

# AUKUS Pillar Two

## *Advancing the Capabilities of the United States, United Kingdom, and Australia*

By John Christianson, Sean Monaghan, and Di Cooke

JULY 2023

### THE ISSUE

*The United States and its allies are in a strategic competition with China in which the race to develop and deploy emerging technologies will play a decisive role. Pillar Two of the trilateral AUKUS agreement, which focuses on jointly developing advanced capabilities between the three countries, holds the potential to supercharge progress. In the short term, AUKUS could improve interoperability among its partners in realms such as electronic warfare (EW) and command and control (C2). In the longer term, AUKUS could catalyze the integration of artificial intelligence (AI) technologies among its partners and into defense and security applications—but only if these countries act now to harmonize their approaches and consult experts. To realize the full potential of Pillar Two, the United States should reassure its AUKUS partners by taking radical steps to overcome barriers to cooperation, improve information sharing, and reform export controls. Above all, the success of AUKUS Pillar Two will depend on turning the strong political ties between the three nations into a new collective mindset to treat the agreement as an opportunity to find marginal—or even transformative—gains in the strategic competition with China.*

### INTRODUCTION

*“AUKUS, as you all know, involves two pillars. Pillar I - providing Australia with a conventionally armed, nuclear-powered submarine capability . . . and Pillar II - trilaterally developing and providing joint advanced military capabilities. . . . is a generational opportunity for deeper collaboration with two of our closest allies. . . . [But] make no mistake - the success of AUKUS is not predetermined - it must be built.”*

— Jessica Lewis, U.S. Assistant Secretary of State for Political-Military Affairs, *Testimony to the House Foreign Affairs Committee, May 24, 2023*

On September 15, 2021, Australia, the United Kingdom, and the United States **announced** a landmark trilateral

security agreement known as AUKUS. The centerpiece of AUKUS, known as “Pillar One,” is the delivery of a nuclear-powered attack submarine capability to Australia. This historic agreement—the first time the United States has shared its sensitive nuclear-propulsion technology with an ally since the 1958 Mutual Defense Agreement with the United Kingdom—was the focus of global media coverage following the announcement. Paris and Beijing both reacted acidly to the deal (albeit for different reasons). Progress on this pillar was seen in March 2023, when the leaders of the three AUKUS nations converged on Naval Base Point Loma in San Diego, California, to **announce** a pathway toward a trilaterally developed submarine, the SSN-AUKUS class. Less attention has been given to Pillar Two of

the agreement, “**the lesser-known - and poorly understood - part of AUKUS.**”

If Pillar One was historic, then Pillar Two promises to be revolutionary. According to the bureaucratic language of the AUKUS **announcement**, the purpose of Pillar Two is to “enhance our joint capabilities and interoperability.” Yet the scope of the original agreement was massive, covering “cyber capabilities, artificial intelligence, quantum technologies, and additional undersea capabilities.” A few months later, four more areas **were added** to these “advanced capabilities:” hypersonic and counter-hypersonic capabilities, EW, innovation, and information sharing.

Individually, each area of Pillar Two has game-winning potential in the strategic competition with China. Taken together, they could be game-changing, securing the future military and economic advantage of the AUKUS nations and recasting the nature of this competition for global influence. As an article by the Australian Strategic Policy Institute (ASPI) **puts it**:

There’s a growing realisation that emerging and critical technologies will be extraordinarily important for societies, economies and national security.

This is making the race to master them a geopolitical issue. And nowhere is this race more contested than in the Indo-Pacific region, which incubates much of the world’s technological innovation and has become a hotbed of strategic technological competition.

Pillar Two may have arrived just in time. In March 2023, ASPI released an **ongoing assessment** of global leadership in developing the technologies that will be critical to the strategic competition for economic and strategic influence. A **June update** to their assessment **suggests** China is ahead of the United States and its allies in 19 of the 23 technologies relevant to AUKUS Pillar Two. Driven by its goal to become the leading global technology and scientific superpower by 2050, “**China has become** a serious competitor in the foundational technologies of the 21st century: artificial intelligence (AI), 5G, quantum information science (QIS), semiconductors, biotechnology, and green energy.” Pillar Two holds the potential to focus

Washington D.C., London, and Canberra on the problem of the technological competition with China.

With the announcement in March of the Pillar One pathway toward the SSN-AUKUS submarine, Pillar Two may now become the main focus of AUKUS given its transformational potential. In fact, Pillar Two has already turned the political rhetoric of AUKUS into practical deliverables—as seen in May 2023, when the United Kingdom hosted the first AUKUS **technology demonstration**, which reportedly achieved several “**world firsts**” for swarming uncrewed “AI-enabled assets.”

Yet despite the significance of Pillar Two—and in contrast to Pillar One—little information has been released to date on its content and progress beyond lists of topics and names of working groups. Pillar Two was not even mentioned during the AUKUS leaders’ announcement in March. This brief aims to fill some of this conversation gap through a closer examination of three aspects of Pillar Two. First, it examines the potential for short-term interoperability gains among the AUKUS nations in the EW and information-sharing focus areas. Second, it analyzes the potential—including challenges and opportunities—for AUKUS to pioneer the integration of AI into military operations. Finally, it sets out three key barriers to achieving the potential of Pillar Two and discusses what it will take to overcome them.

## THE KEY ADVANCED CAPABILITIES HIGHLIGHTED IN AUKUS PILLAR TWO

- **Undersea capabilities**, particularly developing autonomous underwater vehicles through the AUKUS Undersea Robotics Autonomous Systems (AURAS) project, which aims to begin initial trials and experimentation in 2023.
- **Quantum technologies**, with the partners aiming to deliver “generation-after-next quantum capabilities” through the AUKUS Quantum Arrangement (AQuA). Their initial focus is on positioning, navigation, and timing technology, which will be integrated in trials and experimentation over the next three years.

- **AI and autonomy**, using these technologies to improve the speed and precision of decisionmaking processes and defend against AI-enabled threats. In this sphere, the initial focus is on adoption and resilience of autonomous and AI-enabled systems in contested environments.
- **Advanced cyber capabilities**, particularly to protect critical communications and operations systems.
- **Hypersonic and counter-hypersonic capabilities**, for which the partners are focused on accelerating development.
- **EW**, with a primary focus on improving interoperability through a shared understanding of tools, techniques, and technology for operation in contested and degraded environments.
- **Innovation**, which partners aim to achieve by accelerating defense innovation, learning from each other, and integrating commercial technology.
- **Information Sharing**, particularly to enable other Pillar Two workstreams by expanding and accelerating the sharing of sensitive information.

## THE NEAR-TERM PROMISE OF PILLAR TWO: ENHANCING INTEROPERABILITY

AUKUS Pillar Two can be used to deliver the quick wins necessary to ensure the immediate success of the agreement and increase member countries' collective technological advantages. Specifically, this can be achieved in the areas of EW and C2, where enhanced interoperability among partners could yield quick wins.

### ELECTRONIC WARFARE

Significant linkages already exist among the AUKUS parties regarding EW, but further advancements can be unlocked through AUKUS. Currently, the Australia, Canada, and United Kingdom Reprogramming Laboratory (ACURL) located at Eglin Air Force Base in Florida, conducts agile EW reprogramming for F-35 aircraft from Australia and the United Kingdom. In concept, Canada will also use the lab once it purchases

its own F-35s. Also located at Eglin and sharing connections with the ACURL is the U.S. Air Force's **350th Spectrum Warfare Wing (SWW)**, whose mission is to “deliver adaptive and cutting-edge electromagnetic spectrum capabilities that provide the warfighter a tactical and strategic competitive advantage and freedom to attack, maneuver, and defend.” This includes EW reprogramming of all U.S. F-35 aircraft through the **513th Electronic Warfare Squadron (EWS)**. Being in the same location with the same mission would seem to indicate a level of cooperation and crossflow, yet due to existing regulations it is extremely difficult for engineers from the EWS and the ACURL to collaborate—if they are even able to at all.

Due to the complex nature of competition and conflict in the electromagnetic spectrum, SWW was formed as a “first of its kind” wing to **connect “pockets of excellence”** in EW. While it has made great strides in reforming the EW reprogramming process within the United States, it remains unable to connect those pockets of excellence that exist between the closest of allies. AUKUS Pillar Two is crucial to breaking through these barriers to connect systems across the tripartite agreement.

Notably, as potential adversaries have been making large technological advancements within the electromagnetic spectrum, this connectivity will become even more important—even outside the realm of reprogramming. Developing concepts and technologies such as **electromagnetic battle management (EMBM)** and **cognitive EW** will be critical to future operations in a contested electromagnetic spectrum. EMBM is a comprehensive framework for dynamically monitoring, assessing, planning, and directing operations in the electromagnetic spectrum in support of the commander's concept of operations. Cognitive EW is the use of AI and machine learning to speed up and enhance electromagnetic spectrum operations. The end result of both concepts is a distributed, networked, and adaptive electronic attack. Current operations are **providing important intel** and highlighting the need for such networked systems, which cannot be limited to one partner within the AUKUS. Pillar Two should be used to break down those barriers now to enable operational synergy.



The partner nations can begin by taking two rather simple steps. The first is to overcome classification hurdles. While this is key to all aspects of AUKUS and is discussed at length below, it bears mention in relation to EW. EW systems are based on accurate and reliable intelligence and information sharing. If AUKUS partner nations are all working with different levels of information, their EW systems will never fully integrate. For example, much of U.S. EW technology and material is currently buried behind a Not Releasable to Foreign Nationals (NOFORN) classification, leading to two-tiered structures such as the F-35 reprogramming. To truly integrate and share EW techniques, the AUKUS nations need to establish an open classification caveat between the three nations in such realms of high technology.

Second, the AUKUS nations should work together to establish standardized open system architecture (OSA) standards, which are increasingly important now that software updates are part of almost all military equipment. No longer can the three nations allow software to be “vendor locked” to the original hardware contractor, which drives a multitude of software-standard and integration problems across systems. This is an area where the United States has attempted to enact some reforms, but this has resulted in a proliferation of OSA standards. The U.S. Air Force, the service with perhaps the most advanced technology, has **many different standards of its own**. The U.S. Army has been focused on its **Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, Reconnaissance (C5ISR)/Electronic Warfare Modular Open Suite of Standards (CMOSS)**. Meanwhile, a civilian consortium has developed the **Sensor Open Systems Architecture (SOSA)**, which has lately been taking hold in the U.S. Department of Defense (DOD). To avoid having to navigate multiple standards, the three nations should determine together—and soon—which OSA to subscribe to for future acquisitions so they can ensure interoperability and technique sharing.

## COMMAND AND CONTROL

Much as with EW, networked operations and information sharing are also required for C2. The United States, United Kingdom, and Australia have been conducting combined allied operations since World War I. Even as the pace of operations has increased—as have

the number of domains in which conflict can occur, including space and cyberspace—the three allies have remained linked in their C2 doctrine, training, and (in some cases) systems. This has allowed them to be extremely successful when they operate as a combined force. As the AUKUS countries move from traditional, domain-specific C2 constructs to a cross-domain model reliant on new concepts and technologies, these linkages need to remain for the allies to be successful. The same barriers that exist in the EW realm also threaten future integration of C2.

Regarding new concepts for C2, the United Kingdom and Australia should be included in U.S.-conducted training on all-domain C2 so that all AUKUS partners start with a common baseline. The current premier training program is the **C2 Warrior Advanced Course (C2WAC)**. Thus far, this has been a U.S.-only offering, but the other AUKUS allies should be brought in under Pillar Two. Additionally, the AUKUS partners should be more fully integrated in the air domain as the U.S. Air Force implements its **Agile Combat Employment (ACE)** concept, which is meant to provide force survivability and operational C2 in a contested environment. Many of the details of the concept are rightly classified to retain operational surprise and flexibility, but AUKUS allies should be more integrated into the planning and execution of the concept so they can fully take advantage of it, especially in the Indo-Pacific. This should entail holding open discussions on capabilities and limitations, conducting combined training, and developing common pre-positioned kits of fuel, munitions, and support equipment usable by all allies.

Australia especially is a willing partner in this endeavor, but officials there have expressed some concern that ACE as it stands may not meet Australian needs for aircraft parking and maintenance equipment. In short, there may not be enough space available on Australian airfields for both U.S. and Australian aircraft—details that some feel have not been properly considered. As an extenuating factor, F-35 maintenance crews currently face the same collaboration restrictions as the engineers at the SWW. Australian crews cannot fix, refuel, or rearm U.S. F-35s, effectively doubling the amount of support personnel and equipment required to conduct ACE from any one base where both countries are present.

Likewise, as new C2 technologies come online in the near term, AUKUS partners should ensure integration across the trilateral force. This is fortunately an area in which the partners have already made some great strides. The United States decided in April 2022 to purchase the **E-7 Wedgetail**, an airborne tactical C2 aircraft already in use in Australia and the United Kingdom, to replace the aging E-3 Airborne Warning and Control System (AWACS). AUKUS partners further **demonstrated** advanced capabilities integration in May 2023 by using U.S., UK, and Australian AI to jointly detect and track military targets in a simulated operational C2 environment. This level of integration should be maintained. For example, the use of the E-7 should not become a two-tier common system like the F-35 currently has, with a U.S. version and a separate UK/Australian version.

As the United States pursues new operational C2 software such as **Kessel Run** for its Air Operations Centers, as well as tactical C2 such as the **Advanced Battle Management System** provided by the E-7, these systems cannot become U.S.-only, classified above the level of the other AUKUS partners. This is another area in which partner nation officials have privately expressed concern. Integration across these technologies, key to effective operations, can be achieved now through AUKUS Pillar Two. Doing so will set the partner nations up for success in both Pillar One and other technologies under Pillar Two, such as AI.

## THE LONG-TERM PROMISE OF PILLAR TWO: INTEGRATING ARTIFICIAL INTELLIGENCE

Successful technological integration among AUKUS members in the near term will also enable further long-term integration of advanced technology. Pillar Two of AUKUS can be used to realize a force that is “**integrated by design**” to gain a competitive edge as new technologies are designed and fielded. This section considers the longstanding opportunities and challenges for one of Pillar Two’s most widely discussed advanced technologies, AI. If AUKUS members act now to set up Pillar Two’s AI focus area, they could ensure future success in leveraging the technology.

AI technologies are capable of being a force multiplier on and off the battlefield, from enhancing decisionmaking

capabilities to improving predictive maintenance to augmenting unmanned weapons systems. While incorporating integration requirements from the outset is vital for successfully utilizing any technology, it is especially critical for AI technologies given their growing prevalence in the defense sector and their development and deployment hurdles.

Getting AI system integration wrong could cause **technical bottlenecks** that could slow development or deployment—or even cause outright system failure. As AUKUS members position themselves to be global leaders not only in AI capabilities but also in employing **responsible AI**—for instance, the United Kingdom announced in June 2023 it will **host the first global summit** on regulating AI later this year—it is especially important to ensure that the technology is deployed as safely and security as possible.

Alongside all the typical integration challenges, AI systems pose unique difficulties that require additional attention during the earlier stages of research and development to guarantee effective integration. The opacity of AI models makes it hard to identify the impetus for specific system behavior or the true extent of their capabilities and limitations, which can lead to unexpected failure modes. In both cases, obstacles in assessing system performance make pre-deployment stages of research, development, testing, and evaluation even more critical for anticipating and understanding AI system behavior. In linking AI systems to other technology (when combined performance can become even harder to monitor and track), it is particularly vital to clarify integration requirements for AI systems early on.

It is therefore no surprise that AI systems integration is itself a quickly growing field of study. As such, it requires consideration beyond what is necessary for classical computing systems. AI **technical integration** requirements are broad and varied, including anything from **codifying** technical system-element attributes such as a **shared semantic space** to incorporating application programming interfaces (APIs). Beyond this, effective AI integration also includes operational considerations such as standardizing protocols and procedures, sharing information, developing operational best practices, and training.

## ACHIEVING EFFECTIVE AI INTEGRATION UNDER AUKUS PILLAR TWO

So far, AUKUS Pillar Two has not devoted much consideration to effective integration strategies for the advanced technologies it seeks to deploy. Yet it is critical to begin this work as early as possible to develop consistent standards, from technical safety protocols to acquisition requirements to best practices and procedures. Early integration also enables innovation through common requirements and reduces the possibility of **lock-in effects**, which can hamper data sharing across platforms. To address the AI integration problem in AUKUS Pillar Two, AUKUS partners could ensure successful AI integration from the outset by harmonizing domestic AI implementation approaches as they are being developed and leveraging relevant military expertise in AI and systems integration.

First, AUKUS members should synchronize their individual AI operationalization strategies now to enhance interoperability later. In 2022, the United Kingdom published its national **Defence Artificial Intelligence Strategy**, and the United States published its **Responsible Intelligence Strategy and Implementation Pathway**. However, their efforts to operationalize AI in their respective forces have been largely separate. AUKUS Pillar Two represents a timely opportunity to synchronize these efforts. This could be done through a distinct, trilateral Pillar Two working group for AI integration dedicated specifically to cutting across the original Pillar Two working groups focusing on individual technologies. Having a group whose primary focus is to consider integration between conventional and relevant advanced technologies will not only be useful in supporting the existing working groups as they consider their individual fields, but it will also allow for more rapid development and deployment of these technologies in concert with one another. Moreover, the ubiquitous nature of AI means that requirements for integrating it into other advanced technologies will need to be determined regardless; having a separate working group focusing on integration would therefore be particularly valuable for effective development and deployment of AI applications.

Second, AUKUS partners should leverage their existing sources of knowledge to better consider AI integration

needs on the battlefield. Expert consultation could be ramped up quickly by reaching out to domestic military specialists working on similar AI integration efforts, such as Joint All-Domain Command and Control (JADC2)—which, though an emerging concept, is expected to be **heavily reliant** on AI and machine learning. This will require developing more formalized pathways for domestic military and industry experts to officially consult on AUKUS projects, but any costs associated with arranging this will be vastly outweighed by the benefits of a collective approach.

Ultimately, AUKUS members do not need to wait for a more detailed Pillar Two strategy to be developed before executing either of these recommendations—they can both be undertaken quickly. Moreover, the earlier these and similar efforts are implemented, the better they will be able to improve AI performance through enhanced interoperability capabilities, thereby providing a significant competitive advantage to AUKUS partners.

## DELIVERING THE PROMISE OF PILLAR TWO: KEY CHALLENGES

Unlocking the huge potential of Pillar Two in the near and far term will require all three AUKUS nations to overcome serious challenges. Three stand out in particular: multinational cooperation, information sharing, and export and technology control.

### MULTINATIONAL COOPERATION

Multinational cooperation agreements like AUKUS do not come easy in matters of *national* defense and security. Nations often hesitate to cooperate on these sovereign issues given **fears about** defection and relative gains. Moreover, the complexity of multinational development and acquisition projects means they fail more often than they succeed. As **one CSIS study** puts it, “While single-nation acquisition programs are hard, international joint acquisition is harder.” The AUKUS nations will have to work to overcome the friction and resistance **generated** by the political, economic, and military impediments to successful cooperation.

The brief analysis of AUKUS in Table 1 against **known success factors** for multinational cooperation suggests Pillar Two has several strengths and weaknesses that will require exploiting or managing.

The analysis suggests AUKUS is more promising than most multinational cooperation initiatives given the high levels of trust, solidarity, and shared strategic culture among these three leading Anglosphere nations. However, the need for the United States to reform its information-sharing and export-control practices, the vague goals for Pillar Two, and the defense-industrial asymmetry between the three partners will need careful management to prevent AUKUS becoming another failure of multinational defense cooperation.

### INFORMATION SHARING

Inadequate information sharing is perhaps the key impediment to achieving the full vision of AUKUS. While

this is a concern for Pillar One, the Mutual Defense Agreement that has enabled nuclear-technology sharing between the United States and United Kingdom for several decades provides a reassuring precedent. One does not exist for Pillar Two, for which agreements will need to be created from scratch.

This concern is based on the past experiences of the United States’ allies: accessing sensitive information is a perennial issue even for the closest of partners such as the United Kingdom and Australia. Intelligence ties between the United States and United Kingdom are the closest in the world, **described** as the “special relationship within the special relationship.” Yet their information

Table 1: An Analysis of the Strengths and Weaknesses of AUKUS Pillar Two against Known Success Factors for Multinational Cooperation

Success factor	Opportunity	Risk
Trust and solidarity	The three AUKUS nations already exhibit high levels of trust and solidarity. The U.S.-UK defense relationship is perhaps the deepest and closest in the world, and all three nations cooperate on intelligence sharing and other matters through the Five Eyes alliance.	Inadequate information sharing and export controls by the United States have already been raised by Canberra and London as key risks to both pillars of AUKUS. The U.S. system is listening (see below) but will need to follow through with bold steps to maintain solidarity within AUKUS.
Shared strategic culture and like-mindedness	While each nation inhabits a different continent, all three share a language, history, and culture as part of the “Anglosphere.” The shared experience of being allies in World War II is formative in each nation’s strategic culture.	
Clear goals and serious intent	The original and subsequent AUKUS announcements made by the leaders of all three nations demonstrate a serious, shared political intent for AUKUS. National strategy documents published since then by all three nations have confirmed the centrality of AUKUS to each.	While the main goal of AUKUS—the deployment of Australian submarines through Pillar One—is crystal clear, the aim of Pillar Two remains vague and could benefit from clarification on how it will develop “advanced capabilities.” For example, Kevin Rudd—Australia’s ambassador to the United States and former prime minister—suggests the aim of Pillar Two is “ <b>seamless integration between defense industries.</b> ”
Military strategic symmetry	Having forces of similar size and quality is important for cooperation because it minimizes any party’s overdependence on another—but this is not a golden rule. Although the forces of each country are dissimilar, the basic aim of AUKUS is to correct a force asymmetry (particularly by giving Australia nuclear submarine capability).	Industrial asymmetry is also relevant and can derail cooperation if it leads to one party making outsized economic gains or losses. For example, the Australian goal of “seamless integration between defense industries” runs counter to the United States’ focus on protecting and securing supply (e.g., through export control regimes such as ITAR).

Source: Authors’ research and analysis.



and intelligence sharing is **based on** outdated processes and technology that have not kept up with the strategic environment. The same goes for the U.S.-Australia relationship, in which **information-sharing practices** “reflect a strategic and technological age that has long since passed us by. It’s a self-inflicted Achilles’ heel.”

Part of the reason is overclassification within the U.S. system—**described recently** by General John Hyten, vice chairman of the Joint Chiefs of Staff, as “unbelievably ridiculous.” One simple change could be to introduce a “Releasable to AUKUS Nations” (REL-AUKUS) protective marking. This could replace the **NOFORN** label often applied by default. An outdated mindset also prevails wherein information-sharing issues are accepted as a cost of doing business rather than an opportunity to find marginal—or even transformative—gains in the strategic competition with China. However, this mindset is shifting, helped along by AUKUS. The fact that AUKUS is a flagship policy of the Biden administration provides an imperative to make it work. **Recent testimony** to Congress by two senior Department of State and DOD officials sent a clear signal in May 2023 that the executive branch is taking this problem seriously. As Assistant Secretary of State for Political-Military Affairs Jessica Lewis **put it**, “Our top priority is to create new and open ways to share information and technology between the United States, Australia, and the United Kingdom.”

Another possibility in the information-sharing realm is to encourage the free movement of skilled workers, thereby enabling the cross-pollination of expertise across the three partner nations. For example, if the United States needs additional expertise in an industry in which Australia or the United Kingdom had a pool of workers, it should make it easier for those workers to move between countries. Leveraging industry expertise could be accomplished by establishing a specialized **AUKUS visa** to ease collaboration and movement. This would also allow for the free exchange of ideas across industry workers, raising the level of expertise in many advanced-technology areas across the partnership.

## **EXPORT AND TECHNOLOGY CONTROLS**

A similar story exists on export and technology controls. When close U.S. allies—or their defense firms—wish to develop technology or acquire capability from the

United States, they have to navigate a byzantine system of regulation. This costs time and money, undermines allies’ sovereignty, stifles innovation, and blunts the United States’ edge in the strategic competition with China. For instance, the **United Kingdom** spends at least half a billion dollars per year complying with the International Traffic in Arms Regulations (ITAR)—or nearly 1 percent of its defense budget, equivalent to a handful of F-35 fighter jets. ITAR and the U.S. Foreign Military Sales (FMS) process also undermine the ability of U.S. allies to deploy their forces. **For example**, FMS compliance delayed a routine sonar upgrade on British Royal Navy submarines by several months, and the ITAR regime meant a separate submarine could not dock at sea for maintenance until the Department of State approved an ITAR-controlled component. Such examples call into question the operational sovereignty of U.S. allies, who are hostage to Department of State bureaucracy.

The demands of ITAR and FMS compliance generate perverse incentives for U.S. companies to innovate abroad rather than at home. This has been seen in Boeing’s **decision** to develop its Ghost Bat drone in Australia and Anduril Australia’s **ambition** to develop hundreds of “ITAR-free” autonomous submarines—in other words, without involving U.S. companies. As **Bill Greenwalt**, a former deputy defense undersecretary for industrial policy, warns:

US commercial firms are wary of, if not downright hostile to, doing any research that might have a military application. They will do whatever it takes to commercialize their research first, by selling it in the global marketplace. For the same reason, foreign companies don’t want any US participation, even having a US engineer on a project. Through the mechanism of the State Department, the US military has closed itself off from the global innovation market.

The basic problem is that the current system of U.S. regulation was designed during the Cold War, enacted through legislation such as the 1976 Arms Export Controls Act. It is based on the outdated assumption that the U.S. government leads in all fields of research and capability and that the best way to compete is to protect this advantage. Yet **the commercial sector**, not the government, is now the true wellspring of U.S.



innovation and competitive edge. U.S. allies are another source of advantage—one not possessed by China—through their global leadership in key technologies, as demonstrated by the United Kingdom’s **AI sector** and Australia’s **biotech industry**. Greenwalt’s **summary** of the limits of ITAR applies to U.S. export and technology controls writ large: “Rather than protecting and advancing US technology interests, ITAR is now hindering development and providing our adversaries with a competitive advantage.” Just as with information sharing, a new mindset is required on U.S. export and technology controls. The question is not simply how to strengthen export controls, but how to leverage the United States’ unique advantages in innovation and allies to outcompete China. Both strengths would be diminished and smothered by more stringent controls that fail to keep up with changing economic and strategic realities.

In this sense, AUKUS Pillar Two has arrived just in time. It gives U.S. leaders a golden opportunity to deal with the perfect storm of three converging trends. First is China’s ascendancy in the global competition for preeminence in emerging technology. Second is how to regulate emerging technologies without stifling innovation. As Jim Lewis of CSIS **points out**, fundamental research on technologies such as AI and quantum “should be exempt from control as an open research system is more likely to maintain U.S. technological advantage.” Third, there is renewed focus on **allies and partners** as the **center of gravity** for U.S. defense and security strategy.

The good news is the U.S. government appears to be listening. U.S. officials readily **admit** that reforms to technology export laws are required to deliver Pillar Two. As one assessment **puts it**, “Behind the scenes, officials and politicians in all three nations are realizing that Pillar Two just won’t stand with ITAR as it’s currently enforced.” In May, the Biden administration **announced plans** to ask Congress to designate Australia as a “domestic source” under the Defense Production Act, while the House Committee on Foreign Affairs **heard testimony** from two senior DOD and Department of State officials on modernizing export controls for “a stronger AUKUS.” During her testimony, Jessica Lewis **stated**:

We will seek legislative change that would clear a path to new exemptions to licensing requirements

for much of our defense trade with the UK and Australia. Under this legislative proposal, AUKUS partners will have many transfers pre-approved and not subject to case-by-case reviews.

While this may have been music to the ears of many British and Australian officials, they will want to see clear evidence of progress before they celebrate too much.

*“We have reached a point in the global security environment and technology landscape where there is not only a benefit, but an imperative to expand our defense technology sharing practices. . . . AUKUS is the beginning of a path that will lead to a more integrated and open defense ecosystem that balances the threats of strategic competition by harnessing the strengths of our collective capabilities.”*

*—Dr. Mara E. Karlin, Assistant Secretary of Defense for Strategy, Plans, and Capabilities, **Testimony** to the House Foreign Affairs Committee, May 24, 2023*

## CONCLUSION

The United States and its allies are in a strategic competition with China in which the race to develop and deploy emerging technologies will play a decisive role. In this context, Pillar Two of AUKUS holds the potential to supercharge progress in the short and long term. In the short term, AUKUS could improve interoperability among partners in the realms of EW and C2. In the longer term, AUKUS could catalyze the integration of AI technologies among partners and into defense and security applications—but only if they take steps now to harmonize their approaches and consult experts. Perhaps most importantly, to realize the potential of Pillar Two the United States needs to reassure its AUKUS partners by taking drastic steps to overcome barriers to cooperation, improve information sharing, and reform export controls.

Above all, the success of AUKUS Pillar Two will depend on turning the strong **political will** the three partners have so far demonstrated into a new collective mindset. For Pillar Two to succeed, it should be treated as an opportunity to find marginal—or even transformative—gains in the strategic competition with China, rather than as a series of challenges to be overcome through piecemeal changes to, for example, information-sharing policies or more stringent export and technology

controls. As Assistant Secretary of State for Political-Military Affairs Jessica Lewis **has said**, “The success of AUKUS is not predetermined. It must be built.” What happens next will determine whether AUKUS succeeds or “**becomes** an interesting footnote in the story of what could have been.” ■

***John Christianson** is a military fellow in the International Security Program at the Center for Strategic and International Studies (CSIS) in Washington, DC. **Sean Monaghan** is a visiting fellow in the Europe, Russia, and Eurasia Program at CSIS. **Di Cooke** is a visiting fellow in the International Security Program at CSIS.*

*The opinions expressed are those of the authors and do not represent the official position of the United States Air Force, the Department of Defense, or the UK Ministry of Defence.*

*This brief is made possible by general funding to CSIS. No direct sponsorship contributed to this brief.*

---

**CSIS BRIEFS** are produced by the Center for Strategic and International Studies (CSIS), a private, tax-exempt institution focusing on international public policy issues. Its research is nonpartisan and nonproprietary. CSIS does not take specific policy positions. Accordingly, all views, positions, and conclusions expressed in this publication should be understood to be solely those of the author(s). © 2023 by the Center for Strategic and International Studies. All rights reserved.

Cover Photo: Leon Neal/Getty Images