

Industry 4.0 strikes forth from jet fighter contract

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BAE Systems Australia and the Advanced Manufacturing Growth Centre will use Industry 4.0 techniques to contribute to the world's biggest defence program, the Joint Strike Fighter.



Flinders Professor John Spoehr, Pro-Vice Chancellor - Research Impact and Director of the Australian Industrial Transformation Institute, left rear; with Sarah Pope, Head of Aerostructures programs, RUAG; Fred Hull, Aerospace and Defence Manager, Axiom Precision Manufacturing; Craig Maynard, General Manager, Axiom Precision Manufacturing; Sharon Wilson, BAE's Australian Capability Director, Hunter Class Frigate Program; and AMGC Managing Director Dr Jens Goennemann.

The \$750,000 South Australia project will develop a new approach to supply chain digitisation that avoids having to use expensive, proprietary software which is

currently one of the major barriers to Australian small to medium-sized manufacturers participating in global supply chains.

Digitisation allows for project partners to see plans in real time, identify and resolve issues faster, improve risk management and optimise production.

Australia received the first two F-35 aircraft in December last year in what is the largest air force acquisition in Australia's history.

BAE Systems supplies 300 titanium components per month from its advanced manufacturing facility at Edinburgh Parks in South Australia for the F-35 vertical tail and will work with its existing Joint Strike Fighter supply chain partners Axiom Precision Manufacturing and RUAG on this project, together with Advanced Focus and Flinders University.

The Defence aerospace industry was selected because of the stringent security and traceability requirements both in Australia and allied nations.

BAE Systems Aerospace and Integrated Systems Director Steve Drury says: "This is so much more than replacing paper processes with digital technology. If we get this right and develop a freely available, open standard to digitise supply chains, the long-term benefits of this project to the broader Australian industry could be significant."

This project is part of a series of BAE Systems Industry 4.0 activities that the company is running on its own or in collaboration with industry and universities where success would also see the adoption of digitisation on other major defence projects including the Jindalee Operational Radar Network (JORN) and the Hunter Class Frigate Program.



The Australian F-35A Project is introducing a fifth generation air combat capability beyond 2030. Image: Department of Defence.

The Advanced Manufacturing Growth Centre (AMGC), which is part of a Commonwealth-backed initiative, expects its co-funding of this project will allow other SMEs interested in participating in future defence projects to have access to the trial results and business tools developed as a result of the work.

AMGC Managing Director Dr Jens Goennemann, says: “The development of best practice between a leading defence industry prime and Australian SMEs is another example of how everyone can win from collaboration.

“This will be essential if Australia’s manufacturing sector and economy is to successfully transform as the global market accelerates toward the adoption of Industry 4.0.”

Advanced Focus uses strategic operations expertise combined with lean and advanced manufacturing industrial engineering tools to help redesign processes to leverage the benefits of new Industry 4.0 technologies.

Flinders University’s Australian Industrial Transformation Institute (AITI) at Tonsley has extensive capabilities in Industry 4.0 and the application of international best practice to digital transformation, technology adoption and human dimensions of major change.

AITI director Professor John Spoehr, Pro-Vice Chancellor – Research Impact at Flinders, says the Industry 4.0 ‘technical revolution’ is quickly gathering global momentum.

“Projects like this (at BAE / AMGC) are driving significant improvements in performance and competitiveness globally, enabling the growth of advanced manufacturing and high-skilled jobs,” he says. “Lessons learnt from this project can be widely applied for the benefit of Australian manufacturing industry. ”

The AITI team will provide expertise on digital transformation and the adoption of Industry 4.0 in the supply chain, identifying lessons learnt to promote broader industry adoption of the project outcomes.



Representatives from the Industry 4.0 digitisation project, including Mark Fusco from Advanced Focus and Professor Spoehr from Flinders (left rear), at last month's signing of the agreement.

Across Australia, the United Kingdom and the United States, BAE Systems is responsible for delivering up to 15% of every F-35, from crucial systems such as fuel and crew escape to precision manufactured parts and electronic warfare suites.

The vision for the Advanced Manufacturing Growth Centre is to develop an internationally competitive, dynamic and thriving Australian advanced manufacturing sector that is critical to the long-term health of the economy and the nation.