



ADVANCED MANUFACTURING GROWTH CENTRE

PROJECTS REPORT
AUGUST 2018



~1104

jobs projected



\$18.3 million

committed (AMGC,
industry and in kind)



\$244–253

million in estimated
revenue generated

NORTHERN TERRITORY

Projects under development

EXPORT OPPORTUNITIES

WESTERN AUSTRALIA

Projects under development

**\$1.6
million
total**

SOUTH AUSTRALIA

Dassault Systèmes Virtual Shipyard

Innodev

Industry 4.0 digitisation
of SME infrastructure

Dematec Automation

KEY

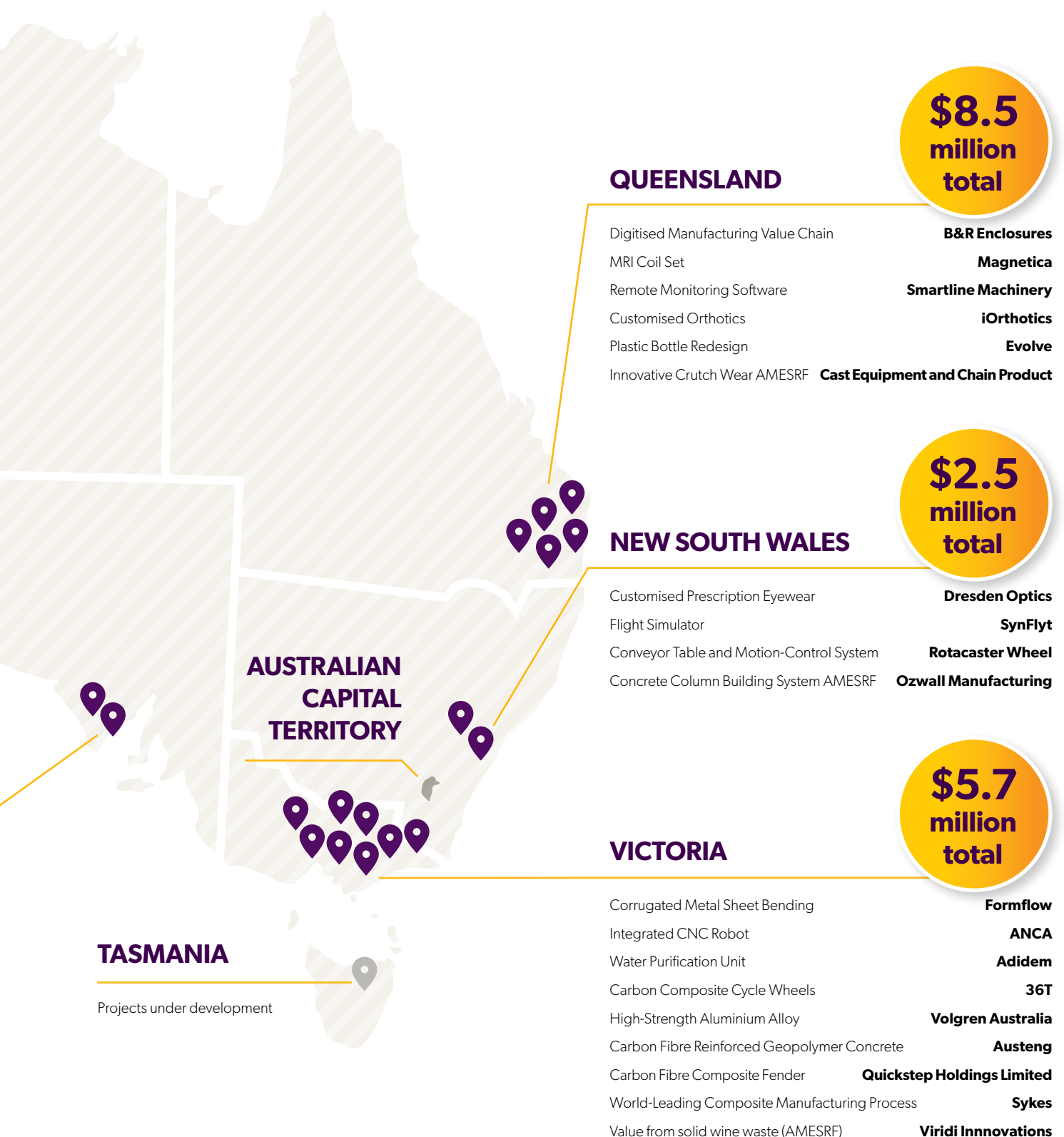


Active or complete projects



Projects under development

EXPECTED OUTCOME OF OUR PROJECTS





FOREWORD FROM THE MANAGING DIRECTOR

The Advanced Manufacturing Growth Centre (AMGC) was established by the Australian Government in 2015 to develop a dynamic and export-focused manufacturing sector. AMGC supports outstanding projects to commercialise innovation. In this way it demonstrates how to enhance Australia's competitiveness and set the direction for industry across the country.

This report provides a first update on our projects. Crucially, each of them features the application of advanced characteristics, such as, advanced knowledge, advanced processes and advanced business models. Leveraging one or more of these characteristics is vital to achieving success in the increasingly global and sophisticated manufacturing environment.

AMGC works jointly with industry and research partners to support these projects. In doing so, it strives to encourage deeper collaboration between these two entities for greater commercial outcomes, increase the connection into global supply chains, promote the development of advanced skills, and foster best practice and knowledge sharing. In addition, these projects can help identify the regulatory environment that hinders business growth.

As illustrated throughout this report, there are many pathways to becoming advanced. AMGC firmly believes, and has shown in its research, that it is not what you make, but how you make it. The manufacturers featured inside this report are introducing many forms of advanced characteristics, and the greatest outcome is the example these firms are setting for the Australian economy.

Thank you to everyone who is involved in driving the projects detailed in this report. Each participant demonstrates how to make the Australian manufacturing sector be more advanced and competitive.

AMGC is eager to share these stories to inspire other Australian manufacturers how they too can compete on the world stage. We look forward to keeping all stakeholders informed – either on newly launched projects or how those featured here are drawing closer to their projected outcomes.

Watch this space!



A handwritten signature in black ink that reads "Jens Goennemann".

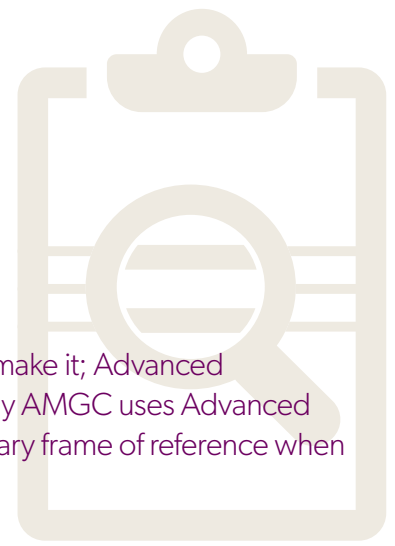
Dr Jens Goennemann

Managing Director

Advanced Manufacturing Growth Centre Ltd



ANCA 2018



PROJECT EVALUATION CRITERIA

Success in Australian manufacturing is less about what you make but how you make it; Advanced Characteristics and skills development are strongly linked to success. This is why AMGC uses Advanced Knowledge, Advanced Processes and Advanced Business Models as the primary frame of reference when evaluating projects.

AMGC projects are industry led and seek to demonstrate the following advanced characteristics:



ADVANCED KNOWLEDGE

Projects should enable Australian manufactures to become **Innovation Leaders** through increased demonstration of Advanced Knowledge characteristics, in areas such as:

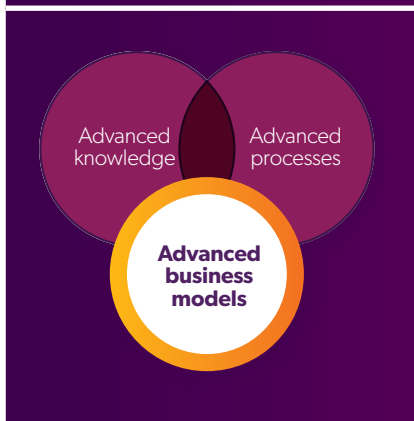
- ▶ Increasing R&D expenditure
- ▶ Increase collaborations with other firms/Research institutions
- ▶ Increase the use of STEM skills.



ADVANCED PROCESSES

Projects should enable Australian manufacturers to become **Process Winners** through increased demonstration of Advanced Process characteristics, in areas such as:

- ▶ Increase capital intensity expenditure
- ▶ Increase new operational processes
- ▶ Increase ICT and technology asset intensity.



ADVANCED BUSINESS MODELS

Projects should enable Australian manufacturers to lift the value of their products by acting as **Niche Players or Service Champions** through increased demonstration of Advanced Business Models characteristics, in areas such as:

- ▶ Increase new goods offered
- ▶ Increase trade intensity (exports)
- ▶ Increase new service offerings.

The Advanced Manufacturing Growth Centre is an industry-led, not-for-profit organisation that supports the development of a world-leading advanced manufacturing sector in Australia. It is run by an independent board and management team of industry experts.

AMGC's role is to unlock new commercial opportunities and drive innovation in Australian manufacturing. It does this by fostering collaboration between industry enterprises and the scientific and research community.

The key to AMGC's success is the strength of its membership. The opportunity to join AMGC's membership program is open to manufacturers of all sizes, and to universities and other research institutions.

Joining brings immediate entry into a vibrant ecosystem of like-minded participants who care about developing a more innovative, globally competitive manufacturing sector.

AMGC uses projects to demonstrate best practice strategies to advance manufacturing in Australia and pave the way for other companies and research institutions to model these practices with similar initiatives.



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CARBON FIBRE COMPOSITE FENDER



A low-cost carbon fibre composite fender for the European automotive market

This project seeks to demonstrate the Quickstep production system for making carbon fibre fenders for a European automotive original equipment manufacturer (OEM). Quickstep's proposed method offers simplified tooling, quicker production from material to finished part, and less capital investment compared to traditional alternatives.

The AMGC project has seen Quickstep qualify to supply composite fenders for a German OEM, with a request for quote scheduled for mid 2018. The concept has attracted interest from other luxury European and British car makers.

Quickstep's position as a leader in technology depends on its collaboration with universities and other industry partners, as they work to develop solutions for global value chains. Quickstep has collaborated with Deakin University on this automotive project since November 2015. During this time 11 of the university's PhD candidates have worked on the Quickstep manufacturing process, now known as the Quickstep Qure Process.

The impact of the project is significant. The potential export value has been estimated at \$25 million and it could generate 30 new high-skilled jobs as production scales.

MILESTONES

1/2/17	●	AMGC approval
31/3/17	●	Design tooling to facilitate flexible process solutions
31/7/17	●	Development of automated preforming technology
30/9/17	●	Development of the isothermal Quickstep Qure Process
31/1/18	●	Selection of material systems and development of smart designs to allow for rapid curing cycles

CONTRIBUTIONS: Government – \$250,000 | Industry – \$317,003 | In Kind – \$789,583



IMPACT

- › Increased spending on R&D to develop an advanced process for layup, curing and tooling
- › Collaboration with Deakin University and Special Patterns to develop and validate the advanced process
- › Development of new equipment
- › Increased trade intensity with global automobile manufacturers
- › Access to previously unattainable and geographically diverse export markets



GROWTH

- › \$25 million in export potential
- › Entry to previously unattainable markets



JOBS

- › 30 new high-skilled jobs

PROJECT PARTICIPANTS



PLASTIC BOTTLE REDESIGN



Intensive and fast tracked design project with the objective of reshoring the manufacturing of their customers plastic injection moulded bottle range to Australia

Marco Engineering, as part of The Evolve Group, is partnering with a customer and the University of Queensland in a fast-tracked project to redesign and relaunch a range of plastic bottle products.

This AMGC project seeks to counter the trend of growing imports by demonstrating how Australia’s high-skilled labour can provide design modifications, resulting in:

- ▶ A higher-quality product for the customer
- ▶ A more efficient manufacturing process requiring less rework
- ▶ An enhanced safety reputation for the customer, based on the ‘Made in Australia’ provenance.

The final product will be the world’s first 100% leakproof plastic bottle under most conditions, including position and temperature. In addition to reflecting a modern design language, Marco Engineering will use root cause analysis to improve features and benefits while enhancing usability, reliability, longevity and value for money.

Marco Engineering is working with its customer from the initial concept stages, so it has the opportunity to ensure the product and manufacturing process benefit the company, the customer, the distribution partners and the consumer. By designing and then harnessing these efficiencies, the products Marco Engineering works on have an inherent advantage over those manufactured offshore.

MILESTONES



CONTRIBUTIONS: Government – \$221,000 | Industry – \$221,000



Advanced knowledge

Advanced processes

Advanced business models



IMPACT

- › Advanced processes achieved through greater access to STEM skills, competing on value not on cost
- › Higher spending on R&D to keep production on shore
- › Increased marketing spend to relaunch bottles to the market
- › Increased collaboration with the University of Queensland on the product redesign
- › Higher product value based on many production factors



GROWTH

- › \$300,000 in estimated sales in 2018, as customers transition from manufacturing in China
- › \$20 million per year in sales, in 2019 and thereafter



JOBS

When the project is operating at full capacity:

- › Two engineers
- › Six robotic operators
- › Six automated packaging operators
- › 30 semi-skilled logistics and plant operators

PROJECT PARTICIPANTS



HIGH-STRENGTH ALUMINIUM ALLOY

VOLGREN

A Marcopolo Company

Validation and demonstration of a high-strength aluminum alloy, for future integration into the manufacturing value chain of global bus manufacturers

Volgren and other project participants identified an opportunity to commercialise their research on super high strength aluminium alloys to reduce the weight of bus bodies and chassis.

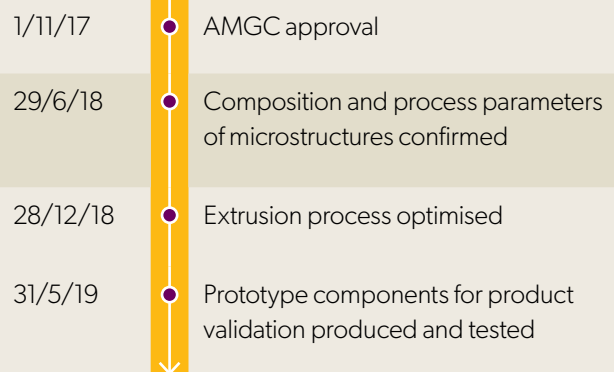
Research undertaken by Deakin University and Clean TeQ has developed high-strength aluminium alloys containing small amounts of scandium, a rare earth metal that has the ability to substantially increase the strength of aluminium and therefore reduce overall vehicle weight. The resulting product is key to the next generation of lightweight aluminium electric vehicles.

This project will allow Volgren to use the patented technology in manufacturing buses. This gives Volgren a competitive advantage both domestically and internationally, and an entry into electric vehicle manufacturing, where weight is a major factor, and many sectors where strength to weight ratios of alloys are critical.

Compared to traditional aluminium alloys, the new product delivers:

- › 20% increase in strength
- › 30% reduction in weight
- › 25% reduction in component cost
- › Enhanced corrosion resistance
- › Reduced fuel and energy costs as a result of reduced vehicle weight
- › Reduced carbon emissions as a result of reduced vehicle weight.

MILESTONES



CONTRIBUTIONS: Government – \$150,000 | Industry – \$150,000 | In Kind – \$375,000



IMPACT

- › Advanced knowledge as a result of high-strength alloy R&D
- › Growth in the patent portfolio
- › Research collaboration with academic and industry partners to develop complex new products
- › An increase in the number of staff members with STEM skills
- › Better energy efficiency due to the reduced weight of bus bodies and chassis
- › Increased trade intensity and more geographically diverse export markets



GROWTH

- › Potential to generate significant new revenue and skilled employment for Australian manufacturing ahead of global licensing and ongoing R&D opportunities



JOBS

- › 50 to 60 new employees expected at Volgren as a result of successfully commercialising the new alloy
- › 140 jobs expected at Clean TeQ as the mine goes into operational production mode

PROJECT PARTICIPANTS

VOLGREN
A Marcopolo Company

**CLEAN
TEQ**
Powering innovation

HESS



CUSTOMISED ORTHOTICS



A mass-manufacturing process for customised orthotics

iOrthotics has invested in new printing technology, overcoming the limitations of its existing system and bringing larger markets within reach.

This project will allow iOrthotics to expand into the US market and create new areas for Australian manufactured goods, as a prelude to other overseas opportunities.

Using 3D printing within a fully digitised supply chain allows iOrthotics to reach new areas that previously used subtractive production techniques.

To achieve these expansion goals, iOrthotics and its project participants will scale up its new manufacturing processes. This will involve:

- › Digitising the ordering process, including a portal that allows customers to submit their requests for fully digitised orthotics
- › Developing a laboratory QR or barcode system to track the status of all orders
- › Integrating digitised patient foot scans into the iOrthotics core system
- › Refining the design to further reduce use of materials and consumables.

3D printing orthotics with the HP Jet Fusion printer is a first step in building new knowledge about how to 3D print other related plastic products. When this project is completed, iOrthotics will have an export-ready product for sale in global markets.

MILESTONES

A vertical timeline diagram with a yellow bar and a white arrow pointing downwards. Milestones are marked with purple dots and connected to the bar by thin lines. The date 15/6/18 is highlighted with a light beige background.

1/11/17	•	AMGC approval
25/5/18	•	Digitisation of order-entry process completed
15/6/18	•	Laboratory QR/barcoding system completed to track all orders and order status
30/6/18	•	Digitised patient foot scan integrated into iOrthotics core system
30/7/18	•	Production optimisation to reduce material/consumables completed
30/8/18	•	Final product for export to the US market

CONTRIBUTIONS: Government – \$195,250 | Industry – \$195,250 | In Kind – \$60,000



IMPACT

- › Advanced processes as a result of increased ICT intensity, including digitisation of the ordering process and integration of digital foot scanning
- › Increased capital intensity by acquiring new manufacturing equipment that allows for large-scale production of customised orthotics
- › Increased collaboration between industry partners for integrating advanced manufacturing technologies
- › Increased trade intensity and access to geographically diverse export markets
- › Elevation of services to represent a larger share of total revenue



GROWTH

- › Exporting ~20,000 devices to the North American markets of Canada and USA
- › ~40,000 devices for domestic supply with exponential growth



JOBS

- › Seven high-skilled manufacturing personnel
- › Two software engineers
- › Four logistics personnel

PROJECT PARTICIPANTS

iOrthotics

evok3d
3d printing solutions



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

WATER PURIFICATION UNIT



A cloud-connected potable water purification unit for remote communities and disaster relief

Maintaining and servicing water purification units in remote communities is challenging and expensive. The Water Source solution is tackling this issue through collaborative research with Monash University, and product development with Bosch Engineering.

The AMGC project seeks to commercialise a potable water purification unit that is compatible with the Internet of Things (IoT) and does not require consumables, such as chlorine or replacement filters throughout its operating lifespan of more than 10 years.

The unit will be remotely monitored and controlled through a cloud-based, IoT-connected platform with inbuilt artificial intelligence (AI) software. This combination of features establishes a valuable and unique position for Water Source in the global water purification market.

Water Source has developed a diverse business model that aims to deliver multiple benefits to its users. For example, the water purification unit can provide remote Indigenous communities with potable water, while a bottling plan incorporated in the unit establishes a source of income for the community.

On conclusion of this project, Water Source will have a market-ready product. This will provide a reliable potable water supply for domestic and small-scale commercial situations in remote communities, developing nations, defence settings and other challenging environments.

The impact of this project is significant. Potential mid-term export value has been estimate at \$20 million in new revenue and it could lead to the creation of 15 high-skilled jobs.

MILESTONES



CONTRIBUTIONS: Government – \$250,000 | Industry – \$516,150



IMPACT

- › Increased ICT intensity by remotely monitoring and controlling the unit via a cloud-based, IoT-connected platform
- › Advanced knowledge development through increased research collaboration with Monash University and product development with Bosch Engineering
- › A complex new product that provides potable water for domestic and small-scale commercial situations, and does not require consumables
- › Increased trade intensity and access to geographically diverse export markets, including remote communities, developing nations and other challenging environments



GROWTH

- › \$20 million (medium term)
- › \$100 million (long term)



JOBS

- › 15 high-skilled jobs (medium term)
- › 150 high-skilled jobs (long term)

PROJECT PARTICIPANTS



BOSCH



MONASH
University

DIGITISED MANUFACTURING VALUE CHAIN



Short interval decision making via an Industry 4.0 application

This project seeks to achieve a profound shift away from large-scale, production-centric manufacturing of commodity products, towards a more customised, smart and competitive manufacturing model. This new approach is backed by highly skilled individuals, and is more responsive to the rapidly changing needs and priorities of global value chain partners.

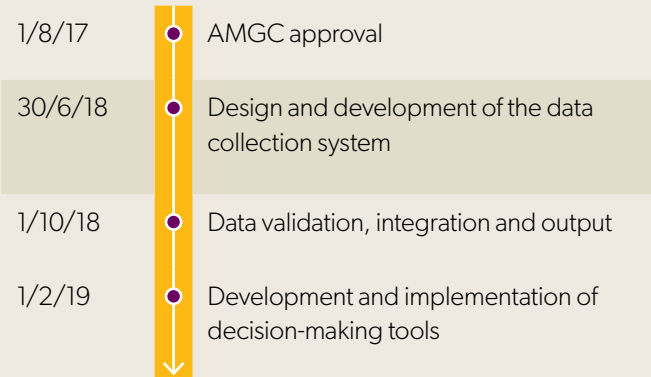
This project applies Industry 4.0 principles and technologies, embracing agility and delivering superior customer experience as a demonstration of the AMGC Sector Competitiveness Plan. In doing so, it aims to influence Australian manufacturing much faster than had previously been possible.

The technology aspect of this project involves collecting real-time manufacturing data and transforming it into meaningful analysis and visualisations. Project partners collaborate on designing and implementing digital technologies including smart sensors, location tracking devices, analytics, digital workflows and scheduling, and data visualisation tools.

B&R Enclosures is working with its project partners to develop a competitive advantage by enhancing decision-making capabilities across the manufacturing value chain. This will allow B&R Enclosures and every link in its value chain to more effectively respond to changing customer needs.

The project will result in an enhanced customer experience and accelerate participants’ export growth into new and existing markets.

MILESTONES



CONTRIBUTIONS: Government – \$245,000 | Industry – \$245,000 | In Kind – \$580,000



Advanced knowledge

Advanced processes

Advanced business models



IMPACT

- › Increased information and communications technology (ICT) intensity by applying Industry 4.0 principles and technologies
- › Advanced knowledge acquired by collaborating with other manufacturers to develop a competitive advantage across the manufacturing value chain
- › An increase in the number of staff members with science, technology, engineering and mathematics (STEM) skills
- › Smarter inventory management



GROWTH

- › \$15 million by 2020



JOBS

- › More than 25 jobs

PROJECT PARTICIPANTS



Complete Wiring



REMOTE MONITORING SOFTWARE



Accelerated development of CleanPath software to provide remote monitoring of Smartline endoscope drying cabinets

Smartline is developing its CleanPath data system which provides digital cleaning validation to help hospitals comply with the new hygiene standards.

The air systems in Smartline’s cabinets use patented technology to ensure that endoscopes used in colonoscopy and gastroscopy hospital operations are dried and stored correctly. These well-designed cabinets are already a proven brand in several markets even with only basic data functions attached.

This project exemplifies how ICT can enable high-quality servitisation of data transmitted by software, allowing Smartline technicians in Australia to provide analysis to remote or overseas clients. The Smartline value proposition provides an aspirational benchmark for other Australian manufacturing entities. When the project is complete, Smartline will share the concept of this servitisation model based on Australia’s cost advantages and high-skilled labour.

This project will demonstrate to the Australian manufacturing sector how to develop and commercialise leading intellectual property. It will enable Smartline and its project partners to transform their technology and businesses into global competitors. The project will take Smartline from being a basic cabinet manufacturer to being at an advanced level of Industry 4.0 integration. Manufacturing digitally enabled equipment for use in hospitals represents a significant shift towards competing on value and at scale.

MILESTONES



CONTRIBUTIONS: Government – \$150,000 | Industry – \$150,000 | In Kind – \$40,000



IMPACT

- › Creation of a world's-first patented technology that improves sterilisation and storage of endoscopes in hospitals
- › Advanced knowledge achieved through increased ICT intensity, including the ability to remotely monitor the performance of sterilisation equipment
- › An advanced business model achieved through services having a greater share in total revenue, enabled by remote monitoring services and maintenance
- › A greater number of staff members with STEM skills



GROWTH

- › \$11.5 million (25% in CleanPath software sales) over the next four years
- › \$25 million per year (\$6.25 million from CleanPath software) with a 5% market share in the US



JOBS

- › 15 high-skilled manufacturing personnel
- › Three software engineers and data analysts

PROJECT PARTICIPANTS

Smartline
MACHINERY



HealthTag

DASSAULT SYSTÈMES VIRTUAL SHIPYARD

innodev

Industry 4.0 maturity program to raise the global digital supply chain readiness of Australian manufacturing SMEs in preparation for future naval shipbuilding, mining and energy project participation

The Dassault Systèmes Virtual Shipyard is the first national level Industry 4.0 capability development program in Australia, benchmarked against world's best practise approaches.

This project identifies and bridges digital capability gaps of 14 SMEs looking to advance their Industry 4.0 capabilities and improve their readiness to participate in major future manufacturing opportunities such as Australia's Future Submarine program.

The project will facilitate critical knowledge transfer from global experts to the University of Adelaide, TAFE South Australia and University of South Australia to build curriculum for future independent training delivery.

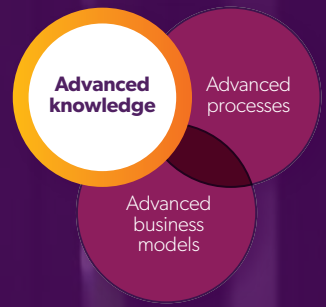
AMGC is co-funding the provision of ICT support and 12 months of post-training access to cloud-based infrastructure to enable participating SMEs to embed their new-found skills into standard day-to-day operations.

Upon conclusion of the project, the SMEs will have gained the skills necessary to integrate themselves into global value chains, and will have applied those skills within their own companies on real manufacturing projects.

The project will provide the Australian manufacturing sector a tangible demonstration of increased digital capability and advances the Australian manufacturing eco-system towards achieving a world class Industry 4.0 capability to exploit global value chain opportunities in multi-billion-dollar defence, mining, health, water and energy industries.

CONTRIBUTIONS: Government – \$534,152 | Industry – \$534,152

VIRTUAL SHIPYARD TRAINING PROGRAM



MILESTONES

14/11/17

- AMGC approval
 - ICT Support to training facility and cloud hosted software environment.
- 12 months post-training partially-subsidised access to cloud-hosted 3D Experience software platform.
- To support:
- › SME Business Value Assessments
 - › SME hands-on training in up to 12 digital capabilities using the Dassault Systèmes 3D Experience software platform
 - › SME self-learning programme

See over for project participants



IMPACT

- › Higher information and communication technology (ICT) intensity and increased SME digital capability to increase opportunities for global supply chain participation within major projects
- › More collaboration with other manufacturers during the AMGC project
- › Higher manufacturing digital literacy as a result of training on the Dassault Systèmes 3D Experience platform
- › Newer equipment and systems as a result of integrating the Dassault Systèmes platform into SME manufacturing operations
- › Larger geographical reach and increased potential for accessing global value chains using the Dassault Systèmes platform
- › Multiple future I4.0 tertiary education options via University curriculum development supported by Dassault Systèmes during the Virtual Shipyard project



GROWTH

- › Curriculum developed by University of Adelaide, TAFE South Australia and University of South Australia with assistance from Dassault Systèmes as part of the Virtual Shipyard project will help grow Australia's high-skilled workforce ready for I4.0 jobs required by global supply chains to deliver future naval ships and submarines, mining, health and energy sectors
- › Participating SMEs will have the digital literacy of relevance to global primes, enabling them to more easily participate in digital supply chains for major projects



JOBS

- › SMEs are expected to create new high skilled jobs, enabled by increased efficiencies driving increased revenue streams in new and existing markets

PROJECT PARTICIPANTS

innodev

**DS DASSAULT
SYSTEMES**

APC 
Technology



CORRUGATED METAL SHEET BENDING



A manufacturing process for bending corrugated metal sheets, and its commercialisation through global value chain partners

FormFlow worked with its project partners to develop a patented process for bending corrugated metal sheets, which has the potential to realise new market opportunities in the \$1 billion per annum global sheet metal market.

This project seeks to overcome deficiencies in corrugated sheet metal roofing constructions by eliminating:

- › Caps and flashing, which reduces building costs and improves visual appeal
- › Gaps and drafts, improving insulation
- › Gaps where moisture can enter during severe tropical storms
- › Gaps where dirt or animals can enter a structure
- › Gaps that facilitate ember attack during bushfires.

In addition to the corrugated metal sheet bending process, FormFlow has designed a business model based on manufacturing and then licensing FormFlow bending machines to sheet metal manufacturers. This enables other manufacturers to include bends in customised sheet metal orders.

By developing and validating the FormFlow machine for installation and integration in the sheet metal manufacturing process, FormFlow has created intellectual property that will deliver manufacturing revenue, employment and return on investment.

MILESTONES

10/11/17	●	AMGC approval
15/11/17	●	FormFlow machine operating environment and process engineering requirements identified and confirmed
20/11/17	●	Detailed design of the FormFlow machine developed and validated
15/12/17	●	Commercial FormFlow machine version 1.0 built and tested
31/7/18	●	Reference sites developed using products created on the FormFlow machine
31/10/18	●	FormFlow licensing model and technology integration plan established
31/3/19	●	FormFlow licensing model and technology integration plan realised

CONTRIBUTIONS: Government – \$250,000 | Industry – \$250,000 | In Kind – \$75,000



IMPACT

- › Introduction of a world's-first patented technology
- › Increased collaboration with local manufacturers to develop advanced knowledge in steel bending production process
- › Advanced processes achieved through integrating the technology with sheet metal manufacturing
- › Elevation of services to represent a larger share of total revenue



GROWTH

- › \$10–15 million per year in licensing revenue generated by FormFlow
- › Austeng will generate revenue through services, including contract manufacturing of bending machines, after sales services, machine maintenance and staff training
- › Potential for \$20–30 million per year (medium term) by taking a 2–3% stake in the global sheet metal roofing industry



JOBS

- › Five to 10 skilled jobs at FormFlow, including research engineers
- › Five skilled jobs at Austeng
- › 50 jobs across domestic project partners and prospective future partners

PROJECT PARTICIPANTS



CARBON FIBRE REINFORCED GEOPOLYMER CONCRETE



Production of a pedestrian bridge and validation of new construction material for the global supply chain

Victorian engineering firm Austeng is leading an AMGC project to develop a world's first construction industry innovation. The project involves members of the Advanced Fibre Cluster Geelong, Carbon Nexus and Rocla.

Combining Austeng's experience in polymer concrete projects with the world-class carbon fibre expertise of the Carbon Nexus research facility has allowed for the creation of a high-value product for use across the global construction industry.

Geopolymer and carbon fibre offers superior thermal stability, corrosion resistance and durability than concrete, plus it is rust-proof, acid-resistant, salt-resistant and thermally stable up to high temperatures. Austeng's Managing Director Ross George calls it "a cure for concrete cancer". This project is the first in the world to combine carbon fibre and geopolymer in concrete.

In addition to the product itself, Austeng will offer post-production design services based on this unique composite material.

According to IBISWorld research, the Australian concrete products market is worth \$2 billion. It has already been estimated that Austeng's new material could capture up to 1% of this (\$20 million) and enter the export market.

MILESTONES

15/11/17	●	AMGC approval
31/7/18	●	Bridge beam design
30/9/18	●	Computer modelling and optimisation
31/10/18	●	Manufacture and testing of a 'sleeper beam'
31/12/18	●	Modelling review in light of testing
28/2/19	●	Manufacture and testing of bridge beam

CONTRIBUTIONS: Government – \$50,000 | Industry – \$85,000 | In Kind – \$35,000



IMPACT

- › Increased spending on R&D to validate complex new product for the construction industry
- › Advanced knowledge achieved through collaboration with Carbon Nexus and members of the Advanced Fibre Cluster Geelong
- › Better energy efficiency and performance than cement



GROWTH

- › \$20 million plus export revenue in early earnings forecast
- › Carbon fibre will be domestically manufactured
- › There is a patent pending on the solution



JOBS

- › 10 jobs (medium term) as a result of commercialisation

PROJECT PARTICIPANTS



Austeng



CUSTOMISED PRESCRIPTION EYEWEAR



Implementing an automated production system to scale-up manufacturing of mass-customised prescription eyewear for a global consumer market

Dresden Optics and its project participants are developing a fully automated production system to scale up the manufacturing output of Dresden's market proven prescription eyewear product.

The collaborative partnership between Dresden and Astor Industries seeks to improve production processes and enable mass customisation of spectacles manufactured from recycled material. This project is the first step in realising Dresden's advanced business model over the next 18 months.

The primary objective is to increase production volume by implementing an automated robotic system that will double current production from 400 units to 800 units per day.

When this project is complete, Dresden will have established a fully automated production system. The enhanced manufacturing capability will reduce operating costs, improve production efficiency and reduce resource inputs, including materials and electricity requirements.

MILESTONES

15/12/17	●	AMGC approval
15/3/18	●	Robotic system design completed
31/10/18	●	Robotic equipment commissioned and installation completed
30/11/18	●	Programming robotic functions for automated manufacture completed
31/12/18	●	Digital integration with materials handling system completed
31/1/19	●	Testing, refinement and validation of the robotic system
30/6/19	●	Fully operational robotic sub-cell production completed

CONTRIBUTIONS: Government – \$250,000 | Industry – \$250,000 | In Kind – \$467,000



IMPACT

- › Increased collaboration with local manufacturers using recycled plastic materials in the production of eyewear frames
- › Advanced processes and knowledge, achieved through higher spending on R&D to validate the performance of the recycled plastic materials
- › Higher ICT intensity via increased robotic technologies
- › Increased trade intensity and access to geographically diverse export markets, including India and North America
- › Increased marketing expenditure



GROWTH

- › 33,000 units in 2017
- › 412,500 units by 2022
- › 5,235,000 units by 2027



JOBS

- › Five to 10 high-skilled jobs between Dresden and Astor Industries
- › Around 300 jobs at Dresden as increased production results in more retail stores

PROJECT PARTICIPANTS



ELEMENTAL
MANUFACTURING

CONSONIC



MRI COIL SET



Optimisation of MRI coil set manufacture to achieve scale

Magnetica is developing and supplying customised coil sets and components to provide extremity musculoskeletal (MSK) scans for wrists, hands, elbows, knees, ankles and feet.

With AMGC's support, Magnetica is able to bring their coil set manufacturing from the TRL4 prototype level to TRL9, indicating that the system is proven and production-ready for full commercial deployment. This project will allow Magnetica to manufacture coil sets in Australia and distribute the manufactured goods to the global supply chain via the marketing arm of its OEM partner.

The challenge of manufacturing multiple coils economically while meeting customer demand for manufacturing at scale requires Magnetica to optimise two critical elements of the coil manufacturing process, RF coil testing and gradient coil potting.

Magnetica is collaborating with its OEM on test plans, test methods and criteria for commercial RF coils; validation of production volumes; and pricing strategies for gradient coils. The company will collaborate with University of Queensland to access the unique RF and gradient testing facilities at the university's biomedical imaging facilities. In doing so, Magnetica will contribute to the body of knowledge around coil design available to the Australian manufacturing sector.

MILESTONES

1/1/18	●	AMGC approval
25/5/18	●	Pilot system architecture defined and pilot testing completed
31/7/18	●	Hardware design and value stream mapping completed
30/10/18	●	Integrated system software and hardware architecture defined and testing completed
31/12/18	●	Automated manufacturing equipment installed, integrated and validated to enable supply of finished coils

CONTRIBUTIONS: Government – \$269,825 | Industry – \$269,825 | In Kind – \$44,000



IMPACT

- › Advanced knowledge achieved through development of complex new product for global markets
- › Increased collaboration with industry and researchers to develop compact and portable MSK scanner
- › Growth in the patent portfolio
- › Increased product value density and greater trade intensity to geographically diverse export markets
- › Greater number of staff members with STEM skills



GROWTH

- › \$10.32 million in the next four years



JOBS

- › One engineer
- › Five high-skilled technicians for the project

PROJECT PARTICIPANTS



INTEGRATED CNC ROBOT



Transitioning a locally developed prototype of an integrated CNC Robot to production ready status

ANCA Machine Tools, in collaboration with its project partners, seek to commercialise a locally developed prototype robotic and digital control system for computer numerical control (CNC) grinding and milling machines. The project aims to replace limited-functionality pneumatic solutions that are currently integrated with many CNC machines. This will enable full automation of common production so that users can achieve unsupervised 24/7 CNC operating capabilities.

The prototype robotic system integrates with ANCA CNC machines and should have broad market appeal in other industries such as pharmaceuticals and food production. The robotic solution is a flexible alternative to traditionally operated CNC machines, aligned with Industry 4.0 technologies. Real-time production data will be available for use within enterprise resource planning (ERP) systems, while the programmable robot's flexibility will help optimise production and enable rapid reconfiguration between manufacturing tasks.

When the project is completed ANCA, and its subsidiary companies will be equipped to provide an integrated robotic solution to its customers and establish a new robot export industry for Australia.

MILESTONES

22/1/18	●	AMGC approval
23/2/18	●	Final product design review completed
12/5/18	●	Product validation, testing and adjustments completed
15/9/18	●	Process validation completed and first commercial product produced
30/4/19	●	Volume production achieved and product launch completed

CONTRIBUTIONS: Government – \$325,000 | Industry – \$325,000 | In Kind – \$145,836



Advanced knowledge

Advanced processes

Advanced business models



IMPACT

- › Sustained competitive advantage achieved by developing a specialised production robot for ANCA CNC machines
- › Increased collaboration with industry partners to test and optimise the development of innovative products and services
- › Advanced processes achieved through flexibly programming the robot's operations to optimise production and enable rapid reconfiguration between manufacturing tasks
- › Increased ICT intensity by integrating real-time production data with legacy ERP systems
- › Greater number of staff members with STEM skills



GROWTH

- › The robotic solution can be used by other industries within Australia and around the world
- › ANCA will manufacture the first generation of the product in Australia. Once ANCA reaches high-volume production, the first-generation product will be manufactured in ANCA's Taiwan facility while ANCA Australia develops the second generation



JOBS

- › More than 100 Swinburne University engineering students placed at ANCA through the industry-based learning program, many of whom have gone on to full-time employment with ANCA

PROJECT PARTICIPANTS



CARBON COMPOSITE CYCLE WHEELS



Upscaling of 36T's manufacturing capability and commercialisation of a 'multi-material' bicycle wheel via global value chain partners

36T has developed patented multi-material technology for manufacturing highly optimised bicycle components.

This AMGC project seeks to scale-up 36T's manufacturing processes and production capabilities. Success will be demonstrated by taking a prototype multi-material bicycle wheel through to commercialisation.

To validate its manufacturing processes, 36T will produce an 'off-tool' sample, which represents the starting point for commercial production of a high-performance cycle wheel for elite and enthusiastic cyclists. The multi-material wheel is 30% lighter than a standard wheel, without compromising component strength, aerodynamics or material integrity.

The project involves developing a robotic manufacturing cell to produce multi-material products. It will culminate with testing and validating the 'off tool' samples, at which point 36T will be production-ready.

Following validation of 36T's manufacturing capability, the company will pursue opportunities in adjacent growth sectors to position 36T as an international leader in multi-materials manufacturing. In addition to bicycle wheels, 36T will exploit its technical leadership and production capability across other global value chains, including in the defence, automotive and consumer products.

MILESTONES

A vertical timeline graphic with a yellow bar and a downward-pointing arrow on the right side. Milestones are marked with purple dots and connected to the bar by thin lines. The background of the table rows alternates between white and light beige.

5/2/18	●	AMGC approval
16/3/18	●	Detailed plans for the robotic manufacturing cell designed, costed and confirmed
27/4/18	●	Robotic manufacturing cell, machining setup and testing completed
8/6/18	●	Production and testing of tooling completed
20/7/18	●	Testing and validation of 'off tool' sample completed. Team training on production processes completed

CONTRIBUTIONS: Government – \$175,000 | Industry – \$267,000 | In Kind – \$45,400



IMPACT

- › Advanced processes through increased ICT intensity and increased use of robotic production
- › Advanced knowledge achieved through increased collaboration with university researchers in developing complex new products
- › Increased diversity applying multi-materials technology across multiple product segments, services offering and geographies
- › More collaboration with other manufacturers
- › A greater number of staff members with STEM skills



GROWTH

- › \$12–\$15 million in global sales by 2020



JOBS

- › 13 to 20 full-time positions at 36T
- › Five to 10 (or more) positions in 36T's supply chain

PROJECT PARTICIPANTS

36T

BASTION

baum
PASSION PRECISION PERFORMANCE



zedtex

WORLD LEADING COMPOSITE MANUFACTURING PROCESS



Development of a customised software package that facilitates the design and manufacture of complex components with a reduced occurrence of defects

This project seeks to address a global challenge among composite manufacturers by aiming to reduce the occurrence of defects arising when resin shrinks during composite manufacturing, and improve the quality of the surface finish when composite materials come out of the mould. Successful execution of this project will lower the failure rate of complex components, reduce manufacturing cycle times, and enhance capabilities in modelling and simulating composite materials.

Understanding how to control and eliminate this fundamental problem will create a sustained competitive advantage. The technical leadership will increase international recognition of Australia's composite manufacturing industry.

The project is developing a customised software package that enables complex components to be designed and manufactured without these shrinkage issues. These components will be used in the production of Sykes Boats and Carbon Revolution Wheels.

The project will help ensure Australian composite manufacturers remain globally competitive. The tools, knowledge and protocols developed during this project will improve Australia's composite manufacturing value offering, enabling the design and manufacture of complex composite solutions at a quality and consistency not available elsewhere.

If successful, this project will demonstrate how the Australian manufacturing sector can develop and commercialise a new, world-leading composite manufacturing process using customised software and Australian ingenuity. The industry-wide impact will continue through Deakin University's engagement with project participants and other firms seeking to adopt advanced processes in complex composite manufacturing. The university will provide ongoing education for postgraduate students, covering advanced process for complex composite manufacturing.

MILESTONES

8/3/18	●	AMGC approval
6/4/18	●	Preliminary experimental and modelling benchmark
4/5/18	●	Software package development
8/6/18	●	Validation of model using laboratory scale composites
30/9/18	●	Development of new protocols and demonstration

CONTRIBUTIONS: Government – \$80,000 | Industry – \$80,000 | In Kind – \$474,166



IMPACT

- › Increased spending on R&D to develop software that improves understanding of and reduces the occurrence of resin shrinkage
- › Increased research collaboration with Deakin University, to reduce the occurrence of defects
- › Manufacturing process development with Carbon Revolution which provides specific expertise in composite manufacturing
- › Advanced processes achieved by implementing new manufacturing techniques that reduce defects and the need for repairs
- › Growth in the patent portfolio



GROWTH

- › \$4–5 million per year in new sales



JOBS

- › Five to 10 high-skilled jobs

PROJECT PARTICIPANTS



Geelong Advanced
Fibre Cluster



FLIGHT SIMULATOR



Scaling production of flight simulator for the global pilot training market

SynFlyt has developed a patented prototype Category B flight simulator and is aiming to manufacture 250 units over the next three years for the global civil aviation flight training and simulation market. The flight simulator includes remote monitoring capabilities, so performance data from each unit is collected and analysed to enable ongoing improvements and predictive maintenance. Specifically, the simulator collects mechanical data to identify motion control issues, then the SynFlyt software is upgraded remotely to continually improve performance and user experience.

Most flight training schools cannot afford to purchase a flight simulator, which typically costs over \$130,000 plus setup, software and ongoing servicing. SynFlyt has developed a zero-cost placement model for flight training schools. Instead of selling them simulators, SynFlyt charges student pilots directly via debit or credit card at \$65 per hour. The cost to pilots is dramatically reduced, for example, from \$350 per hour in a Cessna, to \$65 per hour in a SynFlyt simulator set up as a Cessna cockpit. The return on investment for each placed simulator is approximately 30 months.

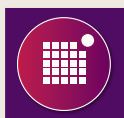
On conclusion of this project, SynFlyt will have a market ready flight simulator for sale to domestic and international customers, and will have validated its manufacturing processes to begin full rate production.

SynFlyt and the project participants will become innovation leaders through collaborative R&D and higher spending on R&D; more collaboration with research institutions and industry; greater intensity of STEM skills; and better-qualified employees.

MILESTONES



CONTRIBUTIONS: Government – \$279,550 | Industry – \$279,550 | In Kind – \$25,000



IMPACT

- › Sustained competitive advantage achieved through increased spending on R&D to manufacture a flight simulator for pilot training
- › Increased ICT intensity achieved through remote monitoring of performance data for ongoing improvements and predictive maintenance
- › Advanced business model achieved through services representing a greater share of total revenue, enabled by SynFlyt's placement model
- › Growth in the patent portfolio
- › Greater number of STEM-qualified employees



GROWTH

- › \$33 million in revenue per year by the end of year three



JOBS

- › 20 high-skilled jobs

PROJECT PARTICIPANTS



CONVEYOR TABLE AND MOTION-CONTROL SYSTEM



Developing a 'Smart Factory' conveyor table and motion control system for global logistics applications

Rotacaster and the project participants will design, develop, and install a 'smart factory' conveyor table and digital control system for Tesla at its Gigafactory battery plant in Sparks, Nevada. The project participants will use Rotacaster's patented omniwheel to create a modular, servo-driven conveyor transfer system. The conveyor transfer system is capable of handling large and heavy objects, such as Tesla vehicle batteries.

This project aims to achieve a shift from large production-centric manufacturing to customised, smart and competitive manufacturing that is backed by collaborative research and development (R&D) together with highly skilled workers. This project will deliver an R&D asset, associated intellectual property (IP) and a commercial product. It will create a world-class reference site in form of Tesla's battery factory, which will help Rotacaster to sell smart factory solutions to other large companies around the world that operate sophisticated factories and logistics hubs.

Rotacaster's solution will be modularised to accommodate the use of 'plug and play' components with Internet of Things (IoT) functionality. This will give customers more flexibility and create an advantage over large, expensive, single-system solutions. Rotacaster's digital control system integrates with existing production systems and responds to live factory data for tracking and recording product movement.

MILESTONES

28/5/18	●	AMGC approval
20/7/18	●	Technical report of design guidelines completed
21/9/18	●	Production and verification of prototype for testing
9/11/18	●	Commercial design of conveyor table finalised
14/12/18	●	Production of market ready conveyor table completed
31/1/19	●	Installation of conveyor table at customer site completed

CONTRIBUTIONS: Government – \$211,122 | Industry – \$211,122 | In Kind – \$101,700



Advanced
knowledge

Advanced
processes

Advanced
business
models



IMPACT

- › Increased spending on R&D and collaboration with research institutions to design, produce and test a prototype of the conveyor table and digital control system
- › Higher ICT intensity through the integration of a digital control system
- › Digitisation of the conveyor table enables Rotacaster to gain a greater share of services in total revenue



GROWTH

- › Rotacaster has the potential to take a \$1.15 – \$2.3 million share of the Australian Market and \$85 – \$170 million share of the global market



JOBS

- › Five – 10 high skilled jobs

PROJECT PARTICIPANTS

rotacaster

D+I™

AUSTRALIS
ENGINEERING

TESLA

celluveyor

UTS
UNIVERSITY OF TECHNOLOGY SYDNEY

VALUE FROM SOLID WINE WASTE



Drawing value from solid wine waste by developing and demonstrating a small-scale pilot plant and designing an industrial-scale production plant

This project seeks to validate a semi-continuous production process for transforming solid wine waste into high-value compounds. Once the process is validated, the project participants will produce plans for an industry-scale production plant.

The Viridi Innovations 'waste to value' technology enables on-site processing of solid wine waste to produce tartaric acid and grape sugar. These are both key ingredients in the global food manufacturing value chain. Applying this technology to large-scale wine production improves production flexibility and generates better environmental outcomes.

Viridi's business model involves partnering with progressive wine producers, such as project participant Accolade Wines, to reduce their key input costs and share the value generated by selling excess product to other customers. The market demand for tartaric acid alone is expected to be US\$3.16 billion by 2022.

On conclusion of the project, the project participants will have validated the 'waste to value' production process and produced designs for an industrial-scale application.

MILESTONES

7/5/18	●	AMGC approval
8/6/18	●	Design and costing for demonstration plant completed
10/8/18	●	Production of demonstration plant completed
12/10/18	●	Testing of demonstration plant completed
16/11/18	●	Concept design for industrial scale pilot plant completed
1/2/19	●	Cost report of industrial scale pilot completed
29/03/19	●	Detailed design documentation for industrial scale pilot plant completed

CONTRIBUTIONS: Government – \$145,000 | Industry – \$145,000 | In Kind – \$48,000



Advanced
knowledge

Advanced
processes

Advanced
business
models



IMPACT

- › Higher spending on R&D to design, construct and test a small-scale demonstration plant in collaboration with Swinburne University
- › Larger patent portfolio
- › Collaboration with Austeng to produce plans for an industrial-scale pilot plant
- › Larger geographical reach by offering the Viridi technology to international wine producers



GROWTH

- › The Viridi process has the potential to unlock more than \$600 of value per tonne of solid wine waste
- › The potential gross value – addressing only the top five wine producers in the top five global wine producing regions (less than 4% of global wine waste production) – is more than \$500 million per annum



JOBS

- › 10 medium to high skilled jobs

PROJECT PARTICIPANTS



INDUSTRY 4.0 DIGITISATION OF SME INFRASTRUCTURE

DematecAutomation

Industry 4.0 realisation via digitisation of existing SME Manufacturing Infrastructure and IIoT augmentation of manufacturing equipment being locally manufactured by Australian SMEs

Dematec Automation and 17 small-to-medium sized Australian manufacturers from across the country will demonstrate how Industrial Internet of Things (IIoT) sensors can instrument existing manufacturing equipment to elicit valuable real-time operational data and identify opportunities for optimisation of manufacturing operations. Several SME Manufacturers will augment their manufacturing equipment product offerings with IIoT to introduce or increase servitisation opportunities.

The 17 manufacturers service a diverse range of industry sectors including metal fabrication, materials handling, textiles, chemicals, concrete, hydraulics, joinery, marine, masonry and packaging. They will each become case studies that help other manufacturers in allied sectors readily identify the potential return on investment for digitalising legacy manufacturing plant and equipment and bringing their operations into the Industry 4.0 context.

The project spans Western Australia, South Australia, Victoria, Tasmania, Australian Capital Territory, New South Wales and Queensland, and is associated with the Department of Industry, Innovation and Science’s Entrepreneurs’ Programme.

Digitisation of manufacturing equipment offers immediate and long-term benefits, not just limited to analysis of current operational workflows and resource utilisation. It is a critical step in achieving high-value-add product offerings such as detailed traceability throughout the manufacturing process and therefore opportunities for servitisation through predictive maintenance offerings. It supports the adoption of digital supply chain transparency and the optimisation of manufacturing resources at a supply chain level.

MILESTONES

15/05/18	●	AMGC approval
12/10/18	●	Deployment and handover of monitoring system equipment for sites 1–3
24/12/18	●	Deployment and handover of monitoring system equipment for sites 4–6
11/02/19	●	Deployment and handover of monitoring system equipment for sites 7–9
18/03/19	●	Deployment and handover of monitoring system equipment for sites 10–12
16/09/19	●	Deployment and handover of monitoring system equipment for sites 13–17
14/10/19	●	Case studies complete

CONTRIBUTIONS: Government – \$248,470 | Industry – \$248,470



IMPACT

- › Higher spending on R&D during the AMGC project
- › Increased ICT intensity by integrating IIoT technology on existing infrastructure
- › More automation as a result of integrating IIoT technology on existing infrastructure
- › Better energy efficiency as a result of enhanced analytics
- › Case studies across multiple manufacturing sectors



GROWTH

- › Better efficiencies garnered from hi-fidelity, real-time knowledge and analytics of manufacturing plant and equipment will enable better utilisation of capital infrastructure
- › Dematec will achieve deployment of their IIoT systems infrastructure to a broad range of sectors
- › Increased value offerings via integration of IIoT within manufactured product lines will help secure and improve market position for manufacturers offering B2B products



JOBS

- › High-skilled jobs will be devoted to further development of Dematec's IIoT systems infrastructure during this project
- › Better understanding of capital infrastructure utilisation for participating SMEs

PROJECT PARTICIPANTS

DematecAutomation + Ecosystem of 17 SMEs to be announced

INNOVATIVE CRUTCH WEAR



Mine site testing of innovative crutch wear on hoist chains for mining dragline machines

Cast Equipment & Chain Products Pty Ltd (CECP) have invented and patented a new chain system which is part of the immense Dragline Bucket assembly. Dragline machines remove overburden and dig out clean coal, iron ore or other resources at mines. This CECP chain will revolutionise the chain business globally by significantly increasing the life expectancy of chains, improving productivity, saving on maintenance costs and reducing downtime for the mining sector, locally and globally.

Limited trials of these drag chains were undertaken, which verified the 50% reduction in wearability of the crutch design. This current project aims to prove the commercial viability of the chains, resulting in the eventual sale of trial chains.

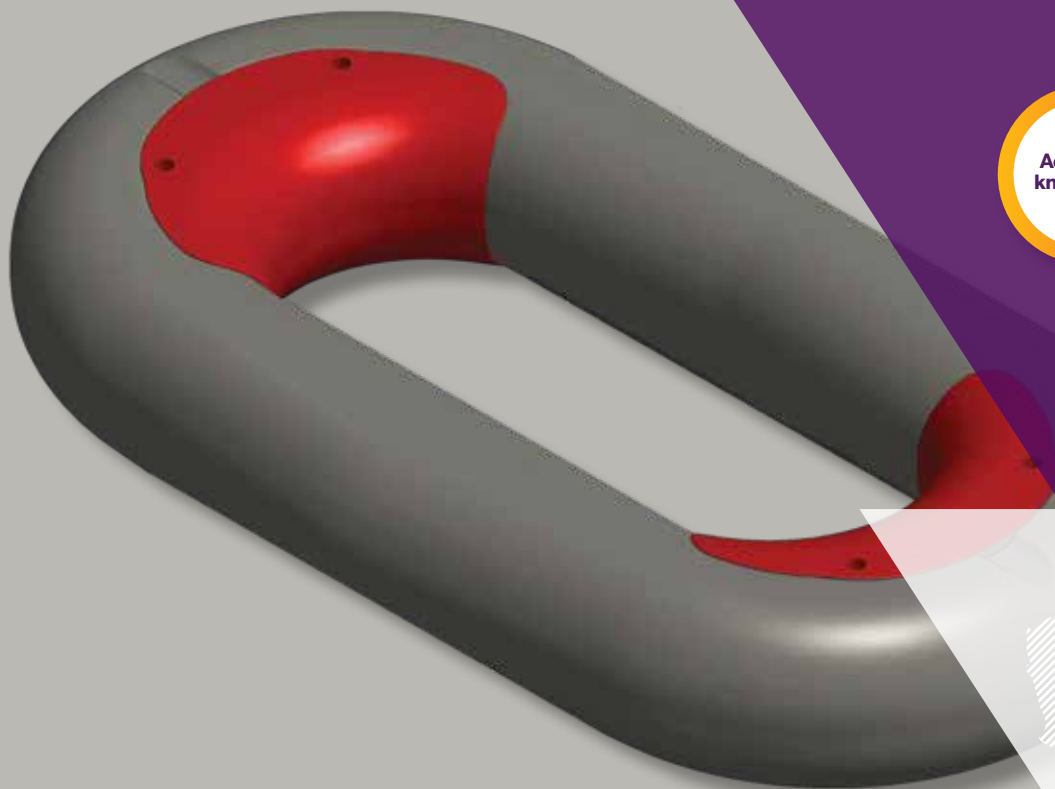
The technology for dragline chains has not changed in more than 40 years. This Australian patented invention demonstrates advanced processes with technical leadership in designing a 400+ BN removeable crutch system.

Drag chains used in the Australian mining industry are currently imported from US companies such as Columbia and cost \$100 million annually. This project will provide an opportunity for a local manufacturer to reshore a portion of this market back to Australia.

MILESTONES

15/5/18	●	AMGC approval
30/7/18	●	Foundry designs drafted
30/8/18	●	Patterns completed and samples manufactured
15/9/18	●	Sample metallurgical test completed
30/10/18	●	Sets 1 and 2 chains manufactured
31/12/18	●	First eight week trial completed
31/12/18	●	Set 3 chains manufactured
28/2/19	●	Second eight week trial completed
30/4/19	●	Third eight week trial completed

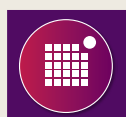
CONTRIBUTIONS: Government – \$398,941 | Industry – \$398,941 | In Kind – \$4,800,000



Advanced knowledge

Advanced processes

Advanced business models



IMPACT

- › Higher spending on R&D and collaboration with research institutions to validate designs
- › Greater share of services in total revenue by charging a leasing or rental fee per bank cubic metres



GROWTH

- › \$43.2 million per annum with a potential 10% market share



JOBS

- › This project will generate additional jobs for 10 staff members at CECF, five at White Industries, six at Alfabs and three UQ graduates

PROJECT PARTICIPANTS



GLENCORE



CONCRETE COLUMN BUILDING SYSTEM



Validation of a prototype system for manufacturing and installing structural concrete columns in multi-storey buildings

This project seeks to validate a prototype system for installing structural concrete columns in multi-storey commercial building projects. The core activity of this project includes refinement of product design, comprising interlocking steel and plastic components that form a concrete mould for weight bearing columns, then demonstrating the construction system via a multi-storey building project managed by Piety.

Ozwall Manufacturing has developed a patent pending concrete column building system where pre-fabricated steel moulds are used to accelerate the concrete pouring process. The construction time of multi-storey buildings is reduced through the combined utilisation of prefabricated products, enhanced processes and a service orientated business model.

The steel columns are produced by using roll formed steel components and a patented system of plastic connecting clips. The unique design profile of the roll formed steel components allows a modularised system that achieves any desired column size, shape and structural engineering specifications.

Achievement of these two steps will enable the Ozwall Manufacturing IP to be commercialised in terms of manufacturing revenue, employment and investment. The project will provide Ozwall with the necessary manufacturing processes and equipment to begin low rate production and marketing of the concrete column building system to the construction industry. The OZM system will scale globally via licensing and service agreements to construction firms.

MILESTONES

11/6/18	●	AMGC approval
6/7/18	●	Confirm process engineering requirements with project partner
10/8/18	●	Produce CAD files of final product design and patent filing completed
5/10/18	●	Produce roll form tooling, equipment and components
18/01/19	●	Production, installation and testing of prototype products
12/3/19	●	Licensing model and product specification manual completed

CONTRIBUTIONS: Government – \$159,725 | Industry – \$159,725 | In Kind – \$10,000



Advanced
knowledge

Advanced
processes

Advanced
business
models



IMPACT

- › Higher spending on R&D to refine the design of the steel columns and plastic components to improve performance
- › Larger patent portfolio
- › Collaboration with The University of Wollongong to test the structural performance of the profiled metal columns
- › Newer equipment which is required to manufacture the steel column components



GROWTH

- › \$15 – \$20 million per annum in manufacturing revenue and \$1 million in licensing revenue
- › \$200 million per annum from taking a 1% stake in the global formwork industry (medium term)



JOBS

- › Additional 5–10 skilled jobs at Ozwall Manufacturing, including appointment of research engineers in 2–3 years
- › An additional >50 jobs across domestic supply chain in 2–3 years

PROJECT PARTICIPANTS



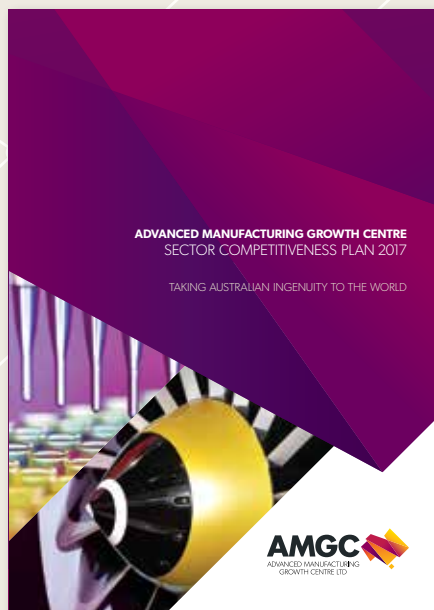
PIETYTHP

Metsquare
Pty. Ltd

UNIQUE ENGINEERING GROUP



OUR PUBLICATIONS



Sector Competitiveness Plan 2017



Industry Knowledge Priorities



A New Definition for a New Era –
Defining Advanced Manufacturing Report



Building Resilience in Australian
Manufacturing 2018



Innovation and Science Australia
Submission 2017



Submission to the Department of Industry,
Innovation and Science 2017



Australian Government
Department of Industry,
Innovation and Science

Industry
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Centres