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Shaping the Value Proposition for AUKUS Maritime Autonomy

About this Paper

This White Paper explores the opportunities and challenges arising from delivering and exploiting autonomous maritime capability across the three AUKUS nations (Australia, the United Kingdom and the United States of America). Specifically, it looks at: how the nations can shape their autonomous requirements; the opportunities afforded by energising a wider industrial base; overcoming the barriers to effective exploitation of technology; regional challenges; and augmenting and adapting the regulatory environment. Attention to all these factors is required to accelerate capabilities into the hands of warfighters to increase security in the Indo-Pacific region at a time of heightened tensions and increased geopolitical instability.

This paper focuses on four specific areas for consideration which Leidos believes will help to shape the maritime autonomy value proposition for AUKUS:

1. **POLICY AND REGULATION**

2. **DEVELOPMENT AND PROCUREMENT STRATEGY**

3. **DISRUPTION VERSUS INNOVATION**

4. **TRAINING TO WIN.**

Additionally, we would draw readers' attention to two other White Papers that contribute greatly to the arguments presented here:

1. **Achieving Resilience in a Contested Logistics Environment, The AUKUS Perspective**
   https://leidos.widen.net/s/gmbz2vxksd/leidos-aukus-contested-logistics-v1.0

   This paper evaluates the unique challenges inherent in the sheer size and scale of operations in a contested Indo-Pacific region.

2. **Maximising the benefit of Information Sharing across AUKUS**
   https://www.leidos.com/insights/maximising-benefit-information-sharing-across-aukus

   This paper considers solutions to delivering effective means of accessing and collaborating on information across the AUKUS partner nations.

Because both papers exist, we have not dwelt on these challenges within this White Paper, although they are referenced throughout.

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Executive Summary

The quiet revolution in maritime autonomy has been underway for more than 40 years. Leidos alone has fielded vessels which have accrued hundreds of thousands of nautical miles of operations for the US Navy both on and below the surface. The challenges of operating autonomously in the maritime domain are not only widely understood – across navies, industry, academia and government – many of those practical and technological challenges can or have been overcome, particularly for those tasks which do not require a kinetic effect.

Delivering capability into the hands of the warfighter, therefore, is no longer determined by access to proven technologies alone. Instead, utilising and exploiting maritime autonomy for operational advantage is now a question of risk appetite, culture, regulation and strategic choice or political will. This is the case both at national level and across the AUKUS trilateral partnership.

To move at pace to new autonomously equipped fleets, addressing the current regulatory burden must be prioritised. Testing and exercising uncrewed vessels with crew is not only costly and burdensome, accommodating those 'safety-case crew' for trials can compromise the very integrity of the design. Exercising fully as we intend to fight is vital for future mission success.

A move towards a fleet equipped with the right mix of COTS and bespoke autonomous platforms will allow navies to tailor solutions that can offer performance at the appropriate level without over-specifying where not needed. To move towards the 'Moneyball' military vision[1], purchasing exquisite solutions which are often over-specified for a single task must be consigned to history.

Finally, while industry stands ready to meet the future vision for a connected autonomous maritime capability, demand signals from within AUKUS remain unclear. To generate the investment necessary to continue to innovate, industry needs clear and unambiguous strategic direction. Perhaps a marquee programme? Perhaps a roadmap to capitalise on the success of the 'Maritime Big Play'[2]? Whatever the stimulant, Leidos, alongside the rest of industry, stands ready to deliver the AUKUS ambition of accelerating autonomous maritime capabilities into the hands of our warfighters.

In developing this White Paper, Leidos believes there is merit in considering the following for broader agreement across AUKUS:

- Urgent regulatory (Navigation, Legislative, Safety) reform needed to address maritime autonomy (both surface and undersea)

- Develop AUKUS-wide harmonised Standards and architectures for Interoperability, data sharing, communication and control

- ITAR Exemptions need to be opened up for Maritime Autonomy

- Develop AUKUS-wide operational concepts, doctrines and behaviours

- Implement early AUKUS collaboration across the user community to better define requirements and use cases

- Explore joint procurements across AUKUS nations for Maritime Autonomy (Scale, Sovereignty, Supply Chain)

- Define what AUKUS success looks like for Minimum Effective Product from conception/ideation to delivery

- Implement Defence and Industry cross decking to support improved innovation and collaboration

- Develop common AUKUS Maritime Autonomy onshore training establishments in all three nations.

About AUKUS

AUKUS is a trilateral security partnership between Australia, the UK and USA designed to enhance and accelerate defence cooperation to address regional security challenges. Pillar 1 of AUKUS focuses mainly on the provision of nuclear-powered submarines to Australia, thereby contributing to greater stability and security in the Indo-Pacific region.

AUKUS Pillar 2 is focused on deeper and more urgent cooperation in advanced defence technologies to include: artificial intelligence and autonomy; cyber; electronic warfare; hypersonics/counter-hypersonics; quantum; undersea; and enabling capabilities in information sharing and innovation. The Pillar 2 goal is to foster innovation and ensure that the three countries remain at the very cutting edge of defence and technological advancements.

Together, both Pillars aim to create a strategic balance in the Indo-Pacific region, and benefit all three nations by combining conventional military power with next-generation technological advantages.

About AUKUS Maritime Autonomy

Maritime capability sits at the very heart of AUKUS. From its origins, the trilateral agreement was envisaged to help 'support a free and open Indo-Pacific that is peaceful, secure and stable'[3]. By definition this requires a maritime focus, and this is duly recognised through the Pillar 1 provision of new nuclear submarines to Australia. Although these boats will remain fully crewed for now, many of the Pillar 2 advanced capabilities are likely to benefit both the submarine fleet and broader AUKUS naval community with current and emerging autonomous or semi-autonomous technologies.

How those crewed and uncrewed systems operate, interoperate and deliver their missions is a challenge at both national and AUKUS level, as well as across other allies. Autonomous systems have long been desirable for militaries to fulfil the three Ds – *Dull, Dirty* and *Dangerous* tasks. To those, three more Ds have been added in the maritime domain: *Deep, Dear* and *Duration*. Autonomous systems represent a clear advantage in accomplishing missions which minimise the risk to human life, represent poor use of sailors' time and value, and which can extend over long durations – like underwater surveillance or safeguarding critical national infrastructure.

Great strides have been made in trialling and exercising discrete technologies, including as part of the recent Autonomous Warrior[4]. Turning the success of these and other trials into front-line capability is the underlying message of this White Paper.

Policy and Regulation

Much of the regulatory environment which governs defence development today was designed for a peace-time era, and this is especially the case for maritime autonomy. As a result, many of the technologies which did not exist before or during the Cold-War (like the concept of artificial intelligence making decisions for an uncrewed system) have been developed under regulations like SOLAS[5] which place a primary emphasis on safety, sometimes at the expense of other factors, and most usually at the price of pace.

While the respective safety legislation for each nation remains at the behest of civilian seaworthiness regulators, more could be leveraged and learned from civil aviation authorities. Here, the use of drones and remotely piloted aircraft is well understood and legislated for accordingly. The same lessons can and should be applied in the maritime domain, notwithstanding that regulatory constraints are reduced for designated military zones in times of war. The key is to be able to develop, trial and exercise effectively in times of peace.

Prior to Russia's illegal invasion of Ukraine, developing capabilities for cost or personnel reduction regularly represented the highest priority for defence procurement, with departments wrestling with budgetary and human resources pressures, sometimes to the detriment of capability.

Times have changed, however, and the urgent need for frontline capability (while recognising the budgetary and human resource pressures) is now driving the development focus – both the manner and pace of innovating into service. Operational advantage for mission success is once again seen as the highest prize.

But has the regulatory environment been updated to reflect this 'new normal'? The answer from many across industry, as well as academia and government testing and evaluation teams, is a resounding 'no'.

While there has been welcome progress on the sharing of data, information and capabilities as a result of recent ITAR exemptions[6], the more general regulatory environment for autonomous systems – especially uncrewed surface vessels – remains stubbornly restrictive. In one example of the perverse result of stringent safety guidelines, an autonomous Mine Counter-Measures vessel is equipped with three crew seats for personnel during trials that do not feature in the system's concept of operations or modus operandi.

While safety requirements are necessary – no one wants a wayward uncrewed vessel running amok in harbour – adding human habitation/crew to autonomous vessels limits design options and complicates testing. Naval architects must compromise, as their designs may be constrained by unnecessary accommodations for crew, potentially affecting the operating vision. Additionally, the presence of unwanted crew during trials can influence the performance in unpredictable ways.

Updating the regulatory environment to cater for full autonomous systems will require a change in risk appetite, but one that should be viewed in context. Innovation changes pace at times of war, when the wider safety of peoples and their values is rightly considered the highest priority. AUKUS governments might engage with bodies like the International Maritime Organisation or Lloyd's Register to speed the adoption of a Maritime Autonomous Surface Ships (MASS) Code[7] and associated regulations for the ethical and legal deployment of autonomy at sea.

Autonomy as Standard

An underdeveloped regulatory environment is not our only inhibitor to progress at pace. While once autonomy itself was considered the holy grail and a "secret sauce" for realising value, there is now a wider acceptance that autonomy is the "price of doing business". Industry will create the platforms and systems that an agreed standard for autonomy enables.

But to achieve the benefits of autonomy, AUKUS nations must ensure harmonisation of standards so that systems can communicate, share data and operate together effectively. Any divergence in protocols or technical standards risks creation of siloed capability and a loss of critical mass. An AUKUS-wide mandated 'Autonomy Naval Baseline' is an absolute must.

One obvious solution would be to follow the US Navy's established reference standard for autonomy. Their Unmanned Maritime Autonomy Architecture (UMAA) provides a modular, scalable, and reusable digital architecture for Unmanned Maritime Vehicles (UMVs), defining standard interfaces for interoperability and software reuse.

Additionally, a Common Control System (CCS) provides an enterprise interface managing air, surface, and undersea unmanned systems (UxS). This CCS enables simultaneous management of multiple unmanned platforms, including: vehicle management; mission planning; execution tools across naval UxS; as well as integrating with C4ISR and combat systems. An Autonomy Baseline Library is a US government-owned suite of autonomy software that complies with UMAA standards, supporting software reuse and modularity.

The other AUKUS nations can benefit from leveraging lessons learned in the development of the US Navy's standards.

Likewise, there is a need for convergence on doctrines and operational behaviours, both within and across AUKUS. While there will always be sovereign strategic priorities, when it comes to delivering missions and effects, consistency in thinking, planning and execution is vital. Any misalignment risks at best a siloed capability and at worst a threat to effective mission execution.

Work on devising and adopting a singular AUKUS 'culture' for maritime autonomy is also vital. While the shift to autonomous and uncrewed operations is now widely accepted as welcome and inevitable, the concepts of operations remain divergent.

Development and Procurement Strategy

Delivering a collaborative approach to autonomous operations can begin in the design and development stage. To speed and ease interoperability, joint-procurement could focus on interchangeability of hardware, software and even crew – both within discrete capability and across the various fleets.

Such joint procurements already exist between AUKUS members and across allies. With US ITAR reforms and Pillar 2's increased emphasis on information sharing, failing to collaborate early in capability development represents a missed opportunity. AUKUS nations could go further and pool R&D funds around specific needs. With the information and intelligence already shared between, for example, Five Eyes (FVEY) allies at varying degrees of classification, collaboration for mission execution really ought to be baked into the culture of AUKUS.

AUKUS nations are in the process of changing their respective procurement approaches. In the past, there has been a tendency to over-specify resulting in the proliferation of exotic solutions designed uniquely for one specific task. In software development, the concept of Minimum Viable Product (MVP) has long been the mantra of the 'disruptive' technology creators. Many across AUKUS now talk about Minimum Effective Product (MEP). The concept is the same; creation of a quick and cost-effective solution that can be trialled, assessed, adapted and deployed with minimum time to exploitation. A strategy of adopting 'good enough' MEP solutions reflects the inherent pace of technological advance, driven both by commercial levers and the kinds of in-theatre innovation in measures and countermeasures seen in Ukraine.

The dichotomy facing procurement is explored in detail in the paper "Moneyball Military"[1]. While the focus is on the US defence enterprise, the assessment is true of most western militaries, including AUKUS. Three forms of disruption – technological, operational and industrial – have created a "strategic predicament" for western militaries. But moving to a good enough/COTS/MOTS model of procurement may require more than a cultural reset. Developing simpler, cheaper platforms and systems for multiple missions may also mean a practical change since those missions or objectives often sit across different procurement teams and requirement setters. The key is to deliver for end-user need, and not to be caught in a quagmire of procurement administration or bureaucratic barriers.

All three AUKUS nations are currently reviewing their procurement approaches, with a view to delivering relevant capabilities in less time, at less cost, while building sovereign industrial capability that is fundamental to sustaining capability in the medium to long term. In the UK, the MOD's main procurement body, Defence, Equipment & Support (DE&S)[8], is aiming to adopt a new "3:2:1" model designed for rapid procurement. Three competing providers will be assessed quickly, before down selection to two (funded) options for procurement to test and evaluate prior to award. The model

enables buyers to move from MVP to MDP (Minimum Desirable Product) at pace, and has already proven successful in the acquisition of capability for Special Forces.

In Australia, efforts are underway via the Capability Acquisition and Sustainment Group (CASG) 2.0 Strategy to reduce procurement documentation, introduce minimum viable capability concepts, and improved procurement processes for both Australian Defence and industry. In a similar way to the UK's 3:2:1 Model, Australia have in place the Advanced Strategic Capabilities Accelerator (ASCA), which looks to accelerate the development of asymmetric capabilities to the Australian Defence Force through innovation.

The US Department of Defense is reviewing its procurement practices in line with an Executive Order (April 2025)* that seeks to "accelerate defense procurement and revitalize the defense industrial base to restore peace through strength. To achieve this, the United States will rapidly reform our antiquated defense acquisition processes with an emphasis on speed, flexibility, and execution. We will also modernize the duties and composition of the defense acquisition workforce, as well as incentivize and reward risk-taking and innovation from these personnel."

Defence and Industry agree that such models work best when: 1) end user requirements are well considered, reviewed with industry and clearly articulated at procurement stage; and 2) the data feedback loop is robust to ensure that operational data informs future iterations. Such an approach mirrors the Silicon Valley mantra 'fail fast and break things', but is better reflected in the idea of 'failing fast to succeed faster'. Routes to innovation are covered later in the paper.

An example of rapid and flexible procurement which has helped to breakdown traditional barriers can be seen in the acquisition of the Royal Marines Android Tactical Assault Kit (ATAK). Built around existing geospatial data and a user group's familiarity with Google Apps, ATAK is now finding favour with additional units such as the Parachute Regiment's 16 Air Assault Brigade who used ATAK successfully on exercises with NATO allies and the US Special Operations Command (USSOCOM) in Estonia[9]. This 'ground-up' innovation is in sharp contrast to the challenges which face the waterfall procurement of tactical battlefield communications[10].

Similar success can be seen in the UK's adoption of large lift logistics drones, where five Brigades are feeding directly into the development backlog of the manufacturer.

To increase understanding across end-user, buyer and industry, consideration should be given to secondments (as well as recruitment policies) to maximise learning and understanding from ideation through procurement to usage. A shared vision and better awareness of all the factors at play should inevitably help to accelerate our 'internal' Observe Orient Decide Act (OODA) loop.

In adopting open architectures and utilising COTS/MOTS technologies from within defence, or adjacent and even unrelated markets, procurement teams can dramatically increase their provider options. COTS/MOTS solutions will not work for all requirements – for example those where specific performance characteristics like cyber-resilience are the preserve of specialist providers – but by embracing both the unique and readily available technologies, defence departments can create the new "Moneyball Defence Market" that will capture new

*https://www.whitehouse.gov/presidential-actions/2025/04/modernizing-defense-acquisitions-and-spurring-innovation-in-the-defense-industrial-base/

Disruption verses Innovation

There is a misconception that agility and innovation are the preserve of the small and medium-sized enterprise (SME). However, that west-coast start-up mentality of disrupting existing markets often relies on playing fast and loose with regulation, and/or throwing vast venture-capital sums at a loss-making business for many years on the promise of an IPO or acquisition. In essence, these are high risk ventures where the failure rate is also disproportionately high, and growing, according to the Financial Times[11].

While innovators of any size and background are to be encouraged and applauded, and each of the defence primes cultivates its own international eco-system of SMEs, it is worth considering what constitutes disruption or innovation, and how both can be maximised for greatest effect. If we consider that the AUKUS goal is quite simply increased operational advantage, then better (sometimes new) capability delivered to the warfighter more quickly – and ahead of our adversaries – is our surest route to achieve success. As we have already posited above, the procurement model is instrumental in determining the pace of adoption of new capability.

COTS technologies are helpful in this regard, but so too is understanding and managing sustainment in-service and alongside existing platforms, the lifecycle of which often stretches into many decades. The AUKUS-SSN submarines, for example, are expected to enter service in the UK in the late 2030s and in Australia in the late 2040s, with an in-service life expectancy of 30 years[12].

So, while large publicly listed companies are, by necessity, required to behave in a manner that meets shareholder and market obligations, it is their prudent financial management that helps to assure governments that they will be around to sustain the capabilities for the longer-term. And it is by no means evidenced that they are any less innovative as a result.

How then can we ensure that innovation is optimised, and disruptive or other creative thinking is captured and exploited irrespective of its origin?
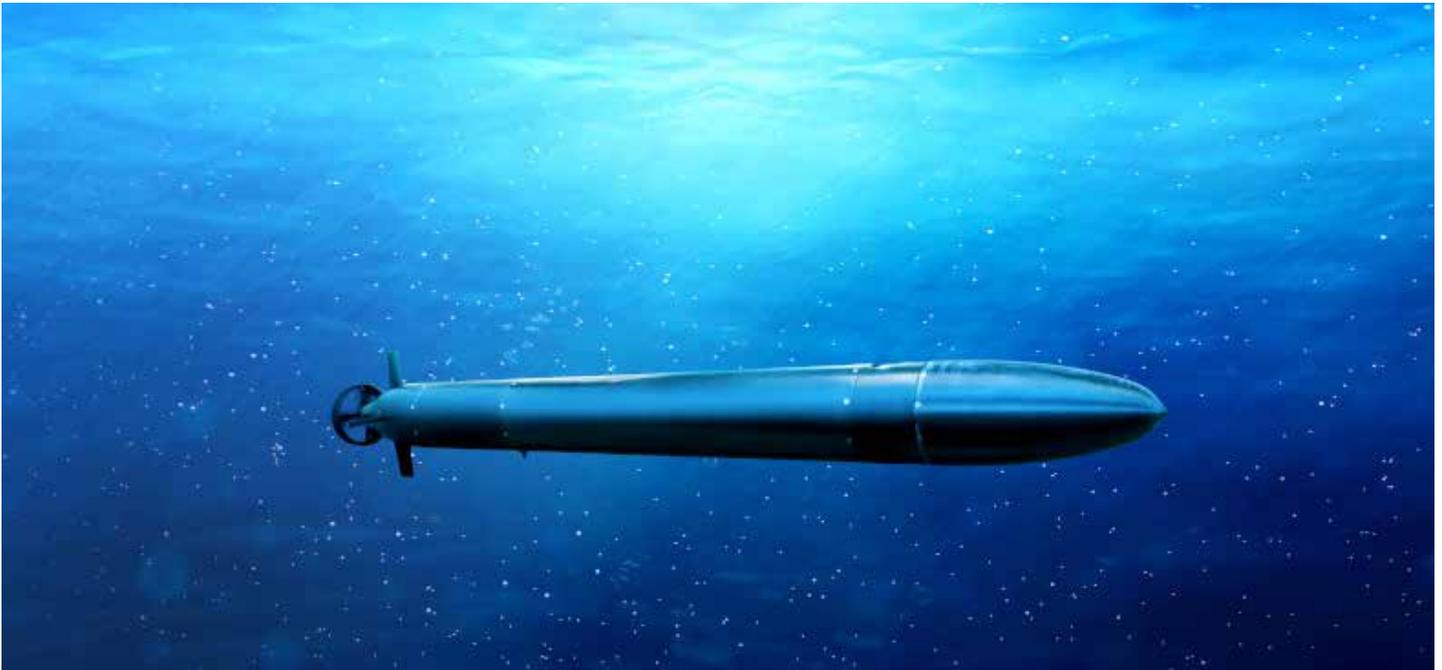
Firstly, as espoused above, solid engagement with users should be the driver of our 'problem sets'. User need, either proactively identified or in response to adversaries' actions, must be captured and used to create the 'brief' against which an MVP can be developed. Recruitment of users into industry is extremely beneficial in this regard.

Second, we must guard against 'innovation tourism or theatre' from buyers and industry, respectively. The historic market for defence technology is littered with discarded solutions for which the problem either evolved or was superseded by events. It is perhaps inherent in human nature – and if not genetic, then certainly encouraged by demand-driven economies – to find attraction in the 'new shiny object'. As countless conflicts have demonstrated – no more so than Ukraine – successful innovation is often about re-use or new use, not in the adoption of new technology per se.

Third, industry has a responsibility to ensure that its IRAD (Internal Research and Development) activities and funding are aligned with user needs. As Charles 'Chuck' Fralick of Leidos says, "There must be a pathway from

ideation to exploitation. We devised the 'Sea Dart'[13] specifically in response to customer need for a low-cost commercial UUV. We have to focus that investment on what's going to be used."

And finally, that focus on exploitation requires clarity from AUKUS customers to send the relevant demand signals to industry to ensure that investment in innovation is directed effectively. Industry cannot create capability in a vacuum and hope that it meets the wider AUKUS vision. As John Healey, UK Minister of Defence stated: "The hard-fought lessons from Putin's illegal invasion of Ukraine show a military is only as strong as the industry that stands behind them. We are strengthening the UK's industrial base to better deter our adversaries and make the UK secure at home and strong abroad."

Alongside similar statements from AUKUS partners and the new NATO commitment to spending 5% of GDP on defence, industry is primed to fulfil the demand, but while AUKUS maritime autonomy capabilities have been trialled and exercised, there have been no resultant programmes of record.

Training to Win

Ironically, it is a Field Marshall from the Imperial Russian Army, to whom the phrase "train hard, fight easy" is attributed. But irrespective of Alexander Suvorov's loyalties, his philosophy is hard to argue. Through the 'Maritime Big Play' series of experiments and exercises, AUKUS partners are being presented with a unique opportunity to understand how crewed and uncrewed systems and capabilities can be integrated to achieve a genuine force multiplier effect.

As Madeline Mortelmans, Assistant Secretary of Defense for Strategy, Plans and Capabilities at the US DOD states: "Maritime Big Play isn't just a demonstration for demonstration's sake. It's our goal to transition cutting edge technologies into capabilities that give our forces decisive advantage as quickly as we can… All of this together underpins a more strategic approach to ensure that AUKUS and like-minded partners can operate new autonomous uncrewed systems more effectively as a coalition force from the start"[14].

But training to win means training as we mean to fight, not only exercising to inform and educate about future possibilities. If as Mortelmans continues, "Maritime Big Play will grow and evolve to reflect the emerging technologies, new systems and new operational requirements," then those new systems must quickly enter service and be trialled in a way that represents the Indo-Pacific region.

In an accompanying paper to this one, "Achieving Resilience in a Contested Logistics Environment, The AUKUS Perspective", Leidos explores the difficulties presented not just through the nature of contested environments, but also the unique challenges posed by the sheer scale of the Pacific Ocean.

Since supply and re-supply can be undertaken by autonomous and uncrewed systems, along with other mission profiles, exercising with those very systems at scale and over distances is key to effective preparedness. Exercise 'Repmus 24'[15] achieved

just such a result with the Royal Navy and its allies controlling vessels in Australia from a command centre in Portugal, over 10,000 miles away.

Simon Lewinton of the Royal Navy's Navy X innovation team confirms: "Not only were we able to achieve progress in integrated command-and-control systems with our international partners in tactically realistic and representative scenarios, but we were also able to evolve our multi-national mine warfare capabilities with squadded autonomy, sharing responsibility for producing and executing mission plans."

Likewise, sovereign AUKUS onshore training facilities can be opened up to partners and efforts to increase secondments – with the requisite attention to easing the administrative burdens placed on international working – should be encouraged. As well as improving cultural understanding, closer training cooperation should feed (like operational data) back into improved user requirements for industry. This collaboration 'at source' should encourage commanders and more junior ranks to think first and foremost about exploiting the full AUKUS potential and not simply their direct tasked orders.

Effective trials and experimentation is one area where the broad concept of maritime autonomy now leads the various AUKUS working groups. Converting that exercise success into fielded capability must now be a priority for users and industry respectively.

Conclusion

Unlike other AUKUS Pillar 2 advanced capabilities, such as quantum or hypersonics, it is not the available technology which fundamentally determines the pace at which the three partner navies can adopt autonomous and uncrewed systems into the maritime domain.

Such is the rapid and widespread progress of autonomy and artificial intelligence, many of the perceived technical challenges of uncrewed systems have been overcome both in the lab and now also through real-world trials and exercises. Capability is already deployed and lessons learned are feeding back into new development cycles.

The challenge which faces government and industry today is how such new capabilities can be developed, trialled and procured at pace, and under what AUKUS or other programme mechanisms. And further, how quickly those capabilities can be fielded into the hands of warfighters, recognising the uncertain geopolitical situation and China's stance over Taiwan and the wider region. A potential conflict which may embolden other adversaries, according to the Head of NATO, Mark Rutte.[16]

Accelerating the delivery of capability requires changes to existing (civilian) regulatory frameworks, many of which compromise not only development cycles, but even the very essence of the naval architects' designs. Defence departments must engage with those regulators and, together, leverage learnings from their aviation counterparts to speed the adoption of standards for autonomous operations in the maritime domain. Perhaps the creation of peacetime 'military zones', as means to short-circuit wider legislative changes, could be considered.

Procurement cycles are shrinking, as all three AUKUS nations look to revolutionise their capability acquisition, adopting the lessons of the Moneyball Military approach. Here, recognising the autonomy standards already achieved by the US Navy may further drive adoption of COTS/MOTS technologies, which will further strengthen the bond between the respective AUKUS nations' navies. Managing and using recognisable hardware and familiar interfaces to achieve

known effects brings more than benefits in procurement. It delivers genuine interoperability of personnel and is an exponential force multiplier.

The innovation which delivers these new capabilities may come from anywhere. From lessons learned as a result of Ukrainian Special Forces operations, to entrepreneurs in small specialist SMEs, to skilled engineers inside multi-billion dollar enterprises. Innovation is not a facet of size, but culture and approach. We must be wary of mistaking disruption for capability. Genuine innovation comes in many forms.

Finally, the success of joint exercises like Autonomous Warrior is a reminder that fighting to win is best enabled by training to win. Enabling those exercises to mirror real-world scenarios involving a mix of crewed and uncrewed vessels, with autonomous and semi-autonomous capabilities, is the key both to maximum preparedness and to improved functionality from genuine end-user feedback in realistic scenarios.

From the outputs of the initial series of Maritime Big Play, and associated exercises, industry now expects to see defined user requirements emerge – most likely as MVPs, together with programmes of record which will provide exactly the demand signals needed for investment to follow. Assisting customers to engage end-users and procure at pace, in whatever spiral or equivalent mechanism is desired, remains a priority across industry, from primes to SMEs, where innovators stand ready to answer the call.

Taking the conversation further

There is no doubt that further dialogue is needed to bring about swift action towards developing the value proposition for autonomous maritime capabilities desired by AUKUS Nations, and their respective industrial bases who stand ready and eager to deliver for the warfighter.

Leidos encourages and supports this dialogue without favour.

To talk to us and help secure our future security and prosperity, contact: maritime@uk.leidos.com

About Leidos in Maritime Autonomy

Leidos has a rich heritage of supporting the US Navy with an unrivalled, innovative approach to solving next level challenges in autonomy. With autonomous vessels already at sea, Leidos has completed hundreds of thousands of nautical miles of testing and operations above and beneath the surface. Leidos is currently under contract to the US Navy to convert its very basic Autonomy Base Line (ABL) – developed for small USVs – to big vessel autonomy under an Unmanned Maritime Autonomy Architecture construct, including adding comms capability to ABL.

This incorporates elements of our own Leidos Autonomous Vehicle Architecture (LAVA) as well as elements from government and other contractors in a 'best-of-breed' approach. Leidos has already proven that hardy autonomous vessels can overcome the significant challenges of the ocean and deliver capability with lower risk and costs than crewed vessels, keeping working despite long hours, days and weeks at sea.

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For purposes of this paper, the term 'industry' includes traditional primes, non-traditional defence companies, commercial providers, and small and medium enterprises, all of which are stakeholders on the business providers side of the AUKUS maritime autonomy proposition.