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Submission to Joint Standing Committee on Foreign Affairs, Defence & Trade – Inquiry into a *Bipartisan Australian Defence Agreement*

KEY POINTS

- DMTC has a key role in the Defence innovation system, and in advancing technologies in priority areas for the benefit of ADF capability and Australian industry capacity.
- DMTC has benefited from bipartisan support and from a sustained high level of engagement with our Defence customer.
- Success in the defence sector, and in innovation and technology development in particular, is widely accepted as a 'long game'. Technologies can take many years to develop and mature, and this requires discipline and perseverance but also a standardised approach.
- Bipartisan agreement on a range of matters, not just in relation to Budget provisions, could be expected to realise long-term benefits for Defence and its industry and research partners. These include industry policy, the setting of innovation priorities within the capability life cycle, equipment procurement frameworks and the management of local content obligations.
- Workforce considerations, for Defence and for Australian industry, are another critical area that demands a long-term view.

The Defence Materials Technology Centre (DMTC) is an independent, not-for-profit company that operates in the Australian defence and national security context.

DMTC is uniquely positioned as an industrial capability partner of choice to work with Australian industry to address technology challenges and pursue capability enhancements in areas identified as priority innovation needs by Defence.

Headquartered in Melbourne, DMTC is very much a national endeavour. DMTC was established in 2008 and has enjoyed bipartisan support in its pursuit of better outcomes for Australia's warfighters.

Our programs enhance Australian Defence Force capability through collaborations that boost Australian industry capability and capacity and are underpinned by Australia's world-renowned research expertise.

DMTC's role in the Defence innovation system, specifically through the new Defence Innovation Hub, was confirmed and extended through the 2016 Defence Industry Policy Statement.

The 2016 Defence Industry Policy Statement (DIPS), released alongside the 2016 Defence White Paper, identified DMTC as a strategic partner to Defence in the rollout of the new Defence Innovation Hub. Defence has since written to DMTC to formally confirm that DMTC will continue to have a vital role to play in undertaking world-class research and translating the outcomes of this research to create industrial capability.

With the closure of the Government's establishment contract with DMTC in 2015, activities have commenced under the new Innovation Hub contract furthering our expertise in the air, land and maritime sectors. In addition, DMTC is currently engaged in discussions with a number of current and prospective new industry and research partner organisations regarding proposals for Defence Innovation Hub funding, and DMTC continues to work within and across the broader Defence Integrated Investment Program to deliver beneficial outcomes to Defence's capability managers through its collaborative model. The Defence Science & Technology (DST) Group, as the primary science adviser to Defence, is a DMTC participant and directly supports a number of DMTC's research projects. DMTC is currently working to identify research and industry partners for a number of new programs in technology fields spanning medical countermeasures, multispectral sensors and manufacturing & sustainment technologies relevant to the F-35 Joint Strike Fighter.

Collaborating through DMTC allows Australian industry to leverage our existing relationships with Defence and research agencies, and build local supply chains. DMTC's standardised approach to contract management and our project oversight role removes an administrative burden for companies and allows industry partners to direct all resources to realising project outcomes.

DMTC projects & programs operate on a co-investment model, an approach that allows each partner to leverage the expertise, investment, human resources and capabilities of the other partners. DMTC projects would not succeed without active contributions from each project partner. This genuinely collaborative model provides the pathway to creating industrial capability by solving complex challenges articulated in the defence and national security context.

Our work is differentiated from other organisations who operate in the defence sector in a couple of key ways – in what we do (spanning many of the traditional 'domains' within the defence sector, not just constrained to or specialising in one) and in how we do it (truly collaborative programs built on a co-investment model, not a grants-based or third-party investor approach).

DMTC continues to play an important role in building a more capable and defence-ready industry sector. DMTC has a strong focus on engaging small to medium enterprises (SMEs) in its research and development activities and equipping them to participate in prime contractors' supply chains.

The early identification of capable industry partners ensures that technologies and capabilities have a clear path to adoption and commercialisation. The involvement of the Defence customer ensures ongoing relevance to the Defence end-user. DMTC recently conducted a review for Defence of high strength steels with a view to the use of Australian steel for the shipbuilding and submarine programs announced by the Australian Government and confirmed in the recently released Naval Shipbuilding Plan. DMTC's expertise has contributed to Defence's evaluation of the capabilities of Australian industry in relation to all aspects of the supply chain for the production and fabrication of naval ships and submarines.

DMTC's approach to Intellectual Property aligns with the Defence Innovation Hub's IP Strategy. IP is controlled at the individual project level. Ownership of all background IP remains with the relevant partner and all project partners retain automatic rights, within agreed fields of use, to practise IP that is developed (or advanced) during the project. Fields of use for IP developed through DMTC projects are negotiated with partners at project commencement.

Strong partnerships with our industry and research partners have underpinned DMTC's successful collaborative research program which has achieved significant recognition including:

- A High Commendation at the most recent Pacific 2017 conference and trade exhibition;
- A Eureka Prize in the National Security stream for DMTC's work in improving protection and manufacturing efficiently levels in Australia's fleet of Bushmaster protected mobility vehicles;
- A CRC Excellence in Innovation Award for protective technologies that have been acknowledged by senior Defence personnel as saving Australian troops' lives in the Middle East Area of Operations;
- National Innovation Awards at the premier Land, Sea and Air defence conferences (respectively Land Forces 2014, Pacific 2015 and the Australian International Air Show 2015);
- Young researcher awards at the Land, Sea and Air defence conferences; and
- A case study on best practice defence innovation in the 2016 Defence Industry Policy Statement.

Encouraging defence industry innovation and research

As a not for profit public company, DMTC exists to build deep expertise and intellectual property in Australia that can be exploited for our Defence customer and for Australian industry.

DMTC is actively engaged in building both the capacity and capabilities of Australian defence industry through a growing program of activities to benchmark and advances in key areas of knowledge within Australian manufacturing and defence industry.

DMTC's Industry Capability Development Program aims to create a network of 'Defence-ready' companies with benchmarked, globally competitive capabilities. The program aims to foster collaboration between local small- to medium-sized enterprises (SMEs) and also build a critical mass of local capability that can be presented to prime contractors for major Defence projects.

Our history and track record of success in industry capability development provides a useful case study of what can be achieved by taking a broad, long-term view of:

- The skills and expertise required to fulfil Defence requirements (both traditional white and blue collar roles);
- The significant benefits of ongoing best practice benchmarking and capability development (learning by doing) to stay at the cutting edge of technology; and
- Genuine collaborations that engage across all levels of government, all states of Australia and with both prime contractors and SMEs alike.

DMTC's activity under this program focuses on the development of a capability rather than a specific product. The model offers Defence the opportunity to invest in industrial capability development and skill enhancement in a pre-competitive environment. In this regard, activities such as welding or manufacturing process improvements can be addressed independently of design or prime contractor selection. Participants in DMTC's programs gain exposure to

innovative technologies, best practice techniques and processes and insights into quality, safety and certification standards expected by Defence.

DMTC is planning future activities in other specific manufacturing techniques and technologies, for example to enhance Australian industrial capability in areas such as corrosion management, composite materials and additive manufacturing.

Encouraging education, including developing the future workforce

DMTC has a significant Education Program through which it seeks to support the development of both technical and business expertise in defence materials and manufacturing. Through this program, DMTC invests in and supports the development of future leaders and technical experts for the defence industry and research sectors.

Through our partner Universities, DMTC offers full, half and top-up Masters and PhD scholarships to students based on alignment with future defence capability requirements and industrial opportunities for Australian industry. Masters and PhD projects are utilised to investigate specific areas of research within larger collaborative projects involving Defence, industry and research partners.

DMTC's Education Program collaborates with the Research Training Centre for Naval Design and Manufacturing (RTCNDM) and Defence Science Institute (DSI) by involving students from these programs in DMTC workshops and annual Student Conference; and invests in developing early stage science, technology, engineering and mathematics skills through its established Vacation Student program in which final-year engineering and science students are sponsored to complete 12 weeks of vacation employment with DMTC partners.