House Briefing Room, September 15, 2021, https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/09/15/remarks-by-president-biden-prime-minister-morrison-of-australia-and-prime-minister-johnson-of-the-united-kingdom-announcing-the-creation-of-aukus/.

150. The White House, Office of the Press Secretary, "Remarks by President Biden, Prime Minister Morrison of Australia, and Prime Minister Johnson of the United Kingdom Announcing the Creation of AUKUS."

151. Derek E. Mix and Bruce Vaughn, Congressional Research Service, AUKUS and Indo-Pacific Security, (May 19, 2022), 1, https://crsreports.congress.gov/product/pdf/IF/IF12113.

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