POLICY WEBINAR

Keeping workers safe: How digitising risk can protect our work zones

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James Pennings
Altus Traffic

Angus McDonald
Compass IoT

Roger Poeth
Highway Resource Solutions

Sam Mason
Nearmap

About Roads Australia

Roads Australia (RA) is the peak body for roads within an integrated transport system, representing an industry that contributes $236 billion annually to the economy and supports 1.4 million jobs.

RA brings industry, government, and communities together to lead the evolution of Australia's roads, integrated transport and mobility.

RA's members include all of Australia's state transport agencies, road operators, major contractors, technical and strategic consultants, material suppliers, service and technology providers, and other relevant industry groups.

Event Summary

177 people registered for the event to hear from the following speakers:

Angus McDonald, Co-Founder, Compass IOT

Roger Poeth, International Business Development Director, HRS

Sam Mason – Senior Solutions Engineer, Nearmap

The panel discussion was moderated and sponsored by James Pennings, Chief Commercial Officer, Altus Traffic Australia

Key Points

- Technological advances are providing the transport sector with new methods to improve road safety outcomes.
- Data can create a deeper understanding of individual road work sites, improving safety and traffic management processes.
- Effective use of data leads to more efficient traffic management and mitigates the impact of unforeseen risks.
- Technology collaboration between industry and transport agencies has the capability to create safer work environments.

Questions to take away

- What opportunities are there for transport agencies and industry to share data and improve outcomes for road safety workers?
- How can data be incorporated into everyday practice to create a more efficient road asset management system?
- What international technologies can be adapted to improve road worker safety outcomes in the Australian context?
- How can existing and emerging data pools be used to ensure traffic management plans are localised and holistic to specific environments, thereby enhancing road worker safety?

Digitising road safety

National Road Safety Week is a timely reminder of the importance of improving safety outcomes throughout the industry.

With rapid progress in data technology and artificial intelligence, new opportunities are rapidly developing to incorporate digital information across the transport sector, increasing road and road worker safety.

Innovative research and development from across industry is replacing analogue systems, practice and ways of thinking to drive solutions and make improvements to the road network, maintenance and safety.

Presenters outlined how their organisations are developing new products to fill gaps in the market, from gaining a better understanding of traffic flows, maximising efficiency in traffic management and enhancing safety on work sites.

Data's role in road worker safety

Effective data usage has the potential to increase productivity while simultaneously placing an increased focus on safety.

Presenters all outlined unique products being developed and enhanced to address specific problems and opportunities in the road safety industry.

Angus McDonald outlined how **Compass IoT** is collaborating with car manufacturers to build data sets through real time monitoring of driver behaviour across the road network. Through the collation of steering and braking data, bottlenecks on major roadways, dangerous stretches of roads and driver behaviour around road work sites can be observed to proactively identify areas of concern and sites where safety upgrades are required.

Creating safer work sites relies on a strong understanding of inherent risks, including unsafe behaviours, hazards and near misses, traditionally either unreported or underreported. The data collection technology of Compass IoT can be used to identify hazardous roadways and the effectiveness of traffic management plans through an understanding of driver behaviour in altered traffic environments.

> *"Misses are an indicator of risk. We can isolate those behaviours before a crash occurs."*
>
> - Angus McDonald, Compass IoT

In a similar vein, **NearMap** is employing AI to identify 72 different categories of physical infrastructure, through aerial imagery, from tree canopies to pedestrian crossings, providing a high level, remote overview of the road network.

> *"Every pixel is timestamped, and that gives us a unique online digital history,"*
>
> - Sam Mason, NearMap

With Compass IoT technology gathering evidence for network upgrades, NearMap allows road safety workers to undertake traffic management plans remotely, minimising time on site and tailoring plans to the individual environment.

Once road worker sites are established, and traffic management plans are put in place, the technology developed by **HRS** helps monitor traffic near a work zone and keep workers safe from dangerous incursions. By creating digital incursion zones through the use of on-site devices and laser technology the system is able to provide live reporting of on-site safety and motorist behaviour around work sites as

well as provide audio alerts from potential incursions.

While each organisation is working on a different aspect of road safety, from identifying network constraints, to creating safer work sites, data will play an increasing role in improving road safety outcomes and driving efficiency.

Creating holistic safety plans

AustRoads guidelines provide direction on best practice at road work sites, however, every environment is unique, with traffic management plans needing to adapt to individual work site circumstances.

NearMap technology allows for traffic management plans to be developed remotely, taking into consideration submerged risks including gradients, canopies, utility locations and traffic flows before physically attending a work site.

No two work sites are the same and a one size fits all approach to traffic management is liable to create environments where road worker safety is not optimised.

Gaining a strong understanding of the local environment through the effective use of data will ensure holistic safety plans are developed with highly localised understanding of physical infrastructure and driver behaviour.

Supporting road workers with technology when work is occurring is a further step in creating holistic, individualised safety and traffic plans.

Establishing monitored incursion zones is becoming best practice in other jurisdictions, creating smart geozones to automate the interaction of digitally enabled equipment.

HRS started their operations in response to a road fatality in the United Kingdom with the hope that adoption and engagement with data technology on road worker sites will improve worker safety outcomes.

> *"If we can save one life by being able to warn people, then it's worth it."*
>
> - Roger Poeth, HRS

Analogue systems lack the capacity to create high level holistic work sites plans. Data and artificial intelligence are able to assist industry to make better decisions and mitigate risks for road workers.

Integration of data

A clear opportunity identified by presenters was potential for further collaboration between transport agencies and industry to maximise the benefits of high-level data.

In the current environment, data sets from different organisations and the public sector are often siloed, with the full potential of independent technologies unable to be harnessed without synergy between data sets.

> *"There are significant opportunities to leverage data in favour of roadworker and public safety."*
>
> - James Pennings, Altus Traffic Australia

Leveraging data is crucial to improving outcomes for road users and workers.

Presenters provided unique perspectives on the opportunities data presents, from identifying road network issues to understanding work environments at a holistic level and developing individualised work site plans.

To harness the full power of data and artificial intelligence, collaboration and harmonisation of data is required to ensure the safety of road users and workers is enhanced.