INDUSTRY CAPABILITY DEVELOPMENT

DMTC's leadership of industry capability development and technology transfer activities closely aligns with Defence's focus on increasing opportunities for Australian industry to contribute to sovereign defence capability outcomes.

The Industry Capability Development (ICD) Program is one of the best examples of the way in which DMTC engages across all elements of the national defence industrial sector to build industrial capacity and capability. Issues of capability (expertise, skills, quality, traceability) and capacity (demand, throughput, reliability of supply) must be addressed early to put Australian industry in the best position for future success.

Participants uniformly report a range of positive outcomes, ranging from a greater understanding of the defence industry and its exacting standards to new technical knowledge.

DMTC's ICD Program provides both process benchmarking and technological expertise to help these Australian companies to enhance 'factory floor' operating procedures and demonstrate their potential to compete for defence sector opportunities. It also provides an important mechanism for companies new to Defence to understand the characteristics of the sector such as market structure, project lead times, standards and accreditations and security requirements.

A key element of the ICD Program activity to date has been DMTC's work to enhance Australian industry's capabilities in welding of the specific grades of steel required for maritime and land applications, demonstrating both process and efficiency improvements and technical support to demonstrate what SMEs need to do to lift themselves up the skills curve.

The Smart Enough™ Factory - supported by Sutton Tools, RMIT, AMGC and UQ - demonstrates that even modest process changes and advances in digital literacy can make their equipment 'smart enough' to collect performance data, improve traceability and inform decisions on investments in better ways of doing business.

Adopting smart technology, even in iterative steps, can significantly enhance small business productivity. Real-time monitoring of production equipment can help address bottlenecks and data systems linked to production alerts can prevent wastage, reducing rework or reject rates and assist with Quality Assurance. Using simple cost-effective technology, companies can learn and adopt the fundamentals of Industry 4.0.

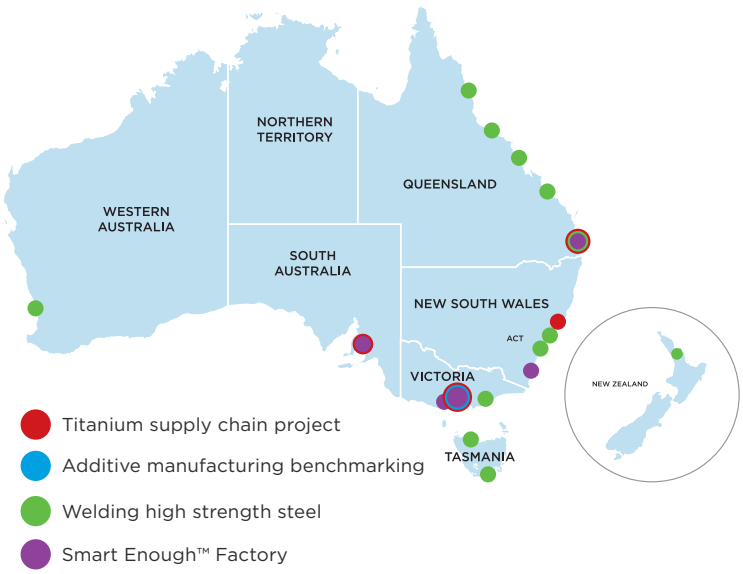
Experts engaged by DMTC provide mentoring and evidence-based feedback, both during the workshops and in post-activity reports, highlighting improvement opportunities for each company.

The DMTC team leading the workshops involves research partners from UoW, SUT, RMIT and UQ. Participants are strongly encouraged to seek assistance from the CDIC and relevant certification bodies.

An additional area of focus in 2020-2021 and beyond will be in the area of next-generation additive manufacturing. These projects will include trials of a range of emerging production techniques and post- production processing to verify component quality and mechanical properties.

Through the expansion of the ICD Program into new manufacturing technology areas and themes, DMTC is demonstrating its ongoing commitment to building the capacity and resilience of small businesses, many of whom have niche capability and untapped capacity to offer to defence prime contractors.

A key element of DMTC's Smart Enough™ Factory project solution is the ability to retrofit and integrate low-cost sensors across both legacy and modern manufacturing equipment. The concept is to offer a 'Factory in a Box' kit (the sensors shown on the right of the picture above, connected to legacy factory equipment at industry partner Sutton Tools) that provides a low-cost entry point to realise benefits of Industry 4.0 adoption for Australian SMEs.



SUCCESS STORY

"The pilot project that Cablex has undertaken with the DMTC team has exceeded expectations, moving from proving the concept's merit to considering its value on the front lines of our production environment. The Smart Enough™ Factory kit provides a sensor overlay for existing machinery that benefits everyone from operators to managers and decision-makers. It builds on our company's experience with LEAN and 5S and provides a clearer picture in terms of production monitoring, visual dashboards and traceability."

Paul Stokes
Project Director, Cablex

COMPANIES ENGAGED: 2019-2021

Queensland Government
Tasmanian Government
New Zealand Trade & Enterprise Te Taurapa Tūhono
Geelong Manufacturing Council
iDiC Indigenous Defence & Infrastructure Consortium
suttontools world class cutting tools
University of Wollongong Australia
RMIT University
Swinburne University of Technology
The University of Queensland Australia
TEI 50 Years Engineered Solutions
intertek Total Quality. Assured.
CSF Industries
Norship
bse maritime solutions
Wulguru Group
RGM Maintenance
GCI Group
Wisely Services
G&O Kert
smw group
Advanced NDT Services
RUD
Monadelphous
Berg
Bendpro
Frontline
DanMor Engineering Pty Ltd
Jade Engineering
AR Air Radiators
Cablex
Brockman Engineering
Coastal Engineering & Bolting
Minecorp
cpt Engineering
Direct Edge Manufacturing
DSK Engineering Ltd
Hanlon Industries
HERA
JPM J.P. Marshall Engineering
Machine Part Welding
Manson Anchors
Bowmaster
TMEC
Muir
TRT ...for the long haul
Marand
Maddison Wright Engineering
MalTec Engineering
D R May Inspections
Fusion NDT
QCC Qualitas

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