INQUIRY INTO THE DEPARTMENT OF DEFENCE ANNUAL REPORT 2023–24

Submitted to

Submission to the Joint Standing Committee on Foreign Affairs, Defence and Trade (JSCFADT): Contributions of CEA Technologies to Sovereign Defence Industrial Priorities

Submitted by

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This submission responds to your inquiry into the Department of Defence Annual Report 2023-24, focusing specifically on sovereign defence industrial priorities.

CEA Technologies Overview

CEA Technologies is a leading Australian defence technology company that has been at the forefront of delivering advanced radar and defence systems for over four decades. CEA Technologies through all aspects of the industrial capability lifecycle provides Tier 1 and 2 industrial capabilities through innovation, development, manufacturing, integration and delivery of advanced phased array systems to the Australian Defence Force (ADF) and its close allies. Our longstanding partnership with the Commonwealth has strengthened with the Australian Government acquiring an ownership stake in the company in July 2023, reflecting the strategic importance of our sovereign capability. Our transition to a Commonwealth Company in January 2025 further solidifies this commitment. The company's operations align with five of the seven Sovereign Defence Industrial Priorities (SDIPs) outlined in the Defence Industry Development Strategy 2024. Below, we outline our contributions to these priorities and their significance to Australia's sovereign defence capabilities.

CEA Technologies is proud to contribute to several key programs that advance industry priorities:

SEA 5000 Hunter Class Program	Enhancing naval capabilities through state-of-the-art radar systems.
SEA 14484 Phase 2 - Anti-Ship Missile Defence (ASMD) Program	Delivered CEAFAR phased array radar and CEAMOUNT missile illuminator technology for ASMD.
SEA 1448 Phase 4B ANZAC Air Search Radar Replacement Project	Upgrading air search radar capabilities to ensure operational efficiency and effectiveness.
LAND 19 Phase 7B Short Range Ground Based Air Defence Project	Delivering advanced defence technologies to protect Australian airspace.
AIR 6500 Tranche 1 and 2 Joint Air Battle Management System	Developing integrated systems for superior air battle management.
AIR5349 Phase 3 Stage 3 Advanced Mobile Threat Training Emitter System (ADVMTTES) program	Provided advanced mobile threat emitter systems to support FA-18G operational training.
AIR 5349 Phase 6 Advanced Growler Airborne Electronic Attack Capability	Providing advanced electronic warfare solutions.
AIR 3024 Woomera Test Range Remediation Project	Supporting the remediation and modernization efforts at the Woomera Test Range.
Land 19 7B Follow On Support	Offering continued support for ground-based air defence systems.
SEA 1448 2B/4B Follow On Support	Ensuring ongoing enhancements and maintenance for radar projects.

CEA Technologies is also engaged in a number of government-to-government export projects, primarily supporting US Department of Defense activities, thereby strengthening global defence partnerships and collaboration. These initiatives underscore our commitment to advancing Australia's defence capabilities and maintaining a robust, sovereign defence industry.

1. SDIP 1 - Continuous naval ship building and sustainment

CEA Technologies has developed and delivered complex sensor and support systems for the Royal Australian Navy (RAN). These systems include the ANZAC ASMD phased array radar and weapon control system and the ongoing design and development of the Hunter Class sensor suite. These design efforts for the Hunter Class have involved challenging methods to reduce weight and space while supporting resilient system designs for future evolution of the capabilities.

Key contributions include:

- Successful installation and sustainment of the ANZAC class phased array systems across two consecutive programs since 2010.
- Successful installation of a variant of the ANZAC configuration on HMAS Choules for enhanced situational awareness and air operations.
- Development of a design baseline for the Hunter Class, which has achieved a significant weight saving and increased the flexibility of the configuration to support ongoing evolution of combat system capability.
- Introduction of a dynamically managed capability to optimise the use of available ship's power and cooling resources in damage scenarios.
- Development of a purpose built system test facility at CEA Technologies including a partial physical representation of the Hunter Class phased array radar to enable ongoing testing, evaluation and system integration with Australian Interface capabilities.

These critical ship programs have been achieved at significantly lower cost than viable imported system options.

2. SDIP 3 – Sustainment and enhancement of the combined-arms land system

CEA Technologies through all aspects of the industrial capability lifecycle develops, manufactures, integrates and delivers advanced phased array systems to the ADF and its close allies. CEA Technologies has developed and delivered complex highly mobile sensors for ground based air defence with phased array systems providing the detection and fusion to support target engagement and is delivering additional systems to support long-range fires capability. These phased array systems are developed and manufactured in Australia providing long-term opportunities for adjacent local industry to participate in design and manufacturing of support systems, specialised modules, mechanical and electrical assemblies.

Key contributions include:

- Successful installation of highly mobile sensors onto existing protected mobility vehicles and heavy lift vehicles.
- Integration of sensors into the National Advanced Surface-to-Air-Missile System (NASAMs) capability to support short-range ground based air defence.

- Integration into wider ground based battlespace management to support long range fires.

These contributions have replaced key systems, which otherwise would have been procured from overseas vendors at higher acquisition and sustainment costs and with lower capabilities to "maintain relevance in a changing threat environment".

3. SDIP 5 – Development and integration of autonomous systems

CEA Technologies has developed, manufactured and integrated advanced multi-mission phased array payloads for air vehicle systems to support ongoing test and evaluation of operational capabilities. These systems have involved the reduction in size and weight of phased array systems and integration with air vehicle mission systems.

Key contributions include:

- Successful design and manufacture of small vehicle, multi-mission electronic warfare payload systems.
- Integration into air vehicle mission systems.

These contributions have replaced key systems, which would otherwise have been procured from overseas vendors at higher acquisition and sustainment costs and with lower capabilities to "maintain relevance in a changing threat environment".

4. SDIP 6 - Integration and enhancement of battlespace awareness and management systems

CEA Technologies, through all aspects of the industrial capability lifecycle, provides Tier 1 and 2 industrial capabilities through development, manufacturing, integration and delivery of advanced phased array systems to the ADF and its close allies. These systems are both modular and scalable to support many diverse applications including battlespace radar, electronic warfare, communications and wide area robust sensor networks. These highly adaptable phased array systems and networks provide operational resilience in degraded environments with increased automation and advanced signal processing. These phased array systems are developed and manufactured in Australia providing long-term opportunities for adjacent local industry to participate in design and manufacturing of support systems, specialised modules, mechanical and electrical assemblies.

Key contributions include:

- Development of unique and cost effective solutions for ADF land, sea and air applications.
- Innovative technology solutions designed and manufactured in Australia.
- Advanced active, passive and electronic warfare sensors with integrated wide area sensor fusion capabilities across land, sea and air domains.
- Building strong and diverse relationships with US and UK through participation in major development programs including test, evaluation and trial opportunities.

- The high value of export systems leads to direct support of local industry and reduces the need for ADF to import of complex systems.
- CEA Technologies' systems have been used as key test assets in US test, evaluation and training for advanced aircraft and weapon systems, which are also in the ADF inventory.
- Provision of advanced surveillance and fire control capabilities significantly enhancing lethality and survivability of the ANZAC FFH Class ships and the enhanced NASAMS Short Range Ground Based Air Defence and AIR6500 Integrated Air and Missile Defence systems.
- Significantly increased system availability for critical targeting functions.
- CEA Technologies' apprenticeship scheme is meeting our objective of 60 plus apprentices across the major mechanical and electronic domains.

These contributions have replaced key systems, which would otherwise have been procured from overseas vendors at higher acquisition and sustainment costs and with lower capabilities to "maintain relevance in a changing threat environment".

5. SDIP 7 - Test and evaluation, certification, and systems assurance

CEA Technologies has developed strong capabilities to plan and conduct, test and evaluate delivered systems to the ADF and US Navy, Army and Air Force. These capabilities continue to be exercised in complex and demanding circumstances including in remote arctic sites. Expertise in test, evaluation and analysis provides complementary skills to those required to design and manufacture complex systems in Australia.

Key Contributions include:

- Building a sustainable capability for test and evaluation, certification, and systems assurance, has benefitted both CEA Technologies and Defence with opportunities to host ADF personnel in the teams to gain knowledge and expertise in all aspects of system development and delivery.
- Manufacture of operational test and simulation systems for continuing evolution of fielded capabilities.
- Development of a purpose built system test facility to enable ongoing testing, evaluation and system integration with other industry capabilities.
- CEA Technologies' availability of test systems and people with test and evaluation knowledge has enabled direct support to other operational test and evaluation (OT&E) activities conducted by the ADF and the US. These include force level integration testing and safety monitoring for complex weapon tests.
- Provision of purpose built CEA Technologies range radar systems to the Woomera Range has enhanced the availability and flexibility to be applied in test and trial events. This has contributed to the higher throughput of test and trials but also enhanced the safety of these events.

- CEA Technologies' ongoing programs require complex system assurance and cyber-worthiness to achieve operational status. The 'in-house' expertise reduces the load on Defence's workforce constrained resources to achieve these outcomes.

CEA Technologies continuous building of skilled engineers and technicians to meet the future and ever-changing certification and systems assurance requirements, provides an underpinning pool of practitioners who have practiced and used the methods to support these outcomes across their career.

Conclusion

CEA Technologies is proud to actively contribute to Australia's sovereign defence industrial base across these five critical SDIPs. Our work reflects the broader goals of the Defence Industry Development Strategy 2024 by fostering a capable, resilient, innovative, and competitive defence industry. We remain committed to advancing Australia's strategic interests and supporting the ADF with cutting-edge technologies that uphold national security and sovereignty.