DMTC NEWS

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CAPABILITY THROUGH COLLABORATION

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From the CEO

The recent Defence+Industry Conference in Canberra reminded me, again, of the complex challenges faced every day by our defence and national security leaders, but also of the opportunities for industry and research partners to play a role in this national endeavour.

More than just the dollars and cents being invested through the 2016 Defence White Paper, there was a real sense too, of a significant change in attitude inside Defence, acknowledging the need for genuine collaboration with industry.

I've said many times that I'm confident, and proud, of DMTC's track record in delivering real outcomes, through collaboration, that have enhanced defence capability. Through the Defence Innovation Hub and the momentum provided by the White Paper, we have the opportunity to play an ongoing, if not expanded, role.

Our approach to this task, across the whole DMTC community but particularly in the head office team, is firmly founded on a commitment to business excellence and improvement. This has recently been confirmed with DMTC's certification to the ISO 9001:2015 Quality Management Standard. This is an important (and independent) verification of our approach to the business, and a great credit to the team.

I would also like to extend our congratulations to senior leaders from our Defence and industry community, including two of the guest speakers from our annual technical conference in March. Major General Kath Toohey CSC was recently awarded the Medal of the Order of Australia for her service to the Australian Defence Force in the fields of capability development and education, and BAE Systems has announced that Brad Yelland will take on the national role of Director – Engineering with effect from 3 July this year. Additionally, I would like to congratulate the Chief Defence Scientist, Dr Alex Zelinsky, who was made an Officer of the Order of Australia in the Queen's Birthday Honours.

As well as reading this newsletter I would encourage you to take the opportunity to stay in touch with our latest news by following DMTC on our website, and on LinkedIn and Twitter.

Dr Mark Hodge
DMTC CEO

MoA aims to build capacity in welding technologies

Pictured: (L to R) WTIA CEO Mr Geoff Crittenden and DMTC CEO Dr Mark Hodge.

The Defence Materials Technology Centre (DMTC) and the Welding Technology Institute of Australia (WTIA) have signed an agreement to extend their collaboration and to support Australian firms, particularly small to medium enterprises.

The Memorandum of Agreement (MoA) commits the two organisations to work together to develop a broader understanding of existing technology footprints and to build a program of benchmarking, capacity building, training and certification activities.

The MoA comes at a time of policy and practical challenges in terms of growing industrial capacity and broadening defence supply chains.

The agreement builds on DMTC project work already underway, supported by WTIA, to build industry capacity in areas of Defence priority such as welding of high-strength steels.

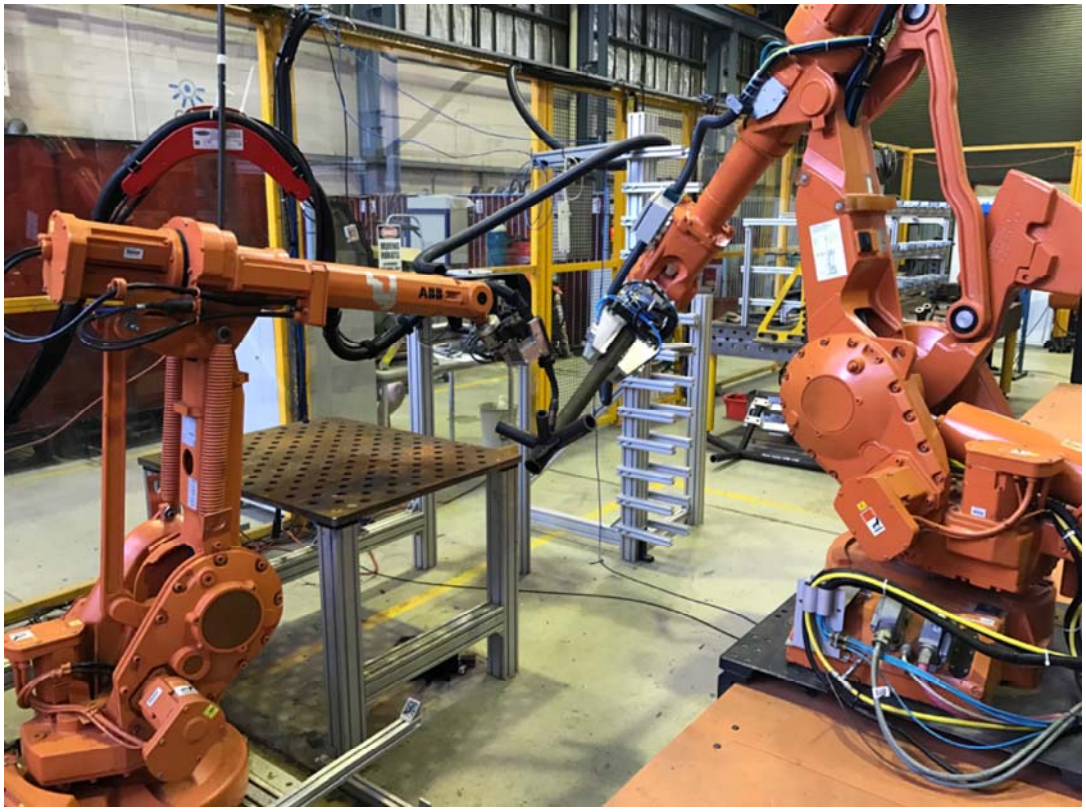
DMTC's Chief Executive Officer, Dr Mark Hodge, and his WTIA counterpart Geoff Crittenden signed the MoA into effect at the National Manufacturing Week and AusTech expo in Melbourne.

"Our work continues to focus on delivering a beneficial outcome first for our Defence customer, and for our industry partners. In that context, DMTC has already helped many Australian suppliers to embrace new technologies and better understand Defence requirements," Dr Hodge said.

"Formalising our relationship with WTIA will help us to share information on technology development."

Under the MoA, the two organisations will also seek to work closely with the Centre for Defence Industry Capability (CDIC), the establishment of which was one of the key announcements in the 2016 Defence Industry Policy Statement.

Robotic welding test bodes well for Hawkei subframes



Pictured: A robotic welding machine at the University of Wollongong tests joint configurations.

The University of Wollongong and Thales Australia have demonstrated a concept robotic system for the fabrication of complex pipe structures such as those found on the subframe of the Hawkei vehicle, Thales' light protected mobility vehicle being produced for the Australian Defence Force.

Three joint configurations were tested at the University's robotic technology cell in a production simulation to assess the feasibility and repeatability of the technologies developed.

This work expands the capability of Automated Offline Programming – initially developed for the production line of Thales' Bushmaster vehicle – with additional capability to identify weld seams from curved structures and a novel calibration system to ensure the accuracy of the weld paths performed by the robot.

The impressive test results achieved are the first step towards implementing robotic welding automation for the manufacture of Hawkei subframes.

New laser cladding facility to leverage DMTC research

RUAG Australia is poised to capitalise on new laser cladding expertise developed through DMTC, with plans to establish a laser cladding facility and develop repair schemes for high-strength steel aircraft components.

The Victoria-based manufacturer has a long history of using additive manufacturing in aircraft component maintenance, repair, overhaul, and life extension.

To complement and expand its existing capability, RUAG Australia has been participating in laser cladding research projects through DMTC, partnering with the Defence Science and Technology Group, Swinburne University of Technology and RMIT University.

“Together with DST Group and DMTC we have developed some successful laser deposition applications for the F-18… we are still at proof-of-concept stage, but we are hoping for an initial capability by the end of 2017 and some certified solutions by the end of 2018,” said John Teager, MD, RUAG Australia.

“It’s a staged approach, first working together to develop the technology and the techniques, then to prove them and then to deliver the capability.”

RUAG Australia recently received a Capability Technology Demonstrator contract from the Australian Government to establish a laser cladding facility on site that utilises the knowledge generated by the DMTC program.

“The program has built up a knowledge base of optimal parameters, deposition strategies, material combinations, and performance characteristics possible with laser cladding,” explained RUAG Research and Technology Engineer Nicholas Orchowski.

The newly established laser cladding capability will assist development of repair schemes for high-strength steel aircraft components, including sustainment solutions for the Joint Strike Fighter aircraft.

Experts tackle deadly CBRNE threats at international forum

Recent history has demonstrated that military personnel and civilian populations could be exposed to highly hazardous CBRNE agents following conflicts, disease outbreaks and natural disasters, industrial incidents or terrorist attacks.

DMTC’s Medical Countermeasures Program Leader, Dr Felicia Pradera, recently attended and addressed the 2nd International Conference CBRNE - Research & Innovation in Lyon, France, which was co-sponsored by the NATO Science for Peace and Security Programme.

Research streams within the conference included medical countermeasures; detection, identification and diagnosis; and protection/decontamination.

Dr Pradera’s participation in the conference provided an opportunity to understand how our international colleagues are building the bridge between civilian and defence research and innovation in the area of CBRNE countermeasures and explosive detection.

Dr Pradera’s keynote address articulated the process that the Australian Government has undertaken through the development of the successful DMTC Medical Countermeasures Program and the proposed complementary MCM program under the Next Generation Technologies Fund.

"The presentation was well received and there was particular interest in our collaborative engagement model," said Dr Pradera.

For any further questions regarding the conference please contact Dr Pradera directly: felicia.pradera@dmtc.com.au

Prize spurs RMIT engineering student toward PhD

Pictured: Prize winner Ninad Dharmadhikari with RMIT Professor Mark Easton. (Image courtesy of RMIT)

Graduating RMIT student Mr Ninad Dharmadhikari has received a Certificate Of Achievement and the Defence Materials Technology Centre Prize for Best Student, Master of Manufacturing Engineering, in 2016.

“The DMTC prize and a chat with (DMTC CEO) Mark Hodge has hugely motivated me to push myself further. I am now considering doing a PhD in the near future,” Mr Dharmadhikari said.

Mr Dharmadhikari is currently employed by South East Water as a Research & Development Engineer.

Podcasts of note...

Defence Connect podcasts canvas the views of senior defence and industry leaders on current issues. Recent guests have included DMTC CEO Dr Mark Hodge and the Managing Director of the Advanced Manufacturing Growth Centre, Jens Goennemann.