



Advancing the Safety, Efficiency, Connectivity and Sustainability of the Australasian Rail Industry

December 2018

Strategic Objectives and Operating Principles

Australasian Centre for Rail Innovation (ACRI) provides independent applied research, strategic analysis, and innovative solutions for the Australasian Rail Industry on significant challenges and opportunities affecting Rail today and into the future.



Australia has an estimated 33,168 kilometres of operational heavy railways, which carry a significant passenger and freight load. In 2015/16 there were 682 million passenger journeys undertaken on urban heavy rail and over 413 billion net tonne kilometres of rail freight transport.

In 2017/18 there were 104 fatalities recorded by the Office of the National Rail Safety Regulator, 87 of which were suspected suicide, and 44 collisions at railway crossings recorded between trains and either road vehicles or pedestrians.

New Zealand's national rail system has 3,350 kilometres of operational heavy railways. In 2015/16 passenger trains covered 22 million kilometres and freight trains covered 14 million kilometres in urban and regional areas.

ACRI's collaborative structure unites private and government entities from Australia and New Zealand involved in the oversight and operation of heavy haul, freight and passenger rail services. Importantly this includes mining operators in the Pilbara as in 2015/16 iron-ore movements in that region of Western Australia accounted for approximately 64 per cent of total national rail freight.

In terms of investment, the rebuild following the 2016 Kaikoura earthquake was one of the largest rail infrastructure projects in New Zealand in over 70 years and Australia has commenced its largest ever freight rail infrastructure project, the 1,700km Inland Rail line.

The Role of the Australasian Centre for Rail Innovation

ACRI operates within a rail sector which includes an industry association, standards developer and safety regulator as well as federal, state and territory entities with oversight of rail. All of these bodies have an interest in the advancement of rail innovation but it is not their core objective. In addition there are academic research centres with specialities within rail with ACRI being the collaborative, non-profit entity that utilises such expertise.

In delivering its principal objective ACRI aims to be the innovation leader for the Australasian Rail Industry.

ACRI considers innovation to be the key to a more successful future for the Australasian rail sector. ACRI aims to be a champion of the innovation process and defines innovation as:

- » **Creating value for rail from the identification, informed investigation and implementation of ideas and technologies new to the rail industry.**

In providing leadership, ACRI aims to be active in informing forward positioning for the Australasian Rail Industry including:

- » Horizon scanning for emerging technologies and their potential for rail
- » Presenting pathways for industry response to emerging ideas and technologies
- » Opportunities for wider industry economic impact research in addition to technical issue solving

A key aspect of ACRI is its collaborative basis. Its Participant base connects both Australian and New Zealand private and government sector entities in a shared intellectual property research program. ACRI's research management process is also founded on group issue identification and project stage endorsement. ACRI facilitates research addressing the shared needs of multiple rail industry parties, where the greater industry benefits are through collaboration rather than separate investigations.

ACRI also collaborates internationally, fostering relationships and knowledge transfer with entities involved in rail research. This not only informs the currency of the ACRI research program but a pathway for resource maximisation through adapting international developments and potential joint projects.



ACRI's Strategic Objectives

ACRI operates by a series of agreements with entities from across the sector, called Participants. Participants join ACRI as part of Research Programs, presently heavy haul, level crossing, and passenger rail and freight. The Research Programs that form the central part of the ACRI model allow organisations to pool their resources thereby improving outcomes for the entire sector and supporting the wider reform agenda.

ACRI's strategic objectives - **safety, efficiency, connectivity and sustainability** - are aligned with the relevant national priorities for Australia and New Zealand.

The ACRI Research Programs for the period 2018/19 to 2020/21 seek to advance:

S

Safety – reducing risk and reducing injuries across the sector.

- a. Improving worker safety
- b. Improving passenger safety
- c. Improving public safety

C

Connectivity – improving access and integration

- a. Improving interoperability with other transport modes
- b. Connecting transport with urban planning and design

E

Efficiency – driving continual improvement

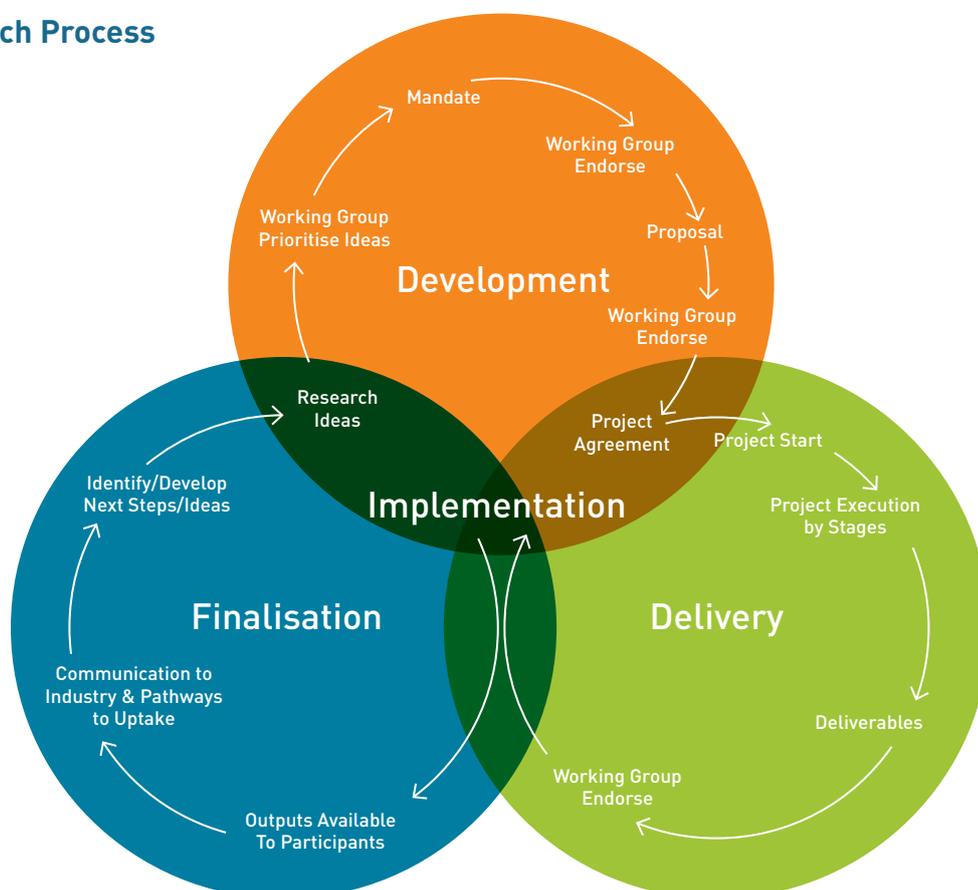
- a. Delivering greater value in investment and operation
- b. Improving productivity

S

Sustainability – advancing environmental viability

- a. Improving system resilience and security
- b. Improving environmental performance
- c. Improving financial and economic viability

ACRI Research Process



Participating in ACRI

The exact nature of the research or strategic analysis undertaken is determined collectively by Participants within the Research Programs to ensure that Participants have the ability to direct research and strategic analysis towards areas of greatest need or interest to their organisations.

ACRI does not have a fixed membership fee with Participant contributions directed to Research Programs. ACRI Participant contributions range in size though all are for a minimum of three years and adjusted annually for CPI. There is an administration and project management fee attached to all projects to support ACRI corporate operations.

ACRI's research facilitation is not limited to current Participants and it can also undertake commissioned work for non-Participants. Non-Participants may also under arrangement contribute to collaborative ACRI projects.

To deliver the agreed research projects, ACRI has established agreements with a number of Australian universities and research providers, called Strategic Research Participants. They participate in ACRI to mutual benefit, providing a pricing structure and other in-kind support that reflects the not for profit, public good status of ACRI and assisting with maintaining research expertise in ACRI's areas of operation.

To maintain ACRI's position as the innovation leader in the rail sector ACRI will:

- » Source and introduce concepts and technologies from outside the rail industry for Working Groups to consider for potential rail research initiatives and application.
- » Regularly engage with Working Groups regarding ACRI's strategic direction and require reporting from Working Groups to the Board on how the Research Programs are relating to ACRI's strategic objectives including the pursuit of innovations from outside the rail sector.

Review of ACRI's Longer-Term Strategic Objectives

ACRI's longer-term strategic objectives and their relevance to ACRI Participants and Australasian transport sector priorities will be reviewed after a three-year (2020/21) and five-year (2022/23) period.

ACRI Interaction with Other Sector Bodies

As the innovation leader for the rail industry ACRI must have a clearly understood role and relationship with other sector bodies.

Advocacy/Lobby Groups - Independence is critical in achieving acceptance of ACRI's research and strategic analysis outcomes. ACRI must remain politically impartial and maintain its reputation for independent research.

Advocacy groups are an active part of the rail and wider transport sector and there are benefits for the rail industry in ACRI having working relations with such bodies, accompanied by a clear understanding of separate roles.

Standards - ACRI will undertake research and economic analysis on issues and improvements highlighted by its Participants, which may in turn inform the development or prioritisation of standards by the relevant body such as RISSB. To aid this, ACRI will aim to foster regular communication with RISSB to avoid duplication.

Manufacturing - The benefits of ACRI projects may include contributing to improved manufacturing outcomes, however ACRI will not seek to directly establish manufacturing-centred groups or work programs.

With sector bodies already established in this area, it is the role of ACRI to ensure a productive and mutually beneficial relationship is developed with sector bodies charged with the delivery of manufacturing outcomes.

International Entities - ACRI has, and may continue to, enter into memoranda of understanding with international and domestic bodies within the rail and wider transport sector where they are judged to be of sufficient benefit to ACRI Participants. This level of cooperation prioritises information sharing and ensures that the dialogue is formally organisation to organisation rather than based on individual relationships.

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