

LINE ZERO

FACTORY OF THE FUTURE





ADVANCING INDUSTRY, INNOVATION, EDUCATION AND THE ECONOMY

Line Zero Factory of the Future at Flinders University brings together education, industry and government to facilitate the implementation of Industry 4.0, bridging the valley between research, development and innovation to boost the national economy.

Line Zero Factory of the Future will deliver a world-class, reconfigurable advanced manufacturing test bed, training and industry growth facility – the first of its kind in Australia. It will connect industry with enabling technologies, research capabilities and training to modernise and transform manufacturing, with advanced robotics and customised technology allowing partners to integrate i4.0 tools into production.





CONNECTING INDUSTRY WITH ENABLING TECHNOLOGIES, RESEARCH CAPABILITIES AND TRAINING TO MODERNISE AND TRANSFORM MANUFACTURING, INTEGRATING i4.0



Photography by: Simon Cecere

Based at the Tonsley Innovation District in southern Adelaide, Flinders University's Line Zero Factory of the Future will connect businesses to sectors which are of growing importance to the national economy, including the \$90 billion defence ship building industry.

It has never been more evident that our nation needs to build greater sovereign manufacturing capabilities to maximise Australian industry participation in maritime shipbuilding and deal with crises as they emerge, to further enhance domestic self-sufficiency and global competitiveness, and to contribute to economic recovery and jobs growth. The world's most advanced "digital shipyards" will help accelerate the expansion of advanced manufacturing.

Line Zero Factory of the Future forms part of a collaborative network of advanced manufacturing facilities internationally, linking to the Advanced Manufacturing Research Centre in Sheffield, UK, and the University of Strathclyde's Advanced Forming Research Centre.

It will work collaboratively with Flinders University's Centre for Maritime Engineering, Control and Imaging, Institute for Nanoscale Science and Technology, Medical Device Research Institute, New Venture Institute and Australian Industrial Transformation Institute.





PLAYING AN ESSENTIAL ROLE IN ENTERPRISE CAPABILITY BUILDING

Line Zero Factory of the Future aims to increase the number of companies involved in testing, automation and robotics technology through access to cutting edge capabilities and equipment. The Federal Government's significant investment in naval

shipbuilding is providing a unique opportunity to accelerate this process, supporting expansion and modernisation of the supply chain.

Line Zero Factory of the Future will greatly lower the barriers to entry that many companies face when

considering adopting advanced manufacturing technologies, playing a brokerage role to connect companies to key enabling technologies and research capabilities – at a time when support for businesses to grow and prosper is critical.



“Australia has an opportunity to be a leader in advanced manufacturing in the Asia Pacific region and the Line Zero Factory of the Future is going to play a critical role in enabling that, driven by Flinders University's impressive research expertise in collaboration with our industry partners.”

Colin Stirling, PRESIDENT AND VICE-CHANCELLOR, FLINDERS UNIVERSITY



“Line Zero Factory of the Future will be placed right at the heart of developing sovereign industrial capability... we're bridging the gap between industry, smaller businesses and academia, and we're looking to get that accelerator effect.”

Craig Lockhart, MANAGING DIRECTOR, ASC SHIPBUILDING



"Line Zero Factory of the Future will deliver a world-class, reconfigurable advanced manufacturing test bed, training and industry growth facility – the first of its kind in Australia."

**John Spoehr, DIRECTOR, AUSTRALIAN INDUSTRIAL TRANSFORMATION INSTITUTE
FLINDERS UNIVERSITY**



"Having that ability to scale up from the laboratory-based work out into Line Zero Factory of the Future and then out to the shipyard is actually a crucial part of testing our technology."

Sharon Wilson, CNS STRATEGY DIRECTOR, BAE SYSTEMS AUSTRALIA

BRINGING BUSINESSES AND INDUSTRIES TOGETHER

Line Zero Factory of the Future at Flinders University will work with international and domestic businesses to deepen understanding of the growing importance of digitisation and advanced manufacturing technologies, and to identify opportunities to implement industry-leading applications.

Line Zero Factory of the Future will work with business to test and trial robotics and automation, including cyber-physical systems. It will also assist with the development of digital roadmaps to help sustain the uptake and diffusion of advanced technologies.

Line Zero Factory of the Future will develop training and cultural programs to enable industries to successfully deliver significant change within organisations. It will also support the application of leaner practices in manufacturing to reduce waste, and identify opportunities for digitisation, robotics and automation.



JOBS GROWTH ACROSS INDUSTRY

Line Zero Factory of the Future has a mandate to help create jobs in research, education and industry, promoting the growth of advanced manufacturing in areas of strategic importance to the nation.

Line Zero Factory of the Future at Flinders University will support the delivery of the South Australian Government's Industry 4.0 Apprenticeship Program, in collaboration with TAFE SA, AiGroup, SAGE and Flinders University, playing a key role in helping to meet growing demand for advanced manufacturing apprentices in South Australia.



EDUCATION IS CRITICAL TO GROWING INDUSTRY AND SOVEREIGN CAPABILITIES

Line Zero Factory of the Future at Flinders University will employ 10 new researchers and technical personnel dedicated to its core operations, and harness the expertise of more than 200 others in disciplines across engineering, science and business. The facility will be capable of hosting up to 100 industry personnel working collaboratively on multiple projects at any given time.

Flinders University's Line Zero Factory of the Future founding

partners include BAE Systems/ASC Shipbuilding and the Innovative Manufacturing Cooperative Research Centre. The new facility will build on the establishment of a joint Flinders University/BAE Systems/ASC Shipbuilding Cyber Physical Systems lab at Flinders' Tonsley facilities.

Based in one of Australia's leading innovation districts, Line Zero Factory of the Future will bring together leading researchers and companies to trial applications of advanced

technologies and processes in support of the Industry 4.0 agenda in Australia. It will also be a focal point for advanced technologies education and training.

Line Zero Factory of the Future at Flinders University aims to apply the capability of leading researchers and provide companies with access to industrial-scale test labs to offset the risks associated with investments in new technologies and capabilities.





HARNESSING INDUSTRY 4.0

Over the next three years Flinders University's Line Zero Factory of the Future will provide opportunities for companies involved in shipbuilding and other industries of strategic importance to the national economy to test the application of advanced technologies and support the growth of high-value manufacturing.

Industry 4.0 technologies are poised to transform sectors, including shipbuilding and defence. These technologies include advanced robotics and artificial intelligence, sophisticated sensors, cloud computing, the Internet of Things, data capture and analytics, digital fabrication, software-as-a-service and advanced navigation tools. The rapid advancements in technology and the way industries are embedding these applications into the global supply chain is becoming integral to manufacturing

and advancing economies.

By supporting the testing and implementation of advanced technologies, Line Zero Factory of the Future will be able to significantly increase the innovative capabilities and performance of companies, leading to the establishment of deeper productive collaborations with researchers and world-class facilities.

Access to Industry 4.0 technologies, processes and expertise is essential to enable businesses working across many South Australian industry sectors to compete on a global stage. Line Zero Factory of the Future aims to substantially increase the number of companies involved in testing automation and robotics technologies to help our state and our nation prosper.

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