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CAPABILITY THROUGH COLLABORATION

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From the CEO...

Our last DMTC Newsletter was published just a week prior to our annual technical conference in Canberra.

As it seems to do every year, our conference exceeded all of our expectations. I was very impressed with the quality and depth of the presentations, the project team and student poster displays and the opportunities for networking.

The keynote presentations from senior Defence and industry representatives were a particular highlight, but I also need to make special mention of our Conference Dinner at the National Gallery in Canberra, and the Awards for Excellence presented at the dinner.

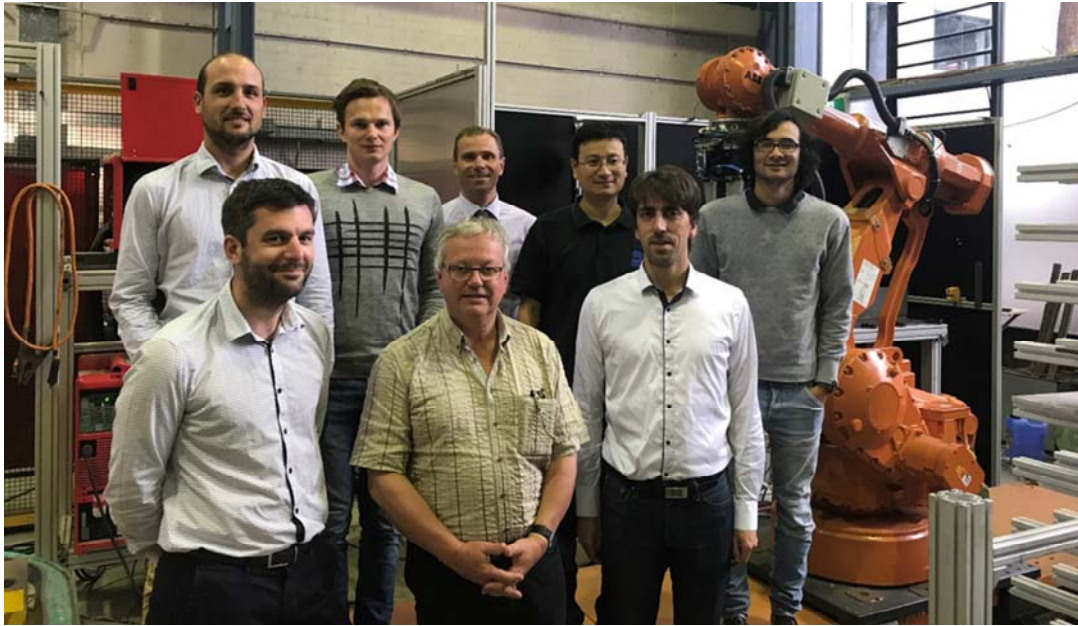
Dr Felicia Pradera received the Research Collaboration award, which in many respects is the 'MVP' honour. Felicia is a valued member of the DMTC team and really has exemplified our commitment to achieving the very best outcomes for the Australian Defence Force, while also facilitating industry and supply chain development in this country.

I trust that all of you who attended the Conference enjoyed it as much as I did. More details of the awards are in this newsletter and on our revamped website, and a number of the Conference presentations are available in read-only format via the IMS.

Speaking of our website and all things electronic, if you have your own personal accounts I'd encourage you to take the opportunity to stay in touch with our latest news by following DMTC on [LinkedIn](#) and [Twitter](#).

Dr Mark Hodge
DMTC CEO

DCNS and DMTC collaborate on naval ship projects



Pictured: DCNS researchers (front: L to R) Guillaume Ruckert, Francois Cortial, Florent Bridier engaging with (back: L to R) Bruno Leviel (UoW), Ondrej Muransky (ANSTO), Stephen van Duin (DMTC), Zengxi Pan (UoW) and Nathan Larkin (UoW) at the University of Wollongong's robotics and welding research laboratory.

DMTC welcomes a new collaboration between DCNS Australia and our existing research partners University of Wollongong, ANSTO and DST Group.

The agreement will see DMTC and DCNS collaborate on developing technical expertise and building industrial capacity within Australian maritime sector supply chains, with a focus in the first instance on naval shipbuilding and repair.

Minister for Defence Industry, Christopher Pyne said the agreement with DMTC highlighted DCNS' commitment to ensuring Australian industry participation in defence construction and sustainment projects.

The scoping project – that began in January this year and is expected to be completed by July 2018 – is focused on reducing levels of distortion experienced in naval surface ship construction.

Researchers aim to combine a welding experimental program with weld modelling to achieve a significant improvement in managing overall global distortion of a ship's structure.

CEO of DMTC, Dr Mark Hodge, said DCNS would be working with the same DMTC team that previously worked together to enhance welding processes for panel construction on Australia's fleet of Air Warfare Destroyers – an award-winning project that was highlighted in the 2016 Defence Industry Policy Statement.

"I am confident the project will achieve outcomes with direct relevance to Defence's capability needs. "We have had strong support from Defence's SEA 5000 Program and are working closely with DST Group scientists and research and industry partners," said Dr Hodge.

“Through these types of projects we are taking technologies at the core of DMTC’s established expertise – including welding, corrosion management, life-of-type modelling and both production and sustainment technologies – and looking to extend industry capacity in support of Australia’s continuous surface shipbuilding program.”

More: <http://dmtc.com.au/news/media-release-dcns-signs-on-with-dmtc/>

Team achieves major milestone in CBR protection



Pictured: Australian defence member in CBR protective suit.

DMTC’s Advanced Nanostructured Fabrics project team has achieved a major milestone in the pursuit of air-permeable CBR suits.

The team has developed and tested a composite fabric that provides 97% filtration of aerosol particles with only a 20% reduction in thermal comfort compared to a combat uniform.

The composite fabric has a multi-layer laminate textile structure, which stops CBR threats, including aerosol threats, from travelling into the fabric while allowing heat to travel out of the fabric.

The lack of dermal protection from aerosolised hazardous CBR substances is a known capability

gap in air permeable Individual Protective Equipment (IPE).

Analysis of the modern threat environment has highlighted the need to address this capability gap in order to provide adequate protection against hazards.

The capability to provide aerosol protection in an air-permeable CBR suit is a target exemplified by the recent adoption of partial aerosol protection in German and Canadian-issued or developmental CBR suits. These suits only provide a base level of protection and can be cumbersome.

The fabric developed by DMTC is very promising and the project team can now focus on improving the thermal comfort of the fabric.

This DMTC project is funded through the Defence Innovation Realisation Fund, a program now managed under the guidance of the Defence Innovation Hub.

Project Leader Ms Yen Truong said the 'holy grail' would be a fabric that provides in excess of 97% aerosol filtration and be as conformable a conventional combat uniform.

Ms Truong was awarded at DMTC's recent Annual Conference for her leadership of this project.

DMTC engages new community with sensor program



Pictured: New DMTC Program Leader Dr Kimberley Clayfield.

DMTC has shortlisted projects for detailed consideration under its new High Altitude Sensor Systems Program, and welcomed a new Program Leader to the Centre.

Seconded from CSIRO, Dr Kimberley Clayfield, will oversee the commencement of research within the new program.

Dr Clayfield is an executive manager in CSIRO's Space Sciences and Technology team. She has a

background in large-scale science and technology initiatives like the Square Kilometre Array, and in researching and drafting space policy.

With experience in and links to the remote sensing community, Dr Clayfield recently facilitated DMTC attendance at the University of New South Wales (UNSW) CUBESAT2017 workshop.

CUBESAT2017: Launching Cubesats for and from Australia was an event organised, hosted and supported at UNSW by the Australian Centre for Space Engineering Research (ACSER) and Optus Satellite.

It happened to coincide with the recent launch of three Australian cube satellites, in the QB50 launch, constructed by UNSW, University of Sydney, the Australian National University, the University of Adelaide and the University of South Australia.

The two-day workshop saw presentations from 43 speakers, including 13 start-ups and several established companies in Australia's growing space services, research, manufacturing, engineering and science sector.

DMTC Program Development Manager James Sandlin observed that, "for such a talented, tight-knit but rapidly growing community, the people involved are easy to engage and open to new associates. This has to be one of the factors in the recent rapid growth of the sector".

"We look forward to working with the community to grow Australia's space capabilities in support of security and Defence."

DMTC explores homegrown capabilities for JSF program

DMTC is evaluating expressions of interest received last month from industry and research organisations to develop and enhance Australian industry capabilities in support of the Joint Strike Fighter (JSF) Program.

DMTC is working with the Australian Department of Defence's JSF Division and DST Group to identify improvement and innovation opportunities for development, through DMTC.

This collaborative approach will assist Australian companies to contribute to a strong industry base that supports the JSF capability and provides long-term national economic benefits.

Potential opportunities for development that have been identified to date include additive manufacturing, titanium machining, structural health monitoring, corrosion monitoring and control and composite repair.

Minister for Defence Industry, the Hon Christopher Pyne MP said with more than three thousand JSF F-35 aircraft planned for production globally over the next 25 years, there were many opportunities for Australian industry to compete for work.

"There are opportunities for companies to participate in both the production of new aircraft, and the regional allocations of sustainment work for in-service fleets," Minister Pyne said.

"Indeed, there are already many success stories in relation to Australian industry making its mark in the production phase with more than 30 companies successfully partaking in \$800 million of work so far.

"The Defence Innovation Hub, together with the Next Generation Technologies Fund and the Centre for Defence Industry Capability, deliver on the Government's \$1.6 billion commitment to grow Australia's industry and innovation sector," Minister Pyne said.

More: <http://dmtc.com.au/news/call-for-submissions-jsf-industry-development/>

BAE: 'Clarity of purpose and collaboration are key'



Pictured: Mr Brad Yelland, GM Strategy for BAE Systems Australia presents his keynote speech at DMTC's Annual Conference.

A clear route to market for defence technology and product development is crucial for attracting industry investment and support, and one reason DMTC's model is so successful, according to Mr Brad Yelland, GM Strategy for BAE Systems Australia.

Mr Yelland delivered the industry keynote presentation at DMTC's Annual Conference in Canberra.

"Having a clear route to market, having a customer who sees benefit in looking first to Australian industry for their solutions, and having an environment where industry is engaged and kept informed of customer needs early enough to be able to plan, is what is needed to ensure a viable and strong Australian Defence Industry," he said.

DMTC's collaborative approach and its provision of a clear route to market had resulted in "significant success", said Mr Yelland.

He said DMTC's support in setting up the titanium machining capability for the JSF aircraft had realised new opportunities and significant exports for Australian industry.

Additionally, the Corrosion Prognostic Health Management technology developed under DMTC had successfully been integrated into the JSF Global Fleet.

"In both of these cases, the end customer was identified and engaged prior to initiating the activities, and so there was a clear route to market. All we had to do was to achieve the objectives of the technology development activity," Mr Yelland said.

More: <http://www.baesystems.com/en-aus/article/dmtc-annual-conference>

High honour for DMTC Program Leader



Pictured: Corporal Dan Keighran VC presents Medical Countermeasures Program Leader, Dr Felicia Pradera with her award.

DMTC Medical Countermeasures Program Leader, Dr Felicia Pradera, has been presented with the prestigious DMTC Research Collaboration Award for her leadership of the program.

The DMTC Awards for Excellence were presented at this year's DMTC Annual Conference Dinner at the National Gallery in Canberra.

The Awards for Excellence recognise significant contributions made by individuals and teams that have resulted in successful outcomes for DMTC and its partners.

Dr Pradera received her award from Corporal Dan Keighran VC, who was the guest speaker at the gala dinner. After telling the remarkable story of his life and the circumstances of the battle for which he was awarded the Victoria Cross, Corporal Keighran had a simple but powerful message for the DMTC community.

"What you do makes a difference to the safety and security of our soldiers and the ADF," he said.

DMTC congratulates Dr Pradera and all the other award winners.

More: <http://dmtc.com.au/news/high-honour-dmtc-program-leader/>

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DMTC was established and is supported by the Australian Government's
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Ph. (03) 9214 4447