

Classification: Official

# **UPDATED** UNSW Submission to the Joint Standing Committee on Foreign Affairs, Defence and Trade (JSCFDT) - Defence Subcommittee to support the inquiry into the 2023-24 Defence Annual Report

Dear Chair and Members of the Committee,

UNSW appreciates the opportunity to provide this updated submission in support of the Committee's inquiry into the 2023–24 Defence Annual Report (Annual Report). This redrafted version preserves the original UNSW submission and integrates supplementary recommendations in light of the release of the Strategic Examination of Research and Development (SERD) and associate policy papers, as well as recent Defence announcements.

#### **Executive Summary**

UNSW commends Defence on the achievements outlined in the Annual Report and supports Defence's transformation to an integrated, focused force. To sustain strategic advantage amid rapid technological change, UNSW recommends elevating R&D from an enabler to a core capability, treated as a Fundamental Input to Capability¹ (FIC), supported by increased investment benchmarked against international partners, and coordinated nationally across civilian and military infrastructure. UNSW welcomes AUKUS and remains committed to advancing capabilities across AI, uncrewed systems and quantum, as well as the workforce underpinning these endeavours. Consistent with the Committee's focus areas, this submission integrates a coherent set of recommendations, including: (i) increased Defence R&D investment; (ii) a national audit of military and civilian R&D infrastructure; (iii) reinstatement/expansion of international collaboration programs (e.g., AUSMURI); (iv) prioritised investment in maritime mine countermeasures (MCM) and scalable autonomous platforms; (v)

<sup>&</sup>lt;sup>1</sup> Defence introduced the Fundamental Inputs to Capability framework to provide a comprehensive and structured way of understanding, developing, and sustaining military capability. The core idea behind the framework is that true capability is not delivered by equipment or personnel alone, but by the integration of multiple interdependent components: **Organisation, Personnel, Collective Training, Major Systems, Supplies, Facilities and Training Areas, Support, Command and Management**, and **Industry** 

prioritised investment in medium to long range air and missile defence, and (vi) the introduction of scalable requirements for local R&D within Australian Industry Capability (AIC) plans. This submission includes a series of recommendations on pages 13 and 14 for consideration.

#### UNSW, the Defence Research Institute and Defence Trailblazer

Founded in 1949 to tackle the societal and environmental challenges of post-World War II Australia, UNSW has grown into the nation's leading defence research university and is once again ranked among the world's top 20 universities. <sup>2</sup> UNSW educates more than 80,000 students and approximately employs 7,800 researchers (including conjoint appointments) across six faculties and one college, UNSW Canberra at the Australian Defence Force Academy (ADFA). Our researchers lead global innovation in fields such as quantum technologies, AI, cyber security, advanced materials manufacturing, explosive materials, hypersonics, nuclear engineering, renewable energy, social sciences, international law, and medicine.

The UNSW's Defence Research Institute (DRI) works across the University connecting UNSW researchers and their research to government and industry to support Australia's national security. Finally, through the Australian Government's Department of Education Trailblazer Universities Program, and in collaboration with the University of Adelaide (UoA) and industry partners, UNSW is strengthening Australia's sovereign defence capabilities by accelerating the commercialisation of new technologies and solutions while also helping develop specialised knowledge and skills in Australia's workforce.

#### Synopsis of the 2023-24 Defence Annual Report

UNSW acknowledges the remarkable achievements of the Department of Defence over 2023-24 in 'defending Australia and its national interests to advance Australia's security and prosperity'. As noted by the Secretary of Defence, 2023-24 was a consequential year for Defence with the release of the 2024 National Defence Strategy, the ongoing implementation of AUKUS, the commencement of operations of the Advanced Strategic Capabilities Accelerator (ASCA), major exercises, ongoing operations and international engagements. As such, the Annual Report serves an important function in Defence's requirement, under the Public Governance, Performance and Accountability Act 2013 (PGPA Act), to provide sufficient information and analysis for the Parliament to make a fully



<sup>&</sup>lt;sup>2</sup> QS World University Rankings (2025). *University of New South Wales* 

informed judgment on Defence's performance and to inform the public on its achievements, non-financial performance and financial position.<sup>3</sup>

The Annual Report reports against two outcome statements:

- Outcome 1: Defend Australia and its national interests through the conduct of operations and provision of support for the Australian community and civilian authorities in accordance with Government direction.
- Outcome 2: Protect and advance Australia's strategic interests through the provision of strategic policy, the development, delivery and sustainment of military, intelligence and enabling capabilities, and the promotion of regional and global security and stability as directed by Government.

It uses a four-tier rating system of: **achieved**, **substantially achieved**, **partially achieved**; and **not achieved**, against performance measures linked to seven key activities:

- Key Activity 1 Conduct operations and deployments to defend Australia and its national interests - Achieved
- Key Activity 2 Be a strategy-led organisation Achieved
- Key Activity 3 Enable intelligence-informed strategic policy and overseas operations Achieved
- Key Activity 4 Invest in Defence people Partially Achieved
- Key Activity 5 Promote regional and global security and stability Substantially Achieved & Achieved
- Key Activity 6 Deliver future capability Achieved
- Key Activity 7 Advance Australia's prosperity Substantially Achieved

## **Approach**

To support the drafting of this submission, insights were sought from UNSW's faculties and college across the Committee's six focal areas:

- Sovereign Defence Industrial Priorities (SDIPs)
- AUKUS
- Uncrewed/Autonomous Systems, Al and their integration into the Joint Force



<sup>&</sup>lt;sup>3</sup> Australian Government Department of Finance (2025). What is an annual report?

- · Progress on the transformation to an integrated focused force
- Australian international defence cooperation and competition
- Defence Estate, Security and Resilience

This submission is structured around these six focal areas.

#### **Sovereign Defence Industrial Priorities**

The Government has adopted seven SDIPs to identify the things we must be able to do in Australia to build, sustain and enhance defence capability:

- Maintenance, repair, overhaul and upgrade of Australian Defence Force aircraft
- · Continuous naval shipbuilding and sustainment
- Sustainment and enhancement of the combined-arms land system
- Domestic manufacture of guided weapons, explosive ordnance and munitions
- Development and integration of autonomous systems
- Integration and enhancement of battlespace awareness and management systems
- Test and evaluation, certification and systems assurance

The Annual Report does not report directly against the SDIPs. Rather, Defence reports against five performance measures:

- **Defence's direct economic contribution to the Australian economy** demonstrated by an increase contribution to the Australian economy over the previous year.
- Defence contributes to strengthening sovereign defence industry demonstrated by an increase in the Australian contract expenditure of Capability Acquisition and Sustainment Group and Naval Shipbuilding and Sustainment Group contracts.
- Australian defence industry exports demonstrated by an increase in Australian industry
  applications to attend international trade shows with Team Defence Australia; an increase in
  the number of Australian suppliers engaged under the Global Supply Chain Program; and an
  increase in the number of approved export permits, noting that permits granted do not equate
  to actual exports.
- Defence invests in innovation, science and technology as approved by Government.
- Percentage of Defence's contracts to Indigenous enterprises

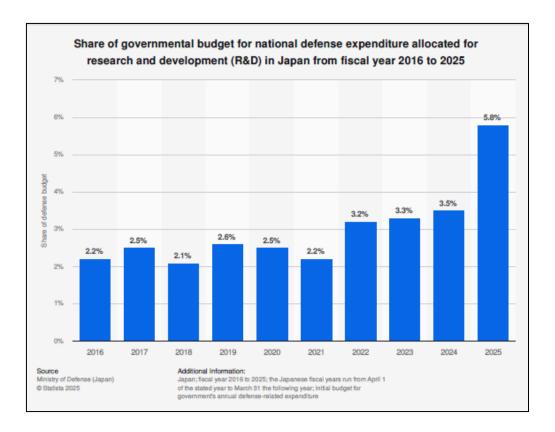
The Committee may wish to consider whether this approach enables Parliament to form a fully informed view of Defence's performance, as opposed to measuring performance against the SDIPs.



#### R&D is also critical to Sovereign Defence Industrial Priorities

While the Annual Report's current performance framework provides a useful overview of Defence's economic and industrial contributions, its limited alignment with the SDIPs makes it difficult to assess how effectively Defence is building the capabilities necessary for Australia's future security. Strengthening this alignment, particularly through clearer reporting on Defence's investment in innovation, science, and technology would enhance transparency and demonstrate measurable progress against national capability goals.

Recognising the rapid pace of technological advancements and their potential to quickly outdate military capabilities, it is recommended that Defence increase investment in research and development (R&D). The Annual Report highlights that Defence allocated 2.73% of its total budget to innovation, science, and technology, reflecting a modest increase from 2.6% in 2022-23. While Defence considers this target to have been **partially achieved**, it is important to benchmark this figure against international trends. For instance, Japan has consistently raised its R&D spending as a percentage of its Defence budget, with projections suggesting it will reach 5.8% by 2025.<sup>4</sup>



<sup>&</sup>lt;sup>4</sup> Statista (2025) Share of governmental budget for national defense expenditure allocated for research and development (R&D) in Japan from fiscal year 2016 to 2025



Similarly, the US Department of Defence has committed \$143.2 billion (16.8%) of its \$849.8 billion budget for research, development, and testing in FY 2025.<sup>5</sup> In contrast, the UK allocated 3.9% of its Ministry of Defence expenditure to R&D in FY 2022-23 (£2.05 billion), with plans to increase this to at least 7% of a growing defence budget by 2024.<sup>6</sup> Unfortunately, Australia's relatively low spending on military R&D is further exacerbated by a broader decline in national research investment over the past 15 years .

In FY 2021-22, Australian Bureau of Statistics' (ABS) data indicated that national expenditure on R&D had declined to 1.68% of GDP, two thirds the OECD average. Given the profound pace and effect of technological change unfolding globally, UNSW encourages both Government and Defence to view R&D as more than just an enabler to military capability, but rather see R&D as a Fundamental Input to Capability in its own right, one that can be surged in a time of crisis to give our nation an advantage. The mobilisation of R&D both within Ukraine and globally has been instrumental in the success of Ukraine's ongoing defence against Russia.8 Closer to home, Australia's response to the COVID crisis was largely underpinned by the strength of its medical R&D sector.9 It is therefore recommended that Defence set more ambitious R&D spending targets in the future, aiming to better align Australia's Defence R&D expenditure with that of its international partners and allies. It is also recommended that Defence explore ways to better integrate its research funding with Australia's broader innovation ecosystem. As highlighted in the 2024 Defence Industry Development Strategy, Government invests in programs such as the Department of Education Trailblazer Universities program, the Australian Economic Accelerator and the Cooperative Research Centre program, which foster industry-led collaboration on defence related technologies. Finally, there would likely be benefit for the Government in reviewing how its total R&D spend for defence and dual-use technologies is coordinated and harmonised across various inter-departmental initiatives.

#### **AUKUS**

The AUKUS partnership between Australia, the United Kingdom, and the United States is both timely and essential, reflecting the growing complexity of security challenges in the Indo-Pacific.

Heightened geopolitical competition, combined with rapid technological progress, demands that Australia develop cutting-edge capabilities in coordination with our close allies. The move to acquire

<sup>&</sup>lt;sup>9</sup> Department of the Prime Minister and Cabinet (2024), COVID-19 Response Inquiry Summary Report: Lessons for the next crisis



<sup>&</sup>lt;sup>5</sup> U.S. Department of Defense (2024). Department of Defense Releases the President's Fiscal Year 2025 Defense Budget

<sup>&</sup>lt;sup>6</sup> Mathews, D (2024), UK sets out major pivot to defence R&D

<sup>&</sup>lt;sup>7</sup> Group of Eight Australia (2023). Go8 Response to Australian Universities Accord Interim Report

<sup>&</sup>lt;sup>8</sup> Molloy (2024a). How are drones changing the modern warfare? Australian Army Research Centre; Molloy (2024b). Drones in Modern Warfare: Lessons Learnt from the War in Ukraine

nuclear-powered submarines under AUKUS Pillar I underscores the importance of technological superiority, interoperability, and a shared commitment to maintaining stability in the region.

Following the 2021 AUKUS announcement, in 2022 Arizona State University, King's College London, and UNSW launched the Security & Defence PLuS alliance, a flagship program combining the expertise of three leading research universities, across three continents, to address global security challenges and to maximise opportunities presented by AUKUS. Importantly for UNSW, AUKUS Pillar II represents a broader architecture for information sharing, joint research and development, and the cultivation of skilled workforces, and ultimately represents the greater opportunity to safeguard Australia's long-term security and prosperity. From Al-enabled surveillance to autonomous systems, the partnership will greatly enhance Australia's capacity to defend its maritime interests, deter aggression, and protect the principles of a free and open Indo-Pacific. As such, ongoing transparency and communication between government stakeholders, industry partners, academia, and the broader public is critical to maintaining domestic support for AUKUS and ensuring strategic alignment.

UNSW also welcomes the strategically important role that ASCA and more broadly Defence Science and Technology Group (DSTG) play in helping Australia realise the full potential of AUKUS Pillar II. However, in moving forward it will be important for Government to get the balance right between investing in mid to high technology readiness level (TRL) research (to realise capability within the next 5-10 years) against ensuring adequate investment in basic or fundamental research that provides the foundations for future innovations 10 to 20 years from now. Australia is a world leader in quantum computing research and innovation as evidenced by researchers like Scientia Professor Michelle Simmons CEO and founder of Silicon Quantum Computing and Scientia Professor Andrew Dzurak CEO and founder of Diraq. Their achievements would not have been possible without significant investment by both the State and Federal Governments, the US Department of War, and UNSW up to two decades ago.

Australia is a global leader in quantum R&D, with world-class universities, government-backed initiatives, and an innovative startup ecosystem. Programs like the **Trailblazer Universities initiative** and investments through the **Australian Research Council's Linkage and Discovery programs** have already laid a strong foundation for quantum innovation and its translation. These programs have supported fundamental research and fostered collaborations between academia, industry, and government. However, as global investment in quantum technologies accelerates, Australia risks becoming a mere consumer of overseas quantum solutions. **Maintaining sovereign capabilities necessitates ongoing investment and a robust dialogue between Defence and the Australian quantum community**. This dialogue is essential to ensure Australia remains at the forefront of



quantum advancements while actively exchanging knowledge with international partners to push the boundaries of this emerging technology.

Although not mentioned in the Annual Report, UNSW welcomes the Government's 2023 commitment to create 4,000 Commonwealth Support Places (CSPs) in universities over the next four years to support the development of the workforce needed to enable AUKUS. These places will be delivered across the university sector (including UNSW) spanning energy, defence and nuclear engineering to develop the skills needed for the AUKUS agreement, with up 20,000 high skilled jobs expected to be created over the next 30 years. UNSW encourages Government and Defence to more specifically address the whole of nation workforce needs of AUKUS in future Defence Annual Reports to ensure alignment with broader government policies within the education sector.

UNSW is committed to helping to grow the workforce needed to support AUKUS capabilities across both pillars, drawing on its unique and privileged position as an education provider at ADFA. Across the entire university, UNSW provides 15 per cent of Australia's and 40 per cent of NSW's undergraduate engineers each year and is expanding its range of programs to include the world's first bachelor's degree in quantum engineering and an undergraduate cybersecurity degree. Reflecting its commitment to the defence sector, UNSW is a founding member of the AUKUS Workforce Alliance (AWA), a collaboration with the University of Adelaide, Curtin University and defence companies Babcock Australasia and Huntington Ingalls Industries. While specifically addressing the development of a sovereign, nuclear-powered submarine workforce in Australia, the AWA will also lead the development and execution of critical upskilling programs and harness the full potential of Australia's industrial base in support of AUKUS Pillar II capabilities. To ensure collaborations like these succeed, UNSW recommends more specificity in the Defence Annual Report and the Defence Workforce Plan on whole of government initiatives, such as CSPs, and how they relate to AUKUS and the development of an integrated and focused force. Finally, UNSW recommends that the Government consider implementing AUKUS-inspired mobility schemes focused on applied research and training that align directly with AUKUS Pillars I and II. Additionally, we suggest the development of a 'Life-long Learning' scheme aimed at promoting workforce mobility among AUKUS members within these pillars, targeting both undergraduate and postgraduate/postexperience levels. This initiative would foster career pathways into key AUKUS-related priority areas.

## Uncrewed/Autonomous Systems, Al and their integration into the Joint Force.

The Annual Report highlights the growing importance of **artificial intelligence (AI)** and **uncrewed systems** in modern military operations, underscoring the ADF's commitment to integrating these



technologies across all domains. Al-enabled drones, autonomous vehicles, and undersea systems are reshaping warfare by enhancing surveillance, decision-making, and force protection while reducing personnel risk. Collaboration through **AUKUS** and the **Five Eyes** network continues to accelerate the operationalisation of these advanced capabilities.

Major investments, including \$4.3-\$5.3 billion in drones and UAS and the \$1.7 billion Ghost Shark program, reflect significant progress. However, the cancellation of Project SEA1905 has left a critical gap in maritime mine countermeasures (MCM) — a capability essential to ensuring access to Australia's ports and sea lanes during conflict, particularly considering the growing threat from modern mines and uncrewed undersea systems. Historically, maritime mining was responsible for the sinking of approximately 1.5 million tonnes of shipping during the Second World War, including vessels in Australian waters, underscoring the enduring vulnerability of maritime trade routes to such threats.

To maintain operational advantage, Defence must balance investment between high-end, technologically advanced systems and lower-cost, mass-producible platforms that can be fielded rapidly and at scale. Addressing the MCM capability gap should be a strategic priority, with Defence investing in R&D and innovation focused on autonomous and undersea technologies that enhance resilience in contested environments. Sustained collaboration with academia, industry, and international partners will be essential to developing scalable, adaptive solutions that safeguard Australia's maritime access and ensure enduring operational freedom in an increasingly complex security landscape.

## Progress on the transformation to an integrated focused force

In the Annual Report, both the Secretary of Defence and the Chief of the Defence Force highlight that "the adoption of National Defence also means the ADF is shifting to an integrated, focused force."

However, beyond this statement, there is no direct assessment of progress towards achieving this goal. UNSW observes that integration, especially as forces transitioned from analogue to digital technologies, has and continues to be a significant challenge for modern militaries. Given Australia's strategic objective to avoid fighting alone and its reliance on alliances, particularly with the United States; through a strategy of strategic denial, it is essential that future capabilities are developed, built, and maintained on a foundation of agreed open architectures and published standards.

Additionally, emerging technologies (such as AI, autonomous systems, and quantum technologies) and system of system level analytical approaches (such as mission and digital engineering) offer opportunities to address longstanding integration challenges. UNSW, as a global leader in these fields, continues to partner with Defence to help realise these goals.



### Australian international defence cooperation and competition

The Annual Report underscores Australia's growing international defence partnerships, particularly through AUKUS, expanded engagement with South-East Asia, and the rising strategic importance of India amid intensifying Indo-Pacific competition. UNSW supports Defence and the ADF in strengthening Australia's global defence research and innovation presence through international exhibitions, research collaborations, and industry-linked projects with major defence primes and DSTG.

UNSW has established strong relationships with international defence science and technology agencies, including the US DARPA, Office of Naval Research Global (ONRG), US Army DEVCOM, Air Force Office of Scientific Research (AFOSR), and the UK Defence and Security Accelerator (DASA). These partnerships have supported UNSW-led research in AI, autonomous systems, quantum computing, and cybersecurity, enhancing Australia's sovereign capabilities.

Through cooperation with DSTG and the Australian Defence Science and Universities Network (ADSUN), UNSW plays a key role in promoting innovation and ensuring Australia remains at the forefront of global defence research. To sustain this momentum, Defence should maintain and expand funding for international collaboration and consider reinstating initiatives such as the Australia-US Multidisciplinary University Research Initiative (AUSMURI) to enable broader cooperative research at scale.

## **Defence Estate, Security and Resilience**

The Annual Report notes:

- Defence is responsible for managing \$41.4 billion of land, buildings, infrastructure, plant and equipment, and intangibles in its account,
- The 2023–24 expenditure for approved capital works projects in northern Australia in the Enterprise Estate and Infrastructure Program was approximately \$1.1 billion, and
- Defence major works projects that achieved Parliamentary approval or exemption through the Parliamentary Standing Committee on Public Works in 2023–24.

However, no other information is provided to make an assessment on the challenges Defence is facing in balancing the needs of ongoing maintenance across a very large and aging estate, with the purchase of new land and infrastructure to support new capabilities, the impacts of climate change, and progress in supporting Government reach its net zero emissions targets.



#### Australian R&D infrastructure

DSTG, like other areas of Defence, likely faces the challenge of balancing funding requirements across personnel and new programs with the ongoing need to maintain and upgrade its estate and associated enabling infrastructure. Similarly, UNSW, along with other Australian universities, is confronting the challenge of securing sufficient funding to sustain, upgrade, and acquire R&D infrastructure to meet both current and future demands. A particular concern is the growing gap between the increasing costs of advanced R&D infrastructure and available funding. Considering this, UNSW believes it would be beneficial for the Government to commission a national audit of both military and civilian R&D infrastructure to ensure that Australia possesses the capabilities necessary to address both present and future challenges.<sup>10</sup>

#### **Australian Defence Force Academy**

UNSW has proudly partnered with the ADF for more than 50 years as an educational provider; and as a partner on the ADFA Defence-establishment, UNSW works with the Defence Security and Estate Group on both the day-to-day and longer-term estate needs of ADFA. This includes engaging on advancements to learning, teaching and research spaces, and broader campus infrastructure. The University shares ADFA's commitment to ensuring the site is equipped for the provision of high-quality education befitting a modern defence force, and to accommodate the anticipated growth in Trainee Officers in the coming years. UNSW is supportive of the planned upgrade to the live-in accommodation at ADFA as referenced in the Annual Report, which will improve the experience of Trainee Officers and other live in students.

#### **Defence Industry Security Program**

The Defence Industry Security Program (DISP) is the primary channel through which the higher education sector is engaged with the Department of Defence in relation to security controls and provisions. UNSW is a member of the DISP and as an active partner with Defence, seeks to strengthen its physical, digital (including cyber and information), intellectual property, personnel and governance security controls and culture across the institution. UNSW is supportive of the Department's (and wider Australian Government's) efforts to build a shared understanding of our

<sup>&</sup>lt;sup>10</sup> Australian Research Council (2021). Selection Report: Discover Projects 2021; Department of Defence (2020). Defence Strategic Update; Australian National Audit Office (2020). 2020-21 Major Projects Report.



respective operating environments and is working collaboratively with UNSW to adapt to the evolving security landscape.

The 2024 Defence Innovation, Science and Technology (IS&T) Strategy highlights the aspiration of Defence to leverage the expertise, capabilities and infrastructure across universities, industry and the wider innovation ecosystem. The Strategy recognises the capacity for such partnerships to address critical research, innovation and technology priorities for Defence and to accelerate the translation of new capabilities into practical applications. In parallel, it also acknowledges the need for safeguards to manage security risks as the network of contributors to defence innovation grows. UNSW embraces opportunities to support Defence and stands ready to engage proactively with the Department on pathways to achieving a robust security environment that enables the collaboration envisioned in the IS&T Strategy.

#### Resilience

The Annual Report outlines the contributions of ADF personnel in responding to natural disasters across the country, and the work of Defence in managing bushfire risk, energy use, biodiversity and other environmental challenges across its estate. Universities across Australia host some of the world's leading experts in climate change science and resilience, land management, energy, and related fields. As one example, UNSW's Bushfire group is at the forefront of bushfire research in Australia and globally, with research focused in the areas of dynamic fire propagation, extreme fire development, severe fire weather events, fire behaviour modelling, ember spread and bushfire risk at the wildland-urban interface. Australia's scientists and researchers are a resource available to Defence that can support the resilience of Defence infrastructure, particularly in helping mitigate the impacts of natural hazards and disasters. **This resource is currently underutilised**.

#### Recommendations

- 1. Defence should formally **recognise R&D** as a **Fundamental Input to Capability (FIC)** and progressively increase R&D investment targeting a level closer to its international partners like the US (16.8%), Japan (5.8%), and the UK (7%).
- 2. Defence's **R&D** spending is benchmarked against partners and allies to better align spending with global trends to ensure Australia stays competitive in emerging fields.



- 3. Government investigates changes to Defence acquisition policy to:
  - a. mandate an appropriate percentage of onshore R&D as part of Australian Industry Capability Plans.
  - b. make it easier for Australian researchers and industry partners to bring innovative capabilities to market.
- 4. Defence should balance investment between high-end, advanced autonomous systems and lower-cost, mass-producible platforms to enhance operational flexibility and resilience. Within this framework, it should prioritise innovation in maritime mine countermeasures (MCM) and autonomous undersea technologies to ensure secure access to Australia's ports and sea lanes during conflict.
- 5. Defence continues to **invest in the opportunities provided by AUKUS**, focusing on joint R&D, and workforce initiatives, balancing investment in higher TRL research with continued investment in basic or fundamental research.
- Government introduce AUKUS-inspired mobility schemes for applied research and training aligned with the AUKUS Pillars, alongside a 'Life-long Learning' scheme to promote workforce mobility and career pathways in key AUKUS priority areas.
- 7. Government considers directing a **national audit of Defence and civilian R&D infrastructure** to assess current capabilities and future needs, addressing the rising costs of advanced R&D infrastructure.
- 8. Building on the success of the Government's Trailblazer Programs, Government continues to invest in initiatives that increase collaboration with universities, industry and Defence to drive innovation in national security technology, particularly in areas such as quantum, Al and autonomous systems.
- Defence ensures adequate funding for international collaboration opportunities continues
  and investigates the implementation of policies that specifically encourage international
  research collaborations such as the now ceased Australia-US Multidisciplinary University
  Research Initiative (AUSMURI).



- 10. Government review and streamline the coordination of its total R&D expenditure for defence and dual-use technologies across various inter-departmental initiatives.
- 11. Government investigates ways to better leverage Australian expertise in climate change science and resilience to support Defence's infrastructure and operations requirements.
- 12. Defence recognises universities as a key Australian export, akin to the broader defence industry, and supports their international engagement in this context.

#### Conclusion

UNSW remains steadfast in its commitment to advancing Australia's national security and prosperity through cutting-edge research and innovation. As the nation's leading defence research university, UNSW plays a pivotal role in addressing evolving defence challenges through its work in sovereign industrial priorities, AUKUS, advanced technologies, and research infrastructure. Our longstanding partnership with Defence, exemplified by the Defence Research Institute and the Australian Defence Force Academy, demonstrates our enduring contribution to national security.

To maintain Australia's competitive edge in an increasingly complex and technology-driven environment, Defence must increase its investment in R&D and supporting infrastructure. UNSW advocates for a more ambitious approach to R&D funding and a national audit of military and civilian research infrastructure to ensure alignment with Australia's long-term strategic needs. Sustained investment in foundational research will be essential to securing Australia's defence capabilities for the decades ahead.

The AUKUS partnership offers unparalleled opportunities for collaboration in areas such as AI, uncrewed systems, and quantum technologies. UNSW's leadership in these fields, supported by deep partnerships across government, industry, and academia, uniquely positions it to advance Australia's strategic interests. Success in AUKUS requires both technological excellence and sustained investment in R&D infrastructure to deliver enduring capability outcomes.

Through collaboration with DSTG, the ADSUN network, and international allies including the United States, United Kingdom, and Japan, UNSW continues to strengthen Australia's global defence research partnerships. Prioritising funding for such international collaborations will enhance Australia's resilience and safeguard its interests in an increasingly contested Indo-Pacific.



UNSW looks forward to continuing its collaboration with Government and Defence to strengthen national security, foster innovation, and deliver on the recommendations outlined in this submission.

#### References:

Australian Deprtment of Defence, 2020. Defence Strategic Update. [Online]

Available at: <a href="https://www.defence.gov.au/sites/default/files/2020-11/2020\_Defence\_Strategic\_Update.pdf">https://www.defence.gov.au/sites/default/files/2020-11/2020\_Defence\_Strategic\_Update.pdf</a>

Australian Government Department of Finance, 2025. What is an annual report?. [Online]

Available at: <a href="https://www.finance.gov.au/government/managing-commonwealth-resources/annual-reports-corporate-commonwealth-entities-rmg-136/what-annual-report">https://www.finance.gov.au/government/managing-commonwealth-resources/annual-reports-corporate-commonwealth-entities-rmg-136/what-annual-report</a>

Australian Government, Department of the Prime Minister and Cabinet, 2024. COVID-19 Response Inquiry Summary Report: Lessons for the next crisis. [Online]

Available at: <a href="https://www.pmc.gov.au/sites/default/files/resource/download/covid-response-inquiry-summary.pdf">https://www.pmc.gov.au/sites/default/files/resource/download/covid-response-inquiry-summary.pdf</a>

Australian National Audit Office, 2020. 2020–21 Major Projects Report. [Online]

Available at: https://www.anao.gov.au/work/major-projects-report/2020-21-major-projects-

 $\underline{report\#:} \sim : text = ANAO\%20 analysis\%20 of\%20 project\%20 performance, these\%20 key\%20 elements\%20 of\%20 projects.$ 

Australian Research Council, 2021. Selection Report: Discovery Projects 2021. [Online]

Available at: <a href="https://www.arc.gov.au/funding-research/funding-outcome/selection-outcome-reports/selection-reports-selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-report-discovery-projects-">https://www.arc.gov.au/funding-research/funding-outcome/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports/selection-outcome-reports-selection

2021#:~:text=The%20ARC%20received%20a%20total,Discovery%20Projects%20approved%20for%20funding.

Group of Eight Australia, 2023. *Go8 Response to Australian Universities Accord Interim Report*. [Online] Available at: <a href="https://go8.edu.au/go8-response-to-australian-universities-accord-interim-report">https://go8.edu.au/go8-response-to-australian-universities-accord-interim-report</a>

Kirk-Wade, E., 2024. UK Defence Spending. [Online]

Available at: https://researchbriefings.files.parliament.uk/documents/CBP-8175/CBP-8175.pdf

Mathews, D., 2024. New plans to allocate at least 7% of a growing defence budget to R&D and military-related science would see spending rise significantly – but at the expense of civilian research. [Online] Available at: <a href="https://sciencebusiness.net/news/dual-use/uk-sets-out-major-pivot-defence-rd">https://sciencebusiness.net/news/dual-use/uk-sets-out-major-pivot-defence-rd</a>

Molloy, O., 2024a. How are drones changing the modern warfare?. *Australian Army Research Centre. Land Power Forum.* 

Molloy, O., 2024b. Drones in Modern Warfare: Lessons Learnt from the War in Ukraine. *Australian Army Occasional Paper*, 29(2653-0406).

Molloy, O., 2025. Faster, please: the ADF needs to catch up on uncrewed-aircraft technologies. *The Strategist. Australian Strategic Policy Institute (ASPI)*.

QS World Rankings, 2025. *The University of New South Wales (UNSW Sydney)*. [Online] Available at: <a href="https://www.topuniversities.com/universities/university-new-south-wales-unsw-sydney">https://www.topuniversities.com/universities/university-new-south-wales-unsw-sydney</a>

Robotic and Autonomous Systems Implementation Coordination Office (RICO), Future Land Warfare Branch, Army Headquaters, 2022. *Robotic and Autonomous Strategy*. [Online] Available at:

 $\frac{https://researchcentre.army.gov.au/sites/default/files/Robotic%20 and \%20 Autonomous \%20 Systems \%20 Strategy \%20 V2.0.pdf$ 



Statista, 2025. Share of governmental budget for national defense expenditure allocated for research and development (R&D) in Japan from fiscal year 2016 to 2025. [Online]

Available at: <a href="https://www.statista.com/statistics/1362068/japan-share-defense-budget-research-and-development-spending/">https://www.statista.com/statistics/1362068/japan-share-defense-budget-research-and-development-spending/</a>

U.S. Department of Defense, 2024. Release. [Online]

Available at: <a href="https://www.defense.gov/News/Releases/Releases/Article/3703410/department-of-defense-releases-the-presidents-fiscal-year-2025-defense-budget/">https://www.defense.gov/News/Releases/Releases/Releases/Article/3703410/department-of-defense-releases-the-presidents-fiscal-year-2025-defense-budget/</a>



Date: Updated 10 October 2025 (original submission 3 February 2025)

#### **Review and Contributors:**

Name	Position	Department/Unit	Contact Email
Chris Mills AM CSC	Director	UNSW Defence Research Institute	chris.mill@dri.unsw.edu.au
Professor lan Langford	Executive Director	Security and Defence PLuS	ian.langford@unsw.edu.au
Professor Matt Garratt	Deputy Director Defence and security, UNSW.ai Institute for Machine Leaerning, Artificial Intelligence and Data Science	UNSW Canberra	m.garratt@unsw.edu.au
Dr Oleksandra Molloy	Senior Lecturer in Aviation, Aviation Program Coordinator	UNSW Canberra, School of Science	o.molloy@unsw.edu.au
Dr Gavin Mount	Senior Lecturer	UNSW Canberra, School of Humanities and Social Sciences	g.mount@unsw.edu.au
Dr James Morrison	Business Development Manager – Defence	UNSW Defence Research Institute	james.morrison@dri.unsw.edu.au
Joshua Sherman	Business Development Manager – Defence	UNSW Defence Research Institute	joshua.sherman@dri.unsw.edu.au
Dr Tracey Hanley	Institute Manager	UNSW Defence Research Institute	tracey.hanley@dri.unsw.edu.au
Nicholas Day	Institute Administrator	UNSW Defence Research Institute	nick.day@dri.unsw.edu.au
Professor Sven Rogge	Dean	UNSW Faculty of Science	s.rogge@unsw.edu.au
Professor Andrew Dzurak	Professor and CEO of Diraq	UNSW Electrical Engineering	A.Dzurak@unsw.edu.au
Stefanie Tardo	Chief of Staff	Diraq	stef@diraq.com
Heather Nicoll	General Manager, Workforce, Innovation & Culture	Defence Trailblazer	heather.nicoll@unsw.edu.au
Dr Sanjay Mazumdar	Executive Director	Defence Trailblazer	sanjay.mazumdar@adelaide.edu.au
Professor Emma Sparks	Rector and Dean	UNSW Faculty of Canberra	emma.sparks@unsw.edu.au
Kath Kulhanek	Executive Director	UNSW Canberra	k.kulhanek@unsw.edu.au
Maxie Hanft	Senior Government Relations Manager	UNSW Canberra	m.hanft@unsw.edu.au
Carla McBride	Chief of Staff	UNSW Canberra	c.mcbride@unsw.edu.au

