Classification: Official

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 greatly appreciates the opportunity to provide a submission to support the Committee's inquiry into the 2023-24 Defence Annual Report (Annual Report).

Executive Summary

Despite the remarkable achievements highlighted in the Annual Report, UNSW advocates for a more ambitious approach to R&D funding in the defence sector and calls for a national audit of both military and civilian R&D infrastructure to better align with the nation's strategic goals. UNSW believes long-term foundational research will be key to ensuring Australia's security and military capability in the decades to come, and complement programs aimed at translating more mature technologies. The university welcomes the AUKUS partnership and is committed to developing technologies and policies in the realms of AI, uncrewed systems, and quantum in addition to the workforce underpinning this inter-generational initiative. UNSW also supports Defence's efforts to transform into an integrated and focused force and looks forward to continuing its role in supporting Australia's international defence engagement. 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.[2] UNSW educates more than 70,000 students and employs

[2] QS World University Rankings (2025). *University of New South Wales*

7,636 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, advanced materials manufacturing, explosive materials, hypersonics, 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 commercialising 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 informed judgment on Defence's performance and to inform the public on its achievements, non-financial performance and financial position.[3]

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

[3] Australian Government Department of Finance (2025). *What is an annual report?*

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, AI and their integration into the Joint Force
- 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

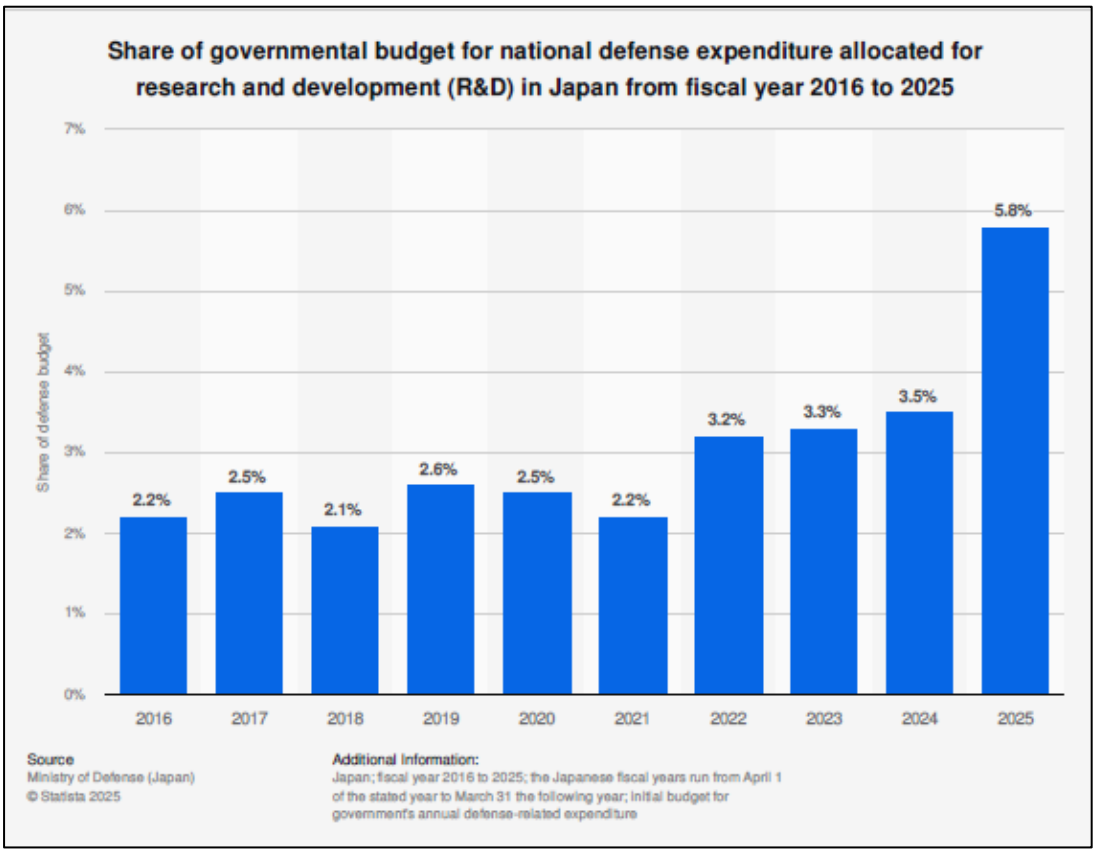
The Annual Report does not report directly against the SDIPs. Rather, Defence reports against five performance measures:

- **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**

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.[4] 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.[5] In contrast, the UK allocated 3.9% of its Ministry of

[4] 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
[5] U.S. Department of Defense (2024). *Department of Defense Releases the President's Fiscal Year 2025 Defense Budget*

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.[6] 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.[7] 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 it as a military 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

[6] Mathews, D (2024), UK sets out major pivot to defence R&D
[7] Group of Eight Australia (2023). *Go8 Response to Australian Universities Accord Interim Report*
[8] 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*
[9] Department of the Prime Minister and Cabinet (2024), *COVID-19 Response Inquiry Summary Report: Lessons for the next crisis*

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 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 AI-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 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 Professor Michelle Simmons CEO and founder Silicon Quantum Computing and 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 Defense, 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/post-experience levels. This initiative would foster career pathways into key AUKUS-related priority areas.

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

The Annual Report highlights the growing importance of AI and uncrewed technologies in modern military operations, underscoring the Australian Defence Force's (ADF) commitment to integrating these advanced systems. AI and uncrewed systems—such as drones and autonomous vehicles—are transforming the battlefield, offering significant advantages in surveillance, reconnaissance, and even frontline operations.[10] These technologies allow the ADF to operate in high-risk environments while reducing the cost and exposure to personnel. Notably, the report emphasises the ADF's international collaborations, particularly with allies like the United States, United Kingdon, Canada, and New Zealand, which strengthens Australia's R&D efforts and accelerates the operationalisation of these advanced technologies.

Recognising the strategic importance of uncrewed technologies, the ADF has committed to substantial investments, including $4.3 - $5.3 billion in drones and UAS, with a focus on both complex, high-end systems like the MQ-28A Ghost Bat and more affordable, high-volume solutions. However, as the global landscape continues to shift, the ADF must balance investments in sophisticated platforms with the need for rapidly deployable, cost-effective technologies that can be mass produced to address emerging threats.[11]

[10] RICO (2022). *Robotic and Autonomous Strategy v2.0.*
[11] Molloy, O (2025). *Faster, please: the ADF needs to catch up on uncrewed-aircraft technologies*

AI's integration into Defence operations presents both significant opportunities and challenges. On the one hand, AI can improve decision-making, enhance situational awareness, and automate tasks, reducing the burden on personnel. On the other hand, ethical concerns and the risk of adversarial AI must be carefully managed. As AI systems become more sophisticated, Defence must address issues such as algorithmic bias, accountability for autonomous actions, and the cybersecurity risks associated with AI-driven systems. Furthermore, the rapid advancements in AI, such as the potential emergence of artificial general intelligence (AGI), add an additional layer of complexity to strategic planning. The development of AGI could not only revolutionise military operations but also introduce substantial risks, including the possibility of uncontrollable AI behaviour and its misuse by adversaries.

To maintain its technological advantage, Australia must continue to invest in R&D, particularly in AI and autonomous systems. This includes not only the acquisition of advanced technologies but also the development of the R&D capabilities needed to evolve and update these systems as they mature. As AI-driven systems rely heavily on data and continuous learning, it is critical to establish robust R&D infrastructure to support the ongoing evolution of these technologies. Collaboration with academic institutions, industry partners, and international allies will be key to driving innovation and ensuring that Australia remains at the forefront of these technological advancements. Defence should also prioritise investments in research to explore the legal and ethical implications and strategic uses of AI, cybersecurity measures to protect critical systems, and countermeasures against AI-driven threats. Furthermore, the ADF's leadership must be equipped with the knowledge and skills to make informed decisions on the strategic, ethical, and technological challenges posed by AI and autonomous systems. With continued investment in R&D and international collaboration, Australia can secure its position as a leader in this rapidly evolving defence technology 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 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 highlights significant developments in Australia's international defence cooperation and the evolving landscape of global defence competition. Key themes include Australia's growing defence partnerships particularly with the United States and United Kingdom through AUKUS, its role in regional security and enhanced defence cooperation with South-East Asian partners, and the strategic challenges it faces amid intensifying geopolitical tensions, particularly in the Indo-Pacific. UNSW has long been committed to supporting Defence and the ADF in fostering global cooperation and in strengthening Australia's position in the rapidly evolving international defence R&D landscape. Through its engagements in international defence exhibitions, research collaborations, industry-supported projects with international defence prime contractors, and partnerships with DSTG, UNSW has made significant contributions towards Australia's international defence cooperation efforts. The Annual Report also highlights the strategic importance of India as a partner with international engagement between India and Australia at an all-time high, exemplified by ongoing Free Trade Agreement negotiations. UNSW acknowledges India's growing significance and is expanding its collaboration with Indian partners and exploring opportunities for trilateral cooperation with Southeast Asian and Pacific nations.

UNSW has successfully secured funding and collaboration opportunities through established relationships with key defence innovation, science, and technology agencies in partner nations, including in the United States and the United Kingdom. These agencies provide vital support for cutting-edge research that aligns with Australia's defence priorities. Notable collaborations include:

- Defense Advanced Research Projects Agency or DARPA (US)
- US Office of Naval Research Global (ONRG)
- US Army DEVCOM
- US Army Research Office (ARO)
- US National Security Agency Laboratory for Physical Sciences (NSA-LPS)
- US Air Force Office of Scientific Research (AFOSR)
- Minerva Research Initiative (US)
- UK Defence and Security Accelerator (DASA),

US agencies have supported several UNSW-led projects focused on next-generation technologies, including AI, autonomous systems, and quantum computing, which are crucial to enhancing Australia's defence capabilities. The cooperation with UK DASA, particularly in the development of technologies with defence and dual-use potential, has expanded UNSW's research capacity in areas such as detection of toxic gases, cybersecurity and communications.

UNSW also works closely with DSTG and the Australian Defence Science and Universities Network (ADSUN) to foster innovation and promote international collaboration in the defence sector. This cooperation plays a crucial role in curating engagement opportunities and ensuring that Australia remains at the forefront of international defence research efforts. UNSW's involvement in these networks has facilitated the development of strategic alliances, enhancing Australia's global standing and its ability to influence defence technology trends.

By leveraging the combined capabilities of UNSW, DSTG, and ADSUN members, Australia has been able to strengthen its defence collaboration with like-minded nations and ensure that it remains a key player in the global defence research sector. Moreover, these partnerships have provided critical insights into emerging technologies and trends, ensuring that Australian researchers and defence professionals are well-equipped to meet future challenges. However, to maintain Australia's competitive edge, it is essential that adequate funding for international collaboration opportunities is sustained. Defence is also encouraged to explore the reintroduction of policies that promote international research partnerships, such as the now-defunct Australia-US Multidisciplinary University Research Initiative (AUSMURI). While initiatives like the trilateral 'challenges' funded by ASCA foster some international research collaboration, they remain largely confined by country-specific funding streams and do not facilitate 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.[12]

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

[12] 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.*

provisions. UNSW is a member of the DISP and as an active partner with Defence, seeks to strengthen our 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 respective operating environments and in 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.

Recommendations

1. Government allocates a higher percentage of Defence's annual budget to R&D, targeting a level closer to its international partners like the US (16.8%), Japan (5.8%), and the UK (7%), by gradually increasing the R&D portion of the Defence budget year on year.

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. Defence continues to invest in the opportunities provided by AUKUS, focusing on joint research, development, and workforce initiatives, balancing investment in higher TRL research with continued investment in basic or fundamental research.

4. 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.

5. 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.

6. 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, AI and autonomous systems.

7. Government reviews its procurement policies to better support the acquisition of innovative capabilities from Australia's research and innovation ecosystem, while encouraging appropriate risk settings. This review should seek to make it easier for Australian researchers and industry partners to bring innovative capabilities to market.

8. 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).

9. Government review and streamline the coordination of its total R&D expenditure for defence and dual-use technologies across various inter-departmental initiatives.

10. Government investigates ways to better leverage Australian expertise in climate change science and resilience to support Defence's infrastructure and operations requirements.

11. Defence recognises universities as a key Australian export, akin to the broader defence industry, and supports their international engagement in this context.

12. Defence should maintain a focus on integration by, where feasible, adopting open architectures and standardised interoperability frameworks, balancing the integration needs of current capabilities with the incorporation of emerging technologies. This approach should aim to ensure both the seamless integration of existing systems and the swift adoption of new advancements. Universities should play a more significant role in supporting Defence in addressing these challenges.

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 the evolving challenges faced by Defence, particularly in key areas such as the Government's sovereign defence industrial priorities, AUKUS, advanced technologies, and research infrastructure. Our longstanding partnership with Defence, exemplified by initiatives like the Defence Research Institute and the Australian Defence Force Academy, demonstrates our ongoing contribution to Australia's national security.

However, to maintain Australia's competitive edge in an increasingly complex and technology-driven security environment, it is crucial that Defence increases its investment in R&D and supporting infrastructure. UNSW advocates for a more ambitious approach to Defence R&D funding, as Australia's current expenditure lags global counterparts like the United States, Japan, and the United Kingdom. To remain at the forefront of emerging technologies such as AI, quantum computing, and autonomous systems, an uplift in R&D funding is necessary. A comprehensive national audit of both military and civilian R&D infrastructure is also essential to ensure alignment with Australia's long-term strategic goals and future technological demands. Moreover, continued investment in foundational research is critical for securing Australia's defence capabilities for the decades ahead.

The AUKUS partnership offers unparalleled opportunities for collaboration in cutting-edge areas like AI-enabled surveillance, uncrewed systems, and quantum technologies. UNSW's leadership in these fields, underpinned by strong ties with global academic and industry partners, uniquely positions us

to support Australia's strategic objectives within this important alliance. Success in AUKUS requires not only advanced technology but also sustained investment in R&D infrastructure to ensure lasting outcomes. By fostering deeper collaboration between government, academia, and industry, Australia can strengthen its defence resilience and better safeguard its interests in a rapidly evolving global security landscape.

UNSW is also dedicated to enhancing international engagement through collaboration with DSTG and participation in key defence exhibitions and initiatives. Our partnerships with DSTG, the ADSUN network, and international allies like the United States, United Kingdom and Japan provide invaluable opportunities to elevate Australia's defence capabilities. To maintain Australia's competitive edge on the global stage, it is essential that funding for international research collaborations be prioritised. By strengthening these international ties, Australia will be better equipped to address rising competition and protect its strategic interests, particularly in the Indo-Pacific region.

UNSW is committed to working with Government and Defence to further Australia's security, foster technological innovation, and promote national prosperity. We also look forward to supporting the further development or implementation of the recommendations in this submission, pending Government direction.

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Date: 3 February 2025

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