

Annual Report 2007-2008

Rail Innovation Australia Pty Ltd



Chairman's message



This is the first Annual Report for Rail Innovation Australia (RIA). It is an innovative story of a new company offering new services and ideas to a rail industry in a period of unprecedented growth and opportunity. Besides providing a pathway to market for the creative products of the recently completed CRC for Railway Engineering and Technologies, the company is developing partnerships and facilitating technology solutions for the rail industry.

RIA's first year of operation was one of consolidation and growth, licensing Rail CRC intellectual property and issuing shares to our owners, together with high potential products being developed with new partners. The OZ-ECP brake project commenced with international partners and grant funding was secured to progress the Health Card project. The highly successful training and education courses developed by Rail CRC were further expanded and international connections established to find new markets for these programs.

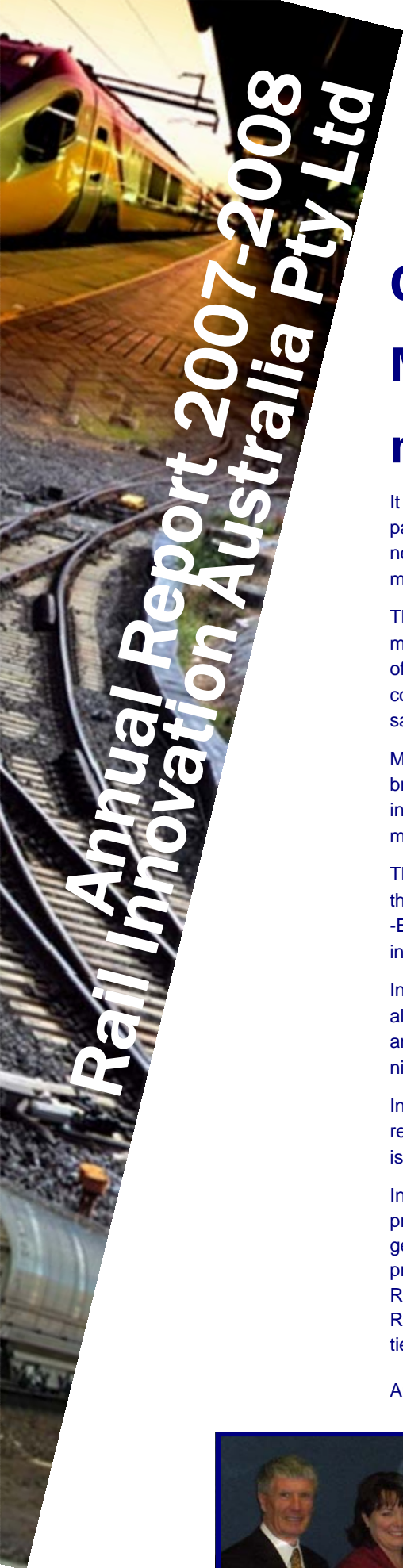
Building on its substantial portfolio of technology and skills products, Rail Innovation Australia will grow its business in the years ahead by providing and facilitating creative and innovative services to the rail industry with international and domestic partners. Our long and close relationship with the rail industry will help us take advantage and foster a strategic direction of 'Open Innovation'.

Rail Innovation has a passionate and experienced Board of Directors who previously guided the successful CRC for Rail Engineering and Technologies. I want to take this opportunity to thank them for their ongoing commitment and enthusiasm. I would also like to thank CQUniversity for hosting and helping us nurture the new company.

The challenge of starting up a new company in a world of rail industry renaissance is exciting, but requires strong and innovative leadership. RIA has been most fortunate to have its General Manager Anna Thomas taking us forward, ably assisted by Vicky Kreiser. On behalf of the Board I would like to express our thanks to Anna for leading the company through its first year of operation and preparing us for an exciting future.

I commend this report to you.

Vince O'Rourke AM



General Manager's message



It is my pleasure to present the first Annual Report for Rail Innovation Australia (RIA). The company commenced operations on 1 November 2007 after winding up the CRC for Railway Engineering and Technologies (Rail CRC) and by the end of June 2008 had completed its first nine months of operation.

There is no better time for establishing a new company in the Australian rail industry, with the market for rail services experiencing enormous growth. Today, the utilisation and engagement of technology is paramount for an industry struggling to cope with skyrocketing fuel and energy costs and working to meet market demand, increase network capacity and improve productivity, safety and customer service.

Many of the products developed by Rail CRC in the areas of train control, scheduling, ECP braking, smart monitoring, maintenance and fuel saving systems are well positioned to address industry challenges, and it is RIA's principal mission to take those products and technologies to market.

The major focus for the year has been the further development of Rail CRC technologies from the proof of concept to the working prototype stage. In 2008, RIA successfully launched the OZ -ECP brake project and secured grant funding for the Health Card project with both products intended to reach the market by 2010.

In addition RIA worked to grow company revenue from the products and educational programs already in the market. Significant effort marketing Rail CRC education programs in Australia and overseas has borne fruit, with increased student numbers in Australia and exciting opportunities for expansion of the programs internationally.

In parallel with commercialization activities, RIA has successfully completed legal arrangements required for finalising the transfer of the CRC intellectual property portfolio to the company and issue shares.

In the long term RIA also aims to position itself as an intermediary and facilitator of intellectual property and technology in the railway industry. The concept of 'Open Innovation', which suggests that in future companies will be more reliant on the use of externally developed intellectual property, ideas and solutions for creating new products, opens up exciting opportunities for RIA. RIA's established relationships and close collaboration with the rail industry over past years via Rail CRC, positions the company well to identify innovative technologies and market opportunities and build cooperative alliances for mutual benefit for many rail organisations.

Anna Thomas



RIA Board Members:
(From left) Prof Peter Robinson, Prof Jennelle Kyd (CQUniversity), Mr Bill Hopes, Mr David Foldi (RailCorp), Prof Dudley Roach and Mr Vince O'Rourke.



International collaboration fast-tracks OZ-ECP brakes

The Rail CRC-developed OZ-ECP brake project is on target to meet the increasing world-wide demand for ECP brakes, with project participants Rail Innovation Australia, QR, Faiveley Transport (France) and CQUniversity signing an agreement this year aiming to take the OZ-ECP brake product to market by 2010.

A pair of CQUniversity researchers has been seconded to Piosasco, Italy during 2008 to work with Faiveley engineers to develop a working prototype and conduct laboratory testing, prior to field testing of the product on the QR network in Queensland in 2009.

Identified by the US Railroad Administration as one of the key technologies imperative for increasing the capacity of rail networks, the OZ-ECP product is being touted as the product of choice because of improved functionality, convenient installation, a lower whole life cycle cost and additional opportunities for the development of customised on-wagon intelligent applications.

The worldwide market for ECP brake products has been estimated in excess of \$10 billion, and with rail operators around the world investigating the benefits of ECP technology and potential strategies for conversion, OZ-ECP is well positioned to take a portion of the market. As confirmed by independent consultants from STEM Partnership in 2006, the CRC OZ-ECP brake project is capable of delivering significant return to the company and its shareholders.

The final product will incorporate the intellectual property developed by Rail CRC and Faiveley Transport and significant input into the new design from QR engineers. A new patent application in the name of all project participants is currently being prepared and is expected to be lodged in late 2008.

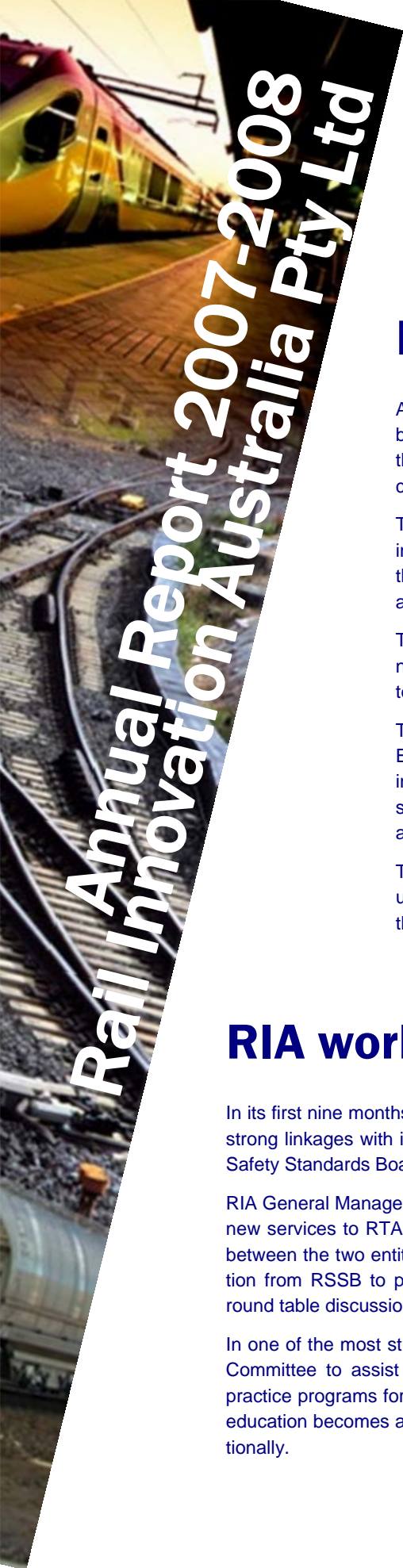
The project is being overseen by the Project Governing Board comprising representatives from all project parties, while the management of technical and operational issues is being handled by the Project Steering Committee – with both groups meeting monthly.

Due to the fact ECP brakes are a safety critical technology, the new product is subject to rigorous laboratory and field tests making the project significantly expensive. As such, it will take full advantage of the \$4 million budget incorporating project participant contributions and a \$.87 million grant from the Queensland Smart State Innovation Fund.

Despite the initial delay negotiating the project agreement between all partners, the OZ-ECP project is now on-track and progressing well. As well as meeting key milestones, the project is also establishing long-term cooperation between CQUniversity researchers and Faiveley Transport linking Australian rail research within the international technology supply chain.



The Australian and international OZ-ECP brake project team including Photo 1: (From left) Mr Roger Jonsson (Faiveley Transport), Mr Mark Carling (Faiveley Transport), Mr Chris Bosomworth (CQUniversity), Dr Colin Cole (CQUniversity) and Photo 2: The Italian Team at Faiveley headquarters, Italy with (back far left), Mr Mark Hayman (CQUniversity) and (front far right), Mr Chris Bosomworth.



Health card funding boost for RIA

A major coup for Rail Innovation Australia in its first year of operation was the announcement by the Queensland Government Smart State Innovation Fund of a \$670,000 grant to progress the Rail CRC-developed 'Health Card' from proof of concept to working prototype ready for commercial production.

The Health Card – an innovative on-wagon monitoring technology will be further developed to incorporate a locomotive Head Unit (HEU) communication device with greater capabilities and the ability to process events and produce advice and warning signals for drivers, traffic control and maintenance teams.

The prevention of train derailments, improved safety of operation, increased capacity of rail networks due to the prevention of unplanned train and track maintenance will make this new technology an invaluable one for the rail industry.

The impending conversion of the heavy haul railway fleet in Australia and overseas into an Electronically Controlled Pneumatic (ECP) braking mode within the next three to five years will introduce a power supply on all wagons, and as such provide a perfect opportunity for 'Smart' systems such as the Health Card to provide ongoing real-time monitoring of train operations and wagon dynamics.

The RIA Health Card will be developed as a value-added product to the OZ-ECP brake product, providing an attractive proposition for national and international rail organisations when they reach the market in 2010.

RIA works to engage industry

In its first nine months of operation, Rail Innovation Australia has moved strongly to establish dialogue and strong linkages with industry associations, including the Rail Track Association Australia (RTAA), the Rail Safety Standards Board (RSSB) and the Railway Technical Society of Australia (RTSA).

RIA General Manager Dr Anna Thomas presented the Rail CRC technologies and outputs as well as RIA's new services to RTAA members in July 2008, with discussions also held regarding potential cooperation between the two entities on potential projects and activities. In June, Dr Thomas also accepted an invitation from RSSB to present at the conference 'Smart Trains on Smart Tracks' and to participate in the round table discussion.

In one of the most strategically important collaborations, RIA has also approached the RTSA Educational Committee to assist in regular reviews of the RIA educational programs to ensure they remain best-practice programs for industry. RIA aims to establish a long-term, ongoing collaboration with the RTSA as education becomes arguably the most important issue on the rail industry agenda in Australia and internationally.



Rail CRC education programs taken to the world

In a major coup for the efforts of Rail CRC staff and industry partners during its seven year life, one of the four education programs developed within the Centre is set to be delivered internationally in near future with others also on track to be taken to the world.

Negotiations are well underway between RIA, CQUniversity and a rail training provider in the United Kingdom for the delivery of the first international education pilot project – the CRC post-graduate signalling program in Europe.

At the same time, Rail Innovation Australia General Manager Dr Anna Thomas presented a proposal for the adaptation and delivery of the CRC programs in other countries at the inaugural seminar of the UIC Asian Network of Rail Training Centres held in Seoul, Korea in May 2008 at the 8th World Congress on Rail Research.

Representatives from countries including Korea, China, Russia, Japan, Australia, Vietnam and Malaysia attended the presentation, with the Rail CRC concept of cooperative development of training programs by industry and academia and their delivery via distance online education securing significant interest from the audience.

The international moves come on the back of strong support for the world-first rail postgraduate training programs in Australia, with the postgraduate infrastructure program, postgraduate rolling stock engineering program, operations management courses and postgraduate signalling program all experiencing steady growth in 2008.

RIA's efforts for the education programs in 2008 have been strongly focussed on marketing, and as such - the infrastructure program enrolled 14 students in its first term with high interest suggesting greater numbers in 2009; the rolling stock course at the University of Wollongong increased enrolments from 12 students in 2007 to 29 students in July 2008; and thanks to the ongoing support of the Australasian section of the Institute of Railway Signalling Engineers and Mr Les Brearley, the postgraduate signalling program has enrolled 78 students in 2008 including 11 international students from the UK, Ireland, Italy, South Africa and the United Arab Emirates.

The Operations Management program – the only one of the four RIA education programs not to require a university degree as a prerequisite for enrolment - as it is open to managers and general administrative staff, has secured positive feedback from the first cohort of students in 2008.

Information on each of the rail education programs can be found by following the links to the relevant university's course program website from www.railinnovation.com.au.



Photo: 1st Seminar of Asian Network of Rail Training Centers in Seoul Korea in May 2008 with RIA's Dr Anna Thomas (fourth from right).

FreightMiser penetrates rail market

Jointly developed Rail CRC, TMG International and UniSA product FreightMiser has begun a steady but sure penetration of the rail market at the perfect time as skyrocketing fuel prices make fuel saving technology a key priority.

Following rigorous tests by Asciano – formerly Pacific National – in 2007 and 2008, the product has been successfully deployed by the company, the leading Rail CRC partner in the development of the technology, producing an average six to eight per cent fuel savings.

To assist TTG, formerly TMG International, Rail Innovation Australia signed a Memorandum of Understanding (MOU) in 2008 to cooperatively market the product worldwide.

RIA General Manager, Dr Anna Thomas, presented on FreightMiser at the World Congress of Rail Research in Seoul, Korea in May 2008, producing strong interest and resulting in negotiations with a number of potential licensees, manufacturers and rail operators from around the world.

ScheduleMiser still to secure support

Confirmed during its development by Rail CRC, TMG International and UniSA to produce thousands of potential train schedules in minutes to replace timely and costly manual train planning, ScheduleMiser is still to secure the support of a rail partner to prove the benefits of the product in full operation.

To progress the project in 2008, Rail Innovation Australia has approached VisiRail, whose scheduling environment is currently being used by QR and ARTC – the largest network owners in Australia – to discuss the potential of a cooperative project to test the product.

An incorporation of ScheduleMiser with the VisiRail scheduling environment on the standard and narrow gauge networks is essential to prove its benefits, and as such the support of one or both of QR and ARTC is essential for the project to progress.

RIA is also investigating opportunities for combining ScheduleMiser with crew scheduling software, and will continue to work to introduce and prove the product in the rail market.

CRC collaboration from old to new

As Rail Innovation Australia moves strongly forward with its commercialisation and technology focus, it also remains closely tied to the 'new from existing' CRC the CRC for Rail Innovation (CRCRI) in the management and completion of transitional projects.

A cooperative approach has meant that research outputs and intellectual property developed by Rail CRC from 2001-2007 are being used for undertaking research in the new Centre, including outputs from project 41 New Wheel Steel, project 38 Bridge Strengthening, project 36 Noise Monitoring and project 18 Rail Corrugation.

Discussions between RIA and CRCRI were held regarding the patent application and an assessment of the commercial potential of project 41 New Wheel Steel in 2008. Taking the outcomes from project 38 bridge strengthening, the CRCRI has submitted a proposal to the UIC for an international research project aimed at developing the guidelines on using fibre composite materials for bridge maintenance.

In addition, the technology from Project 36 noise monitoring project and data produced by the Project 18 rail corrugation project will be used by the new CRC in a newly approved project on noise study.

Rail Innovation Australia would like to take this opportunity to thank Mr David George, Chief Executive of the CRCRI, for his support with completion of transitional projects and activities of Rail CRC and looks forward to continuing on-going collaboration on rail research and technology in future.

New innovation service for industry

Rail Innovation Australia aims to bring a new innovative service to the rail industry in future, acting as an intermediary in the market of intellectual property and a facilitator of collaborative development of new products and technologies.

With the concept of 'Open Innovation' in mind – where companies abandon the traditional negativity towards 'not invented here' and act as integrators of external ideas, intellectual property and capabilities - RIA will work to identify technologies that may be successfully applied to the rail industry and assist organisations to better manage their IP assets.

RIA's intention is to assist the industry to become more technologically advanced by identifying potential technologies developed by researchers, universities and companies from other industries, that may be successfully applied to the railway industry.

Because of the growing complexity of technologies and increasing costs of R&D, new products are often brought to the market not by individual companies but by groups or networks of organisations that have complementary capabilities and interests.

Due to the strong history of collaboration and networking within the rail industry via Rail CRC, RIA is well placed to take advantage of the fact that business networking and searches for partners for external expertise, capabilities and IP is the way of the future.

The statement on RIA's website with this new mission has already attracted interest from providers of intellectual property seeking commercialisation partners and a number of 'proof of concept' technologies in areas of importance for the rail industry are currently being assessed.

RIA intends to utilise partnerships and joint ventures as the major approaches in these undertakings.

One of the major opportunities RIA is also currently assessing is the provision of a Rail Innovation Search Network, which could minimise the search time and cost and provide a powerful, flexible tool for rail organisations to undertake a confidential search for information, intellectual property, solutions, knowledge, capabilities, project partners and sponsors.

To find out more information or discuss the Rail Innovation Search Network contact RIA General Manager Dr Anna Thomas on a.thomas@cqu.edu.au or phone (07) 4923 2029.

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