

INDUSTRY CAPABILITY Development

“DMTC’s support in setting up the titanium machining capability for the Joint Strike Fighter Program has resulted in opportunities being realised and significant exports for Australian industry, not just for BAE Systems.”

Mr Brad Yelland
BAE Systems Australia – Director, Engineering & Technology

“This type of activity will be very useful in pulling together a network of capable SMEs across the country and providing them with a credible pathway to bid for work with prime defence industry contractors. And it’s based on verified and benchmarked data.”

Dr Mark Hodge
CEO, DMTC Ltd

“It’s always a challenge to benchmark your business from one sector to another. By demonstrating that we can meet Defence’s requirements, it positions our company for both current work and other opportunities in the future.”

Mr Dave Hackett
Managing Director, DGH Engineering (Queensland SME)



PROGRAM CONTEXT

DMTC’s involvement in a range of past and present industry capability development activities has been pivotal in building national supply chains, resulting in global opportunities for Australian industry.

DMTC’s Industry Capability Development (ICD) program aims to create a national network of ‘Defence-ready’ companies with benchmarked, globally competitive capabilities. It is a natural fit with DMTC’s strong focus on engaging SMEs in our programs.

Following previous capacity-building successes in areas such as CNC machining and additive manufacturing (3D printing), current efforts focus on enhancing Australian industry’s welding capabilities. DMTC’s focus on activities in the pre-competitive phases of industrial capability development, together with its approach to IP rights, facilitates skill and technology transfer throughout Australian industry supply chains.

The Australian Government’s commitments to a continuous shipbuilding program and to major land vehicle contracts is expected to place pressure on Defence’s existing supply chains. It is highly likely that fabrication work will need to be shared across sub-contractors to meet demand. The multinational prime contractors delivering these major programs are increasingly looking beyond traditional defence supply chains to identify highly skilled regional SMEs

with valuable experience in industries such as mining and natural resources.

The multi-phase DMTC ICD Program is helping companies to move up the skills curve and demonstrate their skills in defence-relevant areas through process benchmarking and technology transfer activities. It also provides mentoring and evidence-based feedback on what SMEs need to do to lift themselves up the skills curve.

The DMTC team leading the workshops involves research partners from UoW and SUT with assistance from the Centre for Defence Industry Capability (CDIC) and relevant certification partners including Weld Australia.

For the prime contractors, DMTC’s benchmarking and technology transfer programs continue to:

- build the depth, quality and international competitiveness of the supply chains supporting their Australian operations
- assist with meeting commitments to maximise Australian industry content in programs
- put Australia ‘on the map’ in relation to decisions about work packages flowing to Australian subsidiaries of global primes.



Participants in the multi-phase program receive information and mentoring in the latest technologies currently being applied to the welding of defence platforms such as automation, offline programming and augmented reality.

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PROGRAM DELIVERY

DMTC's multi-phase program is intentionally seeking to:

- leverage the experience and success of previous benchmarking activities, Computer Numerically-Controlled (CNC) machining and tooling, additive manufacturing
- respond to concerns regarding Australian industry's capacity and competitiveness
- align with the focus on Australian industry as a Fundamental Input to Capability and efforts to maximise Australian industry involvement in major Defence projects
- engage with areas of regional Australia with as-yet untapped potential to contribute to the defence sector.

The program continued to grow in 2017-18 with support from the Queensland Government for five regional ICD projects based on welding of high strength steels for both maritime and land vehicle applications. DMTC is working closely with Defence Industries Queensland to assist manufacturers to maximise opportunities to enter defence industry supply chains.

The projects in Mackay and Cairns focus on the welding of high-strength steels for naval and maritime platforms, while the Townsville, Rockhampton and Brisbane projects will address steels and technologies applicable to land vehicle platforms.

While involvement in DMTC's project does not equate to a formal welding accreditation or qualification, the opportunity to work with candidate materials and consumables provides a key indicator of an SME's capability and potential to qualify against the formal Australian standards. It also provides companies with an overview of available defence sector opportunities and an understanding of the levels of performance and responsiveness expected by the defence primes.

Each regional project consists of an initial detailed questionnaire to understand the capability of the

participants. This allows DMTC to tailor the project to the experience of the participants. This is followed by a workshop to introduce companies to Defence, to working with DMTC and to the scope of the project.

The next stage of the project involves the preparation of the standard paperwork for the weld process followed by welding trials on a set of representative test plates. A local test house is used to provide the necessary assessment of the welds. The test results are analysed by DMTC and the results are used to facilitate follow-on mentoring and contact with experts in the DMTC team. The weld results themselves form only a part of the entire assessment with a significant focus on the timely and effective delivery of the initial paperwork through to the final information pack.

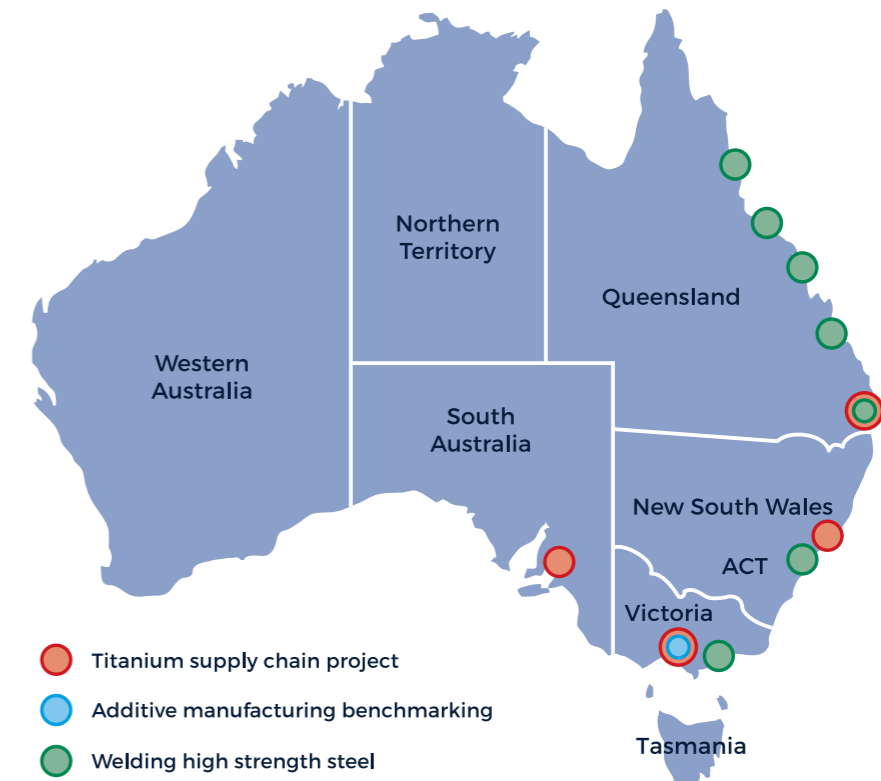
Throughout the projects, information is also shared on the latest technologies currently being applied to the welding of defence platforms such as automation, offline programming and augmented reality.

Companies engaged to date have reported positive outcomes including:

- education on the latest techniques and processes in welding high strength steels
- information on the international standards and processes required for the defence sector
- recommended pathways to welding practice improvement such as use of digital technologies for steel fabrication and installation
- opportunities to network and collaborate to establish regional capability clusters.

DMTC is also planning to expand the Program to address other specific manufacturing technologies to enhance Australian industrial capability. Some examples include additive manufacturing and casting techniques, along with technologies critical to the digitalisation of manufacturing.

BUILDING CAPABILITY ACROSS AUSTRALIA



PROGRAM PHASES

- 1 Focusing on regional clusters of capability – companies with readily transferable skills to move into the defence sector (e.g. resources, automotive).
- 2 Setting regional clusters within a national network of capability, and engaging with the primes to embed the Defence sector context.
- 3 Continuing optimisation, innovation and technology insertion to supply chain partners, maintaining best practice.