

Manufacturing

Sovereign Capability

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Agenda

About DMTC

- Sovereign Capability Context
- DMTC Experience

SME Context



About Us

Vision: To provide technology solutions enabling industry to

enhance Australian Defence and national security capability.

Mission: DMTC leads, facilitates and manages cooperative research

and development in the defence and related sectors in

manufacturing, engineering and applied science to create and

enhance Australian industrial capability. The Defence and

national security customers, industry and research sectors are

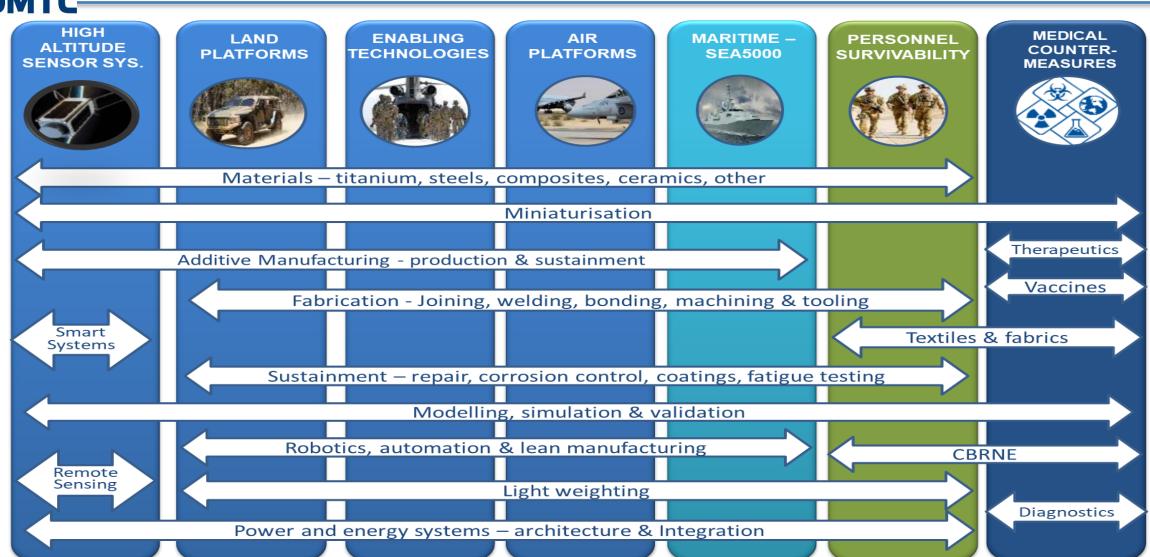
key stakeholders.

Intent: CAPABILITY THROUGH COLLABORATION

Structure: Public Company. Not for Profit. Limited by Guarantee



About Us





Sovereign Capability Context

- "access to, or control over, the essential skills, technology, intellectual property, financial resources and infrastructure within our defence industrial base as required" 1
- "the ability to ensure, **full national control**, without reliance on any direct foreign assistance, of certain capabilities identified as vital to national security"²
- "high-quality and sustainable **manufacturing nation** that helps to deliver a strong, modern and resilient economy for all Australians"³

- 1. https://www.defence.gov.au/business-industry/capability-plans/sovereign-industrial-capability-priorities
- 2. https://www.lawinsider.com/dictionary/sovereign-capability
- 3. https://www.industry.gov.au/data-and-publications/make-it-happen-the-australian-governments-modern-manufacturing-strategy



Automated Welding

- Weld high hardness steels
- Weld long sections
- Robot programming capability
- Weld complex geometries

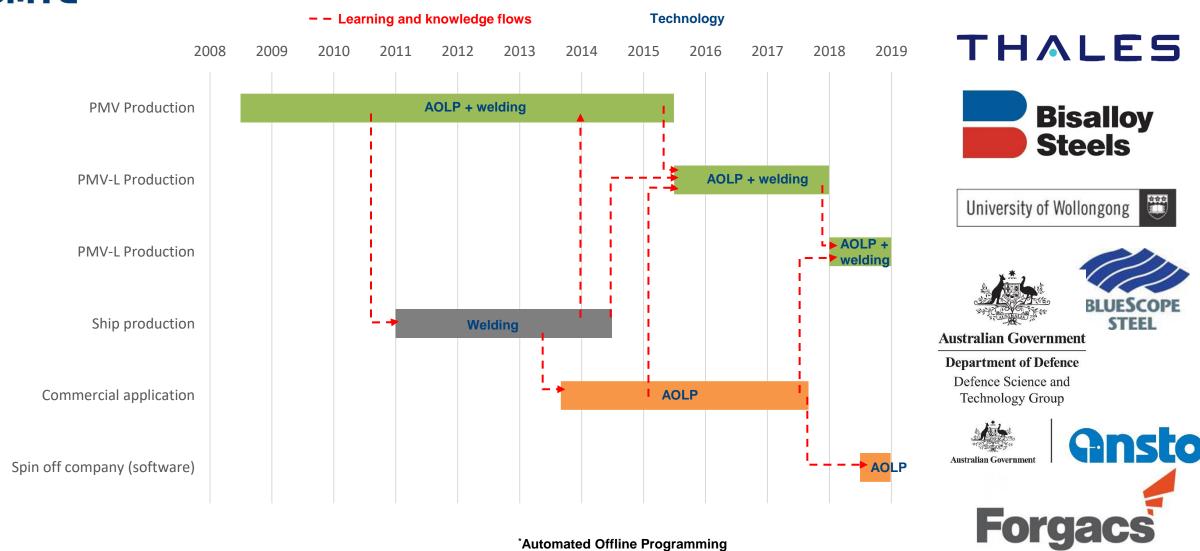








Automated Welding





Composite Armour

- Highly curved shapes
- Rapid production time
- Cost effective









Composite Armour

*Double Diaphragm Deep Drawing

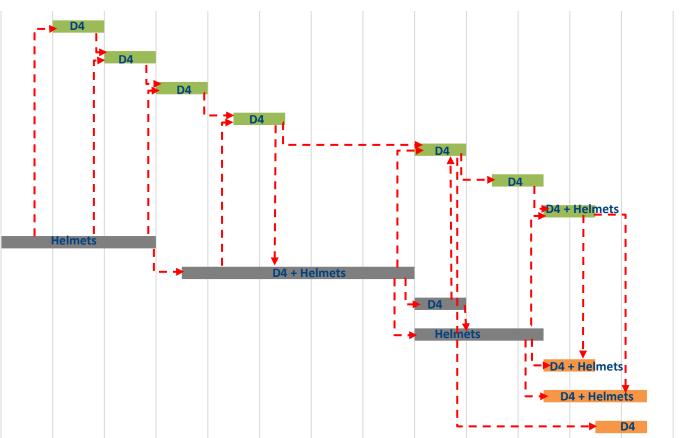
- - Learning and knowledge flows

Technology

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

Research machine build (Gen 1) Research machine build (Gen 2) Research machine build (Gen 3) Research machine upgrade Pilot machine build Pilot machine process upgrade Pilot machine tooling upgrade Hemisphere development Helmet development Numerical simulation Helmet prototyping Commercialisation 1 Commercialisation 2

Commercialisation 3



Diggerworks FOR THE WARFIGHTER











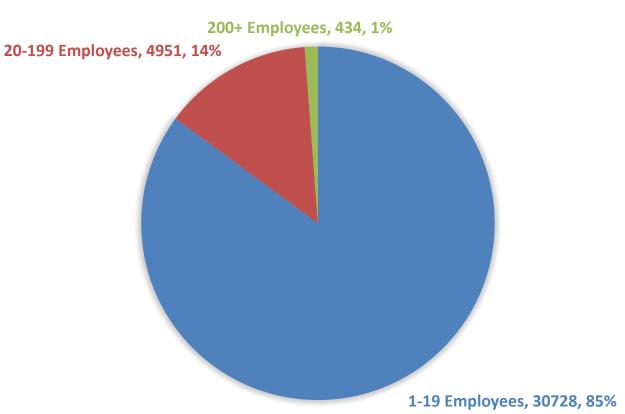




Key Patterns

- Complex development path
 - Cannot plan in advance
 - Have to learn and pivot
- Non-linear path
 - Need multiple skills
 - Collaboration is key
- Long term investment
 - Be prepared to stop and start
 - Funding support is essential

COUNT OF MANUFACTURING FIRMS, AUGUST 2021





Industry Capability Development





Industry Capability Development



Benchmarking
Knowledge
Collaboration
Productivity Improvements
Defence Industry Culture



Capability Mapping
Engagement
Increased Utilisation
Informed Policy

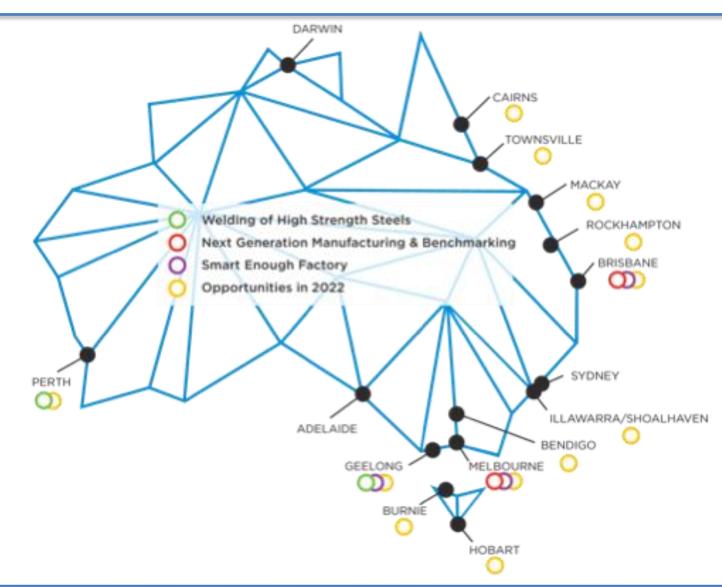


Sovereign Capability
Capacity
Value for money

A highly capable and comprehensive industrial supply chain



Capability through Collaboration





Typical delivery model

Month 1>

Months 2 - 3

Month 4

Month 5

Month 6

Workshop One

- Project Outline
- •FIAB Live Demo
- Current **Business Systems**
- •I4.0 Strategy on a Page
- Business Needs
- •Equipment & Processes
- Cyber Security Awareness

Site Visit

- Business Systems Awareness
- VDMA Awareness
- Requirements Gathering
- Establish Project Team
- •Supply of FIAB Kit

Workshop Two

- Technical Demonstrations
 - Logic Development
 - Dbases

Cyber Security Training Module

Site Visit

- Develop Project Scope
- Monitoring Requirements
- Physical Integration Strategy
- •VDMA Scorecard

Onsite Implementation

- Intern Support
- •I4.0 Strategy on a Page

Ongoing Consultation Phase

- Data Outputs
- Information Value
- Production Changes

Final Workshop

- Outcomes **Analysis**
- Lessons Learned
- •I4.0 Strategy on a Page
- Next Steps

Muland Forces 2021 – ICD Delegate Day

- 18 SMEs
- ICD & SEF Briefings
- Guided Tour
- Networking

- CASG
- Hanwha/Rheinmetall
- State Govts
- CDIC











Community of Practice



Definition:

'groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis'

Wenger, et al, 2001



Community of Practice



























MANUFUTURES



























Smart Enough Factory





Future Opportunities





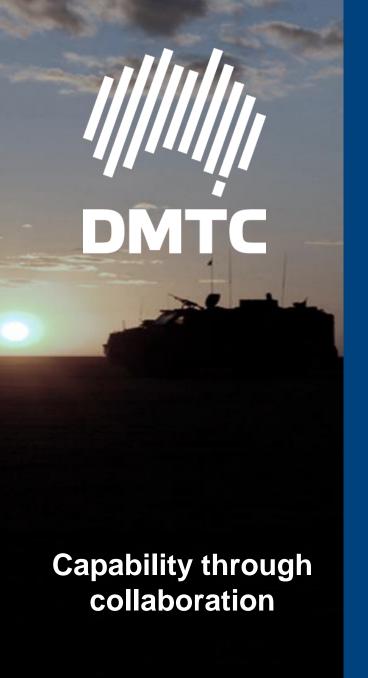


- Composites
- Smart Enough Factory
- Welding High Strength Steel
- Additive Manufacturing
- And more











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Linked in

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