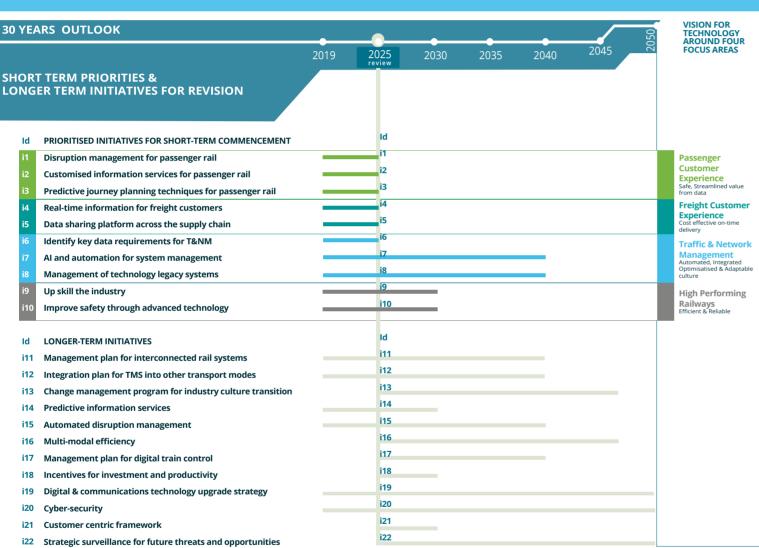


SMART RAIL ROUTE MAP













Acknowledgement: A key input of the Rail Manufacturing Cooperative Research Centre-funded project – R3.3.2: Development of a Smart Rail Route Map. The Rail Manufacturing CRC is funded jointly by participating rail organisations and the Australian Federal Government's Business Cooperative Research Centres Program.

The Route Map project is about addressing a fundamental need in Australia... it is about creating a foundation to allow the rail industry to be prepared for change and to be able to be more adaptable, more flexible and more capable of rapidly adopting technology in terms of standards, protocols and skill requirements.

> ofessor Doug Creighton Deputy Director – Institute for Intelligent Systems Research and Innovation, Deakin University





With the ever-increasing rate of technological change in our industry, it is difficult to accurately predict how our industry will look in 30 years from now. We can, however, prepare for these inevitable changes which will put the rail industry in a stronger position to adapt to them when they occur.

The Smart Rail Route Map has a 30 year horizon, and identifies a longterm common view of priorities, themes, timelines and actions.

It embodies industry's commitment to ensure the rail industry does more to prepare for and proactively manage change and improve our ability to adopt, deploy and keep pace with changes in the future.

Technology is the key to getting more out of the assets - there are a huge amount of assets in the rail industry and without a technology route map we won't have the direction we need to ensure the technology is optimised and industry gains the maximum benefit.

> Puui Harris
> Chair, ARA Telecommunication: Committee; Principal Engineer Public Transport Victor



Developing a long-term vision for the Australian Rail Industry

The Smart Rail Route Map is an industry-owned and industry-driven initiative, spearheaded by the Australasian Railway Association and the Rail Manufacturing CRC, being developed by Deakin University's Institute for Intelligent Systems Research and Innovation.

The Smart Rail Route Map outlines a series of objectives and initiatives to address key challenges for the rail sector over the next 30 years. In effect, it provides a framework through which next generation rail technologies can be integrated and supported efficiently in the Australasian rail environment.

It is a strategic framework to support the adoption and deployment of digital and communication technologies in the rail industry and will provide a basis for defining the rail industry direction, development initiatives and research programs.



DEVELOPED BY INDUSTRY. FOR INDUSTRY.

Smart Rail is

important because it

has been a collaboration

of all parts of the rail

industry and it sets out how we

are going to embrace the latest

technology. It is also important

because it sets out some important

objectives and initiatives and timescales with those, and so it is

a very concrete piece of work.

Australasia Rail Business Leader,

ARA Board Member

High level priorities

Smart Rail maps ten programs, actions and initiatives which industry members have identified as high-level priorities for development. These short term programs, actions and initiatives are structured against four focus areas: Passenger Customer Experience; Freight Customer Experience; Traffic and Network Management and High Performing Railways.

- **Disruption management for passenger rail:** *Communicating effectively with customers during disruption.*
- **Customised information services for passenger rail:**Developing information services to passengers.
- **Predictive journey planning techniques for passenger rail:** *Providing journey listing options for current and future travel.*
- **Real-time information for freight customers:** Supporting the ability of freight customers to secure on time delivery and to track and trace their location using the Internet of Things.
- **Data sharing platform across the freight supply chain:** *Implementing a data sharing platform across the industry.*
- **Identify key data requirements for traffic and network management:** *Defining what information and knowledge can be developed from data.*
- **Al and automation for system management:** Working towards industry agreement on the adoption of a global approach for a standard data exchange and formatting.

Harmonisation is
critical to the future
of the rail industry,
particularly in the digital
age and the development of
SMART RAIL is an important step
in bringing efficiencies and improved
productivity across the rail industry
at a time when change is rapid
and pronounced.

Paul Daly Chief Executive Officer Rail Industry Safety and Standards Board (RISSB)

- Management of technology traffic and network legacy
- systems: managing the transition to new digital technologies.
- **09 Upskill the industry:** A staged program to up-skill the industry.
- 10 Improve safety through advanced technology: A program to introduce new technology systems that facilitate early detection of safety threats and an early response.

Potential Benefits

The key to Smart

Rail is that it is an

industry-led initiative

involving a large cross

section of the rail sector.

Collaboration of this kind is the

first step to ensure the outcomes

of Smart Rail are implemented

and will add value to

Australasia's rail industry.

Chief Executive Officer



freight customer cost-effective services and on-time delivery

harmonised and integrated public transport systems that enable seamless end to end journey

cost effective and efficient customer centric operations

smart asset management and maintenance

workforce digital and technological skills and competencies

Smart Rail is a fundamental initiative that will allow the rail industry to come together, collaborate on some really important issues and to lay some critical foundations for the digitalisation of the industry moving forward.

Director, Centre for Supply Chain & Logistics, GS1 Australia



The ARA has held a number of industry workshops throughout 2018 to develop the Smart Rail Route Map, with more than 250 people taking part. This has included the 2018 Telecommunications and Technology Forum, where delegates and speakers provided feedback on the draft report.

The Smart Rail draft interm report is being released at AusRAIL 2018 to provide industry with a further opoprtunity to provide their input, feedback and comments. Following this, the ARA will establish an Executive Committee to priortise the actions and initiatives for ongoing development and implementation.



