

T E N T H A N N U A L



ITS Australia  
National Awards  
2019

Australia's ITS industry  
celebrating success and innovation

Hosted by



21 November 2019 | Adelaide AUSTRALIA



# ITS Australia National Awards 2019



## Automated Vehicle Award Sponsor



## Hosted by



## **ACKNOWLEDGEMENT**

ITS Australia would like to thank the nominees for their participation in the ITS Australia National Awards program and acknowledge their contribution of project descriptions and images for this Awards Book. This book contains a selection of nominations received.

# Welcome from the Chair



Gino Dompietro

The ITS Australia National Awards recognise exceptional work in Australia's ITS industry and this year's event is particularly special because it is the 10th time that we have gathered together to recognise and celebrate not just the outstanding contribution of our award winners but also the achievements of all the contributors to the growing success of our sector. We can all be proud of the part we have played in helping to develop a very healthy industry as evidenced by the increase in award submissions, both in number and in quality, year after year.

It is also appropriate in this 10th year of "the awards" as they have come to be known, that we reflect upon and recognise the enormous contribution that ITS Australia itself has played in the success of our industry. ITS Australia is a collective of transport technology professionals. ITS Australia is my colleagues on the Board of Directors, it is the many exceptional people who sit across our committees and our reference groups, it is our dedicated and incredibly professional management team in Melbourne. It is our event speakers, and sponsors, and exhibitors, and attendees. Most of all, ITS Australia is its members. We are all part of a nationwide network of ITS professionals, working together to ensure that the Australians of tomorrow are all able to travel through the nation's transport networks more efficiently and more safely than they did today. That is something well worth celebrating.

Each year the Judging Panel faces the challenge of shortlisting the nominees from all the outstanding submissions received, this year that was no small task. For the first time we have seven nominees for the Young Professional Award, reflecting the incredible wealth of up and coming talent in the industry. The Award gives next-generation ITS professionals the opportunity to learn more about the industry and develop their skills. The winner will be provided networking opportunities with peers across Asia Pacific and they will attend the ITS Asia Pacific Forum next year in Brisbane.

The Automated Vehicle Award is now in its third year, sponsored by the Australian Driverless Vehicle Initiative (ADVII) whom we thank for their support. The Award reflects the continued growth of this sector and recognises the benefits that highly automated vehicles can bring to industry and the community and demonstrates Australia's progress in this area. This year's Industry, Research and Government Awards submissions also showcase outstanding innovation in the Australian ITS industry.

Congratulations and thank you to all this year's nominees for your submissions and continued contribution to the industry. Thank you also to our sponsors for their support of the Awards and to our dedicated Judging Panel for their generous time, commitment and input.

Given the calibre of entries that we received this year, I do not doubt that Australia will continue to lead the world in ITS for a long time to come.

A handwritten signature in black ink, appearing to read "Gino Dompietro".

**Gino Dompietro**

Chair – ITS Australia National Awards Committee  
Principal – Infrastructure Development and  
Financing, Jacobs

# Judging Panel

## Gino Dompietro

Chair – ITS Australia National Awards Committee  
Principal – Infrastructure Development & Financing,  
JACOBS

## Brian Negus

Ambassador – ITS Australia  
Chairman – CICA Group

## Chris Koniditsiotis

President – International Society for Weigh  
In Motion  
Advisor and Consultant – Chris K Phronesis

## Chris Woods

Regional President – Chassis System Control  
Division, Bosch Australia and New Zealand

## Gillian Miles

Chief Executive – National Transport Commission

## Ishra Baksh

Executive Director (Mobility as a Service Program  
Management Office) – Office of the Director-  
General, Department of Transport and Main Roads

## Michael Watts

Director – Strategic Projects and Partnerships,  
Transmax

## Rita Excell

Executive Director – Australia and New Zealand  
Driverless Vehicle Initiative (ADV1),  
Centre of Excellence

## Soren Tellegen

Executive Vice President Asia Pacific –  
Kapsch TrafficCom Australia

## Tom Walker

Senior Vice President and Managing Director –  
APAC, Cubic Transportation Systems





# Award Categories

## Government and Industry Awards

Both the Government and Industry Awards recognise excellence in an organisation that has developed or deployed a significant and innovative ITS system, product or service over the course of the previous year which has fostered advancement of ITS in the region. Furthermore, the recipient of each Award will be considered for nomination by ITS Australia for the prestigious ITS World Congress Hall of Fame Award, representing the Asia Pacific region which is presented at the World Congress the following year. Recent nominees who have gone on to win the Hall of Fame Award are Queensland Department of Transport and Main Roads in consecutive years 2015 and 2016 and Transport Certification Australia in 2013.

## Automated Vehicle Award

This Award is to recognise excellence from an organisation that has initiated, developed and/or delivered over the previous year a new and innovative piece of research, product, program, service, legislation, business model or other innovation or achievement that has, or will, play a key role in accelerating the safe and successful introduction of driverless vehicles on Australian roads. This Award is sponsored by the Australia and New Zealand Driverless Vehicle Initiative.

## Research Award

The Research Award recognises excellence in a university or research institution whose research outcomes demonstrably advance the state of the art, and/or generate new knowledge and thus further developing ITS in Australia and overseas. The Award recognises the institution's leading role in the community, whose research outcomes have the potential for efficiency and safety benefits to society, and that will have a positive effect on the community and environment.

## Young Professional Award

This Award recognises a young professional who is making a positive contribution to the ITS industry and is demonstrating a passion through their studies and early professional life. ITS Australia will support this year's recipient to attend next year's ITS Asia Pacific Forum to further develop their industry knowledge and global network.

The Young Professional Award is sponsored by ITS Australia.

## Max Lay Lifetime Achievement Award

The prestigious Max Lay Lifetime Achievement Award recognises an individual who personifies achievement of the ultimate standard for a leader in the ITS field and in the organisations they have led. The Award recognises that they are a champion of vision of ITS and its fulfilment within the community. The Award is named in honour of Dr Maxwell Lay (AM), an Australian pioneer and ITS researcher, engineer, project implementer and passionate advocate for advancement of ITS. This highly regarded Award is considered by the ITS Australia Board of Directors, and awarded to acknowledge the achievement of an ITS industry leader.

This year we congratulate Brian Smith as the recipient of the 2019 Max Lay Lifetime Achievement Award.

# 2019 Max Lay Lifetime Achievement Award Recipient



Brian Smith

This year's recipient of the Max Lay Lifetime Achievement Award is Brian Smith.

Brian is a leader in the advancement of Australian navigation technology. In 1995 he played a major role in developing the first digital navigation map available in Australia. Then in 2000, Brian played another key role in the transition of White and Yellow Pages to online electronic directories, which changed the way we access location-based content today.

For 14 years Brian contributed to the industry as part of Intelematics, where he launched Australia's first RDS-TMC digital traffic service in 2007. Today this service is known as the SUNA Traffic Channel and provides a rich source of traffic congestion and incident information to more than 17 million Australians and 2.5 million New Zealanders.

Brian is a pioneer of the ITS industry and, through his work, has sought to facilitate collaboration between industry, government and academia. Brian played a key role in gaining government funding to roll out an Australian automotive industry cooperative innovation program. This program saw Intelematics and ITS Australia working with Sensis and GM Holden, to roll out shared navigation location data tables across Australia. This project was one of the first instances of government and the automotive industry coming together to improve the future of our transport network through technology.

In 2016, Brian Co-Chaired the Programme Committee at the ITS World Congress in Melbourne, significantly contributing to the event's success. He advocates for bringing all forms of transport together – intelligently – to build a better future. Brian is a very worthy recipient of the Max Lay Lifetime Achievement Award.



# SAGE's Autonomous Vehicle Ecosystem

## Submitting Organisation

SAGE Automation

## Project Description

The safe and successful introduction of driverless vehicles requires an ecosystem that is structured with strong engineering principles. SAGE has developed an ecosystem that allows the structured testing and validation of driverless technology in a safe environment with a systematic approach with a clear strategy for a smooth introduction. This ecosystem provides a structured low speed and low-risk introduction of AVs, and is highly organised by strong engineering principles taking the critical nature of the outside ecosystem into account.

The structured ecosystem integrates various systems, including the Matilda smart transit hub, cloud services (online booking, data storage, monitoring), road authority systems and infrastructure that has the ability to be expanded on in order to support all priorities for the preparation of driverless vehicles in Australia including safety, acceptance and data gathering.

This fully connected ecosystem takes the critical nature of the outside ecosystem into account allowing communication from vehicle to vehicle and vehicle to infrastructure while considering pedestrian movements and intent. Incorporating valuable elements including pedestrian detection units that feed data back to road authorities and data storage centers, this trial approach enables trial operators to plan around the outside ecosystem. Matilda enhances the transport experience by providing valuable information regarding the ecosystem including the location of the AV, alerts regarding connecting transportation, weather updates as well as surrounding tourist attractions and eatery recommendations. Matilda makes transport fun and accessible.

Currently, we collaborate with clients to realise the future stack they seek, as well as recently signing an MOU with the Royal Society for the Blind which has enabled SAGE to tailor technologies for the future with inclusion for all. The modular design of the eco-system allows for full scalability and multiple units to be deployed.



# Transurban Partially Automated Vehicle Trials – Queensland, New South Wales and Victoria

## Submitting Organisation

Transurban

## Collaborating Partners

Queensland Department of Transport  
and Main Roads

Transport for NSW

Department of Transport

## Project Description

This multi-year, multi-jurisdictional, trial program concluded this year, identifying almost 15,000 observations of instances where partially automated vehicles from 9 different OEMs had challenges with specific features of local motorway infrastructure. The associated recommendations highlight changes that can be made by road owners/operators, the broader roads sector, and the automotive industry, to ensure safe adoption of these vehicles, as a precursor to more highly automated vehicles. As well as sharing results within the industry, outcomes have also been publicised more broadly, building awareness around the limitations of partial automation and the need to maintain control while using driver assistance features.

As a smaller market without local vehicle manufacturing, Australia is typically dependent on vehicle technology from overseas. These trials highlighted several important issues that are more specific to our local motorway conditions, including differences across our jurisdictions within Australia. Providing detailed feedback to the engineering departments of participating automakers helps ensure that their vehicles are better adapted to our local conditions, which is in the national interest.

By using vehicles from multiple OEMs, we identified patterns where several vehicles had the same issue at the same location on the road network, allowing us to focus more specifically on those locations for further investigation. Expected long-term benefits from adoption of CAVs include improved safety and efficiency of road use. In the near-term, before there is large-scale adoption of more highly automated vehicles, we expect a significant increase in partial automation as many new vehicles are now including these features.

Our approach in conducting the trials is scalable – we have repeated the approach across Victoria, New South Wales and Queensland, and the approach has already been used by selected partners in further trials.





# Connected and Automated Shuttle

## Submitting Organisation

The University of Melbourne

## Collaborating Partners

CISCO

Cohda Wireless

Department of Transport

## Project Description

In this project we have created a new capability to an autonomous shuttle by adding DSRC connectivity as well as edge computing to allow sensing the environment in a much better way and communicate with road infrastructure (fixed sensors as well as signal control). By doing this we could enhance the safety of the AV where vehicle sensors could not sense an object (for example, pedestrian on a blind corner).

Rather than the traditional vehicle-centric approach, this project demonstrated an infrastructure-centric approach, where threats to vulnerable road users and autonomous vehicles was assessed in the infrastructure and communicated to the autonomous shuttle. We showed how distributed intelligence and data fusion at infrastructure led to improved insight

of impending events with real-time notification and alerting that enhanced the safety and operation of autonomous shuttle in dense urban environment.

This will significantly enhance the safety of autonomous shuttle to operate in dense urban environment which in turn could expedite the introduction of such service in urban environment. Vehicle-centric CAV applications are challenged in three areas: location accuracy, sensor fidelity and cost. We have showed that it is possible to address these issues by using infrastructure-centric CAV applications combined with realtime data from multiple sources which can lead to an earlier detection of impending events and notification and hence improved safety.

The project has the potential to further commercialise the developed prototype solution to be embedded in autonomous shuttle. The solution developed is totally scalable and transferable to any place around the world. The unique use of edge commuting and distributed intelligence from the road side device such as intersection signal and communication devices such as CITS DSRC is a unique way to enhance the safety and operation of autonomous shuttle.



# FLEX Autonomous Shuttle Trial

## Submitting Organisation

Flinders University

## Collaborating Partners

Department of Planning Transport and Infrastructure

Royal Automobile Association of South Australia

SAGE Automation

UPG

Keolis Downer

Renewal SA

Cohda Wireless

Telstra

Zen Energy

## Project Description

The Flinders Express (FLEX) Autonomous Shuttle trial was the first to launch in South Australia in June 2018. Being one of the first deployments of autonomous vehicle technologies in the country it was very important "to get it right". Preparation for deployment through combination of strict safety testing during commissioning, followed by a staged approach to on road testing, then final deployment has established a framework that is now used around the nation. In addition the operational lessons learned from this project

in terms of incident management and booking systems has also been used in many deployments around Australia.

FLEX is still today one of only a few in the world to have a real use case of first / last mile transport services on public roads. FLEX will pick up or set down passengers at the train station or bus stops and shuttle them to nominated four stops within the trial. This innovative real-world application of the technology differentiates it from other trials and allows for the first time planning of complementary autonomous feeder services for mass transit in other areas.

After over a year of trialling it has become obvious that the biggest benefit widespread adoption of autonomous shuttle services can have on the Australian community is to provide accessibility and mobility services for those who currently do not have them. The FLEX survey data has clearly shown that providing these services to the elderly, disabled, those without a drivers licence and the young can lead to improvements in independence and well being.

The FLEX trial provides a base data set that can be used to calibrate and validate models of autonomous vehicle implementations anywhere in the world. With these models an evidence base can be built up to answer and justify their use as a complimentary public transport service.





# Autonomous Mobility as a Service to Enhance Life in Retirement Villages and Aged Care

## Submitting Organisation

Aurriko

## Collaborating Partners

Lendlease (Elliot Gardens)

Department of Planning, Transport and Infrastructure

Regional Development Australia – Adelaide Hills, Fleurieu and Kangaroo Island  
Global Centre for Modern Ageing



## Project Description

The opportunity to experience and accept driverless technology by the residents in their familiar, local environment demonstrated how autonomous vehicles can provide an attractive and safe transport option to contribute to maintaining independent living. For an ageing population in an environment of rapid technological developments, particularly for transport due to climate and energy factors, this work is highly relevant to gaining acceptance of autonomous vehicles by a large sector of the population who have not had exposure to new technologies. As lifestyles, care and mobility models change for ageing Australians, established norms will be challenged, so it is important that this sector understand and embrace the opportunities

autonomous vehicles will provide in supporting independent living and maintaining social networks.

The trial explored the relevance, acceptance and usability of the technology by senior citizens with a perceived cautious approach to new innovations. This was innovative for its focus on social, well being and lifestyle within a community rather than a public commuting or commercial service. It also demonstrated that it can be achieved safely, reliably and pollution free. In a situation where linkages can be made to other transport infrastructure and services, it brings into question the need for aged people to own a vehicle, it frees up space otherwise allocated to parking or garaging and maintains independence in the event of loss of a drivers licence.

This work is highly relevant to retirement living, aged care or mobility impaired populations anywhere in the world. The learnings by Aurriko combined with an independent research project by the Global Centre for Modern Ageing are being used by our UK and Canada offices to create and deliver services in other locations and to customise our product features. It bridges the gap across generations and illustrates the relevance of the innovation to everyone, young and old.



# BusBot – An On-Demand, Shared Automated Vehicle Pilot for Regional Public Transport

## Submitting Organisation

Busways

## Collaborating Partners

Transport for NSW

Coffs Harbour City Council

EasyMile

Via

Papercast

## Project Description

BusBot is the first Australian study of driverless buses in regional communities, carrying more than 6,000 passengers aged from 1-103, gaining international interest, and proving a use-case providing real value to the elderly. Project development, safety assurance and operation were successfully led by Busways and collaborating partners, developing a sustainable business model and blueprint which can be scaled to multiple operations around the country to accelerate the safe introduction of AVs onto Australian roads. BusBot's capabilities were proven through three-phases of increasing complexity, passing all safety tests and providing evidence to show AVs do have potential for regional Australian transport.

BusBot identified gaps and necessary modifications in regulatory framework; established and tested optimum partnership models to successfully implement AV; and introduced AVs to Australian regional communities, encouraging public participation to achieve regional community acceptance – a critical factor identified in the Federal Government's 2017 "Social issues relating to land-based automated vehicles in Australia" report. Learnings from Phase 2's retirement village setting explored how AVs would be accepted by and improve the lives of elderly Australians. BusBot also provided a practical test-case for councils across Australia on how AVs may share local roads to service a range of use cases.



BusBot is Australia's first regional AV trial and most notably delivered:

- The first AV deployment in the world in an independent living village in conjunction with an on-demand smartphone app – testing attitudes, willingness-to-use and value-case for door-to-door on-demand AV services in older communities.
- The first global AV service to operate in conjunction with solar-powered digital-displays at bus-stops, to improve real-time customer information and the customer experience, reassuring customers about the technology.
- Planned to achieve world-first full autonomy trial in a public arena with public passengers, with no attendant on-board (Phase 3 – Sep-Dec 2019).

The BusBot project has driven collaborative outcomes between government and industry partners including smart bus stops, app integration, supplying and operating the vehicle and engaging the community.



# Cooperative and Highly Automated Driving (CHAD) Pilot's Connected and Automated Vehicle (ZOE2)

## Submitting Organisation

Queensland Department of Transport and Main Roads

## Collaborating Partners

Centre for Accident Research and Road Safety – Queensland (CARRS-Q)

iMOVE CRC

Motor Accident Insurance Commission

## Project Description

The CHAD pilot delivered a prototype Level 4 Cooperative and Automated Vehicle (CAV) known as ZOE2, built by VEDECOM Institute (France). ZOE2 successfully adapted to existing infrastructure as it travelled, in automated mode, in actual traffic conditions at speeds of up to 50km/hr, for approximately 6km. ZOE2 navigated several roundabouts, intersections, turns and up/down hill terrain, using its on-board navigation, perception and supervisory systems.

Through the build and delivery of the ZOE2 vehicle, the initial demonstration and future research work packages, TMR and partners are trying to understand these new risks and contribute to the national conversation about wider connected

and automated vehicle implications. Utilising an existing relationship between CARRS-Q and VEDECOM Institute, the build of this vehicle was collaborative, and not the purchase of an 'off the shelf' product. The vehicle was built with on-site support from staff from CARRS-Q and TMR, allowing for hands-on training in the operation and maintenance of the final vehicle. This is a unique skill for Australian researchers to obtain, and enables transfer of knowledge and upskilling to local industry.

The focus of the CHAD program is safety, in particular how government can contribute to the safety of automated vehicles, and how cooperative systems can improve automated vehicle safety. Following the demonstration of ZOE2, a white paper is being produced discussing ways to streamline the import of automated vehicles, application for permits and Australian build considerations so others can learn from our developments for their own trial and pilot programs.

ZOE2 is a unique research vehicle allowing for direct access to all automation systems data for analysis and review, providing a unique opportunity for research organisations and road operators to access this raw data.



# Reducing Congestion Duration from Serious Incidents

## Submitting Organisation

Queensland Police Service

## Collaborating Partners

Queensland Department of Transport and Main Roads

## Project Description

Traffic congestion imposes a significant cost on the community in terms of efficiency, reliability and productivity. The Queensland Government has been working to develop innovative solutions to reduce the impacts of congestion, particularly reducing the duration of crash related congestion. Recently Queensland Police Service (QPS), in collaboration with Department of Transport and Main Roads, identified several methods to expedite the clearance of serious crash scenes. The QPS Forensic Crash Unit (FCU) trialled using innovative drone technology, marked police motorcycles and body worn cameras to improve response times, investigation times and clearance/restoration of traffic flow at critical incident scenes. An evaluation of the FCU motorcycles and body worn camera trial delivered clearance times 34 minutes faster than traditional clearance times.



Using drones and motorcycles to expedite serious crash scene clearance times has allowed the traffic manager to estimate the length and severity of congestion impacts and use existing ITS technologies to help manage congestion. While the use of drones in Queensland isn't new their use in FCU provides an innovative service improving traffic management and providing a safer transport network through the reduction of secondary incidents. Scene mapping is critical to all serious crash investigations, but also a major contributing factor to road closure time. Using drone technology to map crash scenes, the Forensic Crash Unit has reduced scene mapping time by 50% reducing road closure times and traffic congestion, while also improving the quality of evidence captured at scenes.

It also alleviates some of the social and economic impacts of traffic crashes on Government, business and community by improving the timeliness of investigation and the quicker clearance critical incident crashes in South East Queensland.





# QLDTraffic Cassowary Sighting App: Increasing TMR Awareness and Knowledge of Cassowary Interaction with the Road Network

## Submitting Organisation

Queensland Department of Transport  
and Main Roads

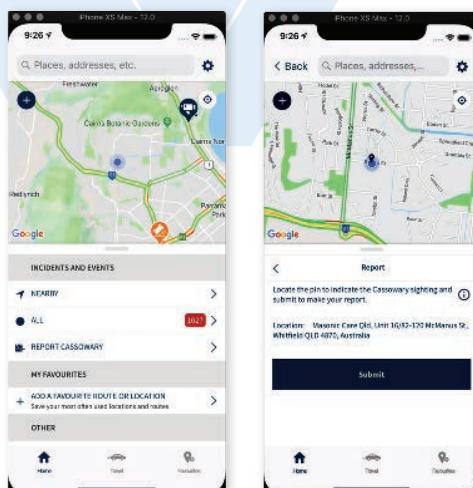
## Project Description

The use of this type of application, combining road condition information with wildlife safety is a Queensland first, although similar functionality focused solely on the transport network has been implemented previously. The Cassowary 'report in' functionality is designed within the existing QLDTraffic application and using geo-fencing to only activate required icon when the operator is within the Cassowary Coast (Innisfail to Rungoo), Cairns, Yarrabah and Cape York regions. This will enable general public to report in a Cassowary sighting and then have that information broadcast via the QLDTraffic suite (location specific). This will help promote awareness with nearby drivers that there are cassowaries around. The warning will prompt road users to drive with care.

This application showcases the ability to provide real time, crowd sourced information that can leverage off road authorities existing datasets and application to ensure a more robust information share into the connected future.

Cassowary management, and their interaction with the road network is an increasing concern for the Cassowary Coast (within Far North District). Death of cassowaries from motor vehicle strikes, is a growing concern as it is their largest known killer within the Cassowary Coast local government area.

As an endangered species, the Southern Cassowary is an important part of the far northern ecosystem and plays a contributing role with tourism to North Queensland. Each cassowary is reportedly worth over AU\$1m to Queensland Tourism.



# Hold the Red: Innovative Intersection Crash Avoidance System

## Submitting Organisation

Queensland Department of Transport  
and Main Roads

## Collaborating Partners

Queensland Police Service

## Project Description

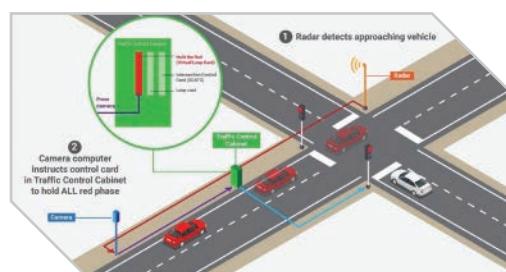
The use of this system in Queensland is an Australian first, although it has previously been trialled overseas in Jacksonville, Florida. Hold the Red (HTR) is installed into the Traffic Controller Cabinet at signalised intersections, using a virtual loop card. It uses radar to track the movement of each vehicle approaching the intersection up to a distance of 150m from the stop bar. If HTR predicts that a vehicle will not stop in time at a red signal, it will instruct the signal controls to extend the all-red phases by an extra two seconds. This delays other vehicles or pedestrians from entering the intersection from the adjacent direction, mitigating the risk of a collision with the red light running vehicle.

HTR represents a new approach in smart infrastructure at signalised intersections, emphasising crash prevention over enforcement-

based solutions. Previous research has indicated that safety could be improved at signalised intersections by extending the all red phase to lower the likelihood of crashes caused by red light running. However extending the all-red phase at all intersections would be likely to have flow on effects on traffic volume and intersection capacity. HTR uses up to date technology to selectively extend the all-red phase only when it considers that a vehicle is likely to run a red light, thereby improving safety outcomes while minimising the disruptive effect at the intersections.

HTR is currently being trialled at four sites in Queensland, chosen from a list of intersections selected for the installation of Combined Red Light/Speed (CRLS) cameras in 2018. This list comprised sites with the most significant crash history related to red light running over the preceding five years.

CRLS cameras also allow for infringements to be issued to promote behavioural change, while making the intersection safer. HTR technology is capable of being installed at most signalised intersections. TMR is considering a wider rollout to intersections without CRLS pending the results of independent evaluation.





# South Australian Government Future Mobility Lab Fund

## Submitting Organisation

Department of Planning, Transport and Infrastructure

## Project Description

The Future Mobility Lab is a test bed for innovation in transport providing the ideal environment to trial and research first and last mile transport solutions, increase capability in identification and prediction of traffic and consumer patterns, build on connected autonomous vehicle positioning and sensor product expertise in V2X and increase innovation in vehicle safety testing and solutions for interaction with connected and autonomous vehicles on our roads.

The Future Mobility Lab Fund has provided funding to a number of projects to accelerate ITS development and deployment. Projects such as Cohda's V2X and cooperative perception technology and Adelaide CBD V2X test bed, Telstra's V2I LTE project, SAGE custom-built AV traffic control signal at Renmark which allows an autonomous shuttle to cross a dual carriageway, SAGE smart transit hub, AV shuttle trials with Aurigo, EasyMile, Navya and Local Motors, ARUP MaaS readiness project, Aurigo's AV trial at a Pt Elliot Aged Lifestyle Village, Uni of Adelaide AV Safety testing, SAGE Addinsight traffic intelligence system and passenger/pedestrian count project.



Deliverability has included the deployment of first and last mile autonomous shuttles, including: 6 different AV Shuttle trial use cases (high pedestrian, controlled on road environment, complex on road environment, first and last mile PT integration, trial in aged lifestyle village, integration with a smart transit hub, smart AV traffic control signals to allow AV to cross dual carriageway, Cohda CAV and V2X trials and 20 smart intersection Adelaide CBD Test Bed, Telstra V2I trial, ARUP MaaS readiness for South Australia project

Benefits are varied depending on each individual project, the autonomous shuttles have provided the community with first and last mile services with a focus on assisting the elderly and people with disabilities. South Australia is recognized as an environment for innovative technology trials and commercial deployment.



# Thermal Video Incident Detection System

## Submitting Organisation

Torrens Road to River Torrens Project Alliance

## Collaborating Partners

Department of Planning, Transport and Infrastructure

GHD

SAGE Automation

Design Sub-Alliance (Aurecon Mott MacDonald-Wallbridge Gilbert Aztec)

CPB Contractors

## Project Description

**Reliable Incident Detection:** The adoption of highly reliable Thermal Incident Detection cameras improved the reliability and accuracy of TMC's detection system significantly. False alarms have been reduced from typically 350 plus to only 5 per month, allowing better reaction to incidents.

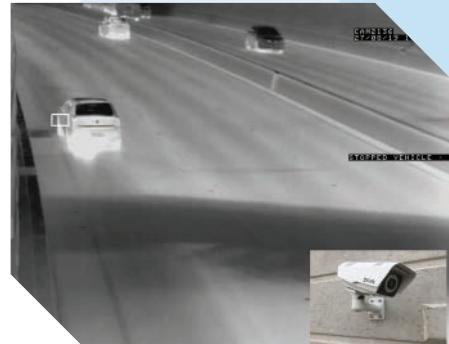
**Reliable Communications Network and ITS Devices:** The design and delivery of a fully redundant optic fibre network and fully battery backed up assets means that communications to field equipment is very rarely interrupted, making the ITS systems and management of the Motorway highly reliable.

**Safe Maintenance Access:** The design and delivery of field cabinets along surface roads (not the Motorway) means that ITS field equipment control systems are safely accessible at all times, without need of traffic management.

The successful delivery of a robust, maintainable and safe systems approach to ITS technology will lead to roll-outs of similar ITS systems nationally.

The reduced false alarm rates resulting from the utilisation of Thermal Incident Detection Cameras adopted at T2T has proven that this is a significantly improved tool for incident detection.

Thermal devices have now been adopted on other sections of the State's Motorways. This device can be easily adopted by other Australian road agencies, leading to more efficient and reliable management of high volume motorways. This will ensure consistency, not just from a motorists perspective but also more broadly for network operations and maintenance. Combining the national and international expertise from SAGE and GHD enabled T2T to deliver a truly world class ITS System that will be the benchmark for all future ITS projects in South Australia.





# Network Intelligence and Transport Systems Program

## Submitting Organisation

City of Gold Coast

## Collaborating Partners

Integrate

## Project Description

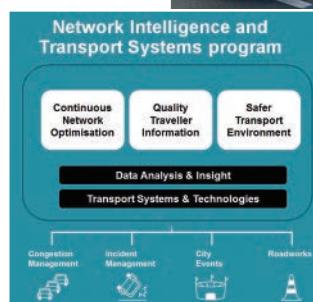
The Network Intelligence and Transport Systems Program (NITS program) was developed using a Systems Engineering approach to provide traceability from each project to the objectives outlined in the strategy. It acknowledges the benefit of non-infrastructure solutions to maximise safety and efficiency of the transport network. The use of transport technologies, ITS, TDM and network intelligence are necessary to provide value for money and create a smart, connected and liveable city.

The Gold Coast is Australia's largest regional city and as such provides an excellent 'test bed' for trials of new transport technologies and ITS initiatives within an urban environment. One of the objectives of the NITS program is to collaborate with industry to trial and implement ITS, transport technologies and disruptors, thereby supporting the deployment of ITS in an urban environment.

The NITS program delivered the following projects over the past 12 months:

- Audit of data collected from loop detectors to determine accuracy and reliability of counts.
- Establishment of a cloud based environment for the management, analysis and reporting of transport network data.
- Review of the City's ITS Communications network in preparation for transport disruptors such as C-ITS.

- Trial of non-intrusive detection technologies including radar and Automatic Licence Plate Recognition.
- Freight priority proof of concept.
- Review of current regulation and policy in preparation for future transport disruptors including CAVs, EVs DRT and MaaS.
- Review of pedestrian management technologies.
- Implementation of a network optimisation framework.
- Development of a signal coordination and optimisation framework.



# Freight Priority Initiative: Everything Old is New Again

## Submitting Organisation

City of Gold Coast

## Collaborating Partners

Transmax

## Project Description

Using a Weigh-In-Motion site and the ITS Platform STREAMS, priority is given to 'fully laden' heavy vehicles at a downstream signalised intersection. The output from the detection of a heavy vehicle (with a minimum weight) triggers a priority call at the signals via STREAMS. The innovative aspects include the use of existing, proven technology to achieve numerous objectives and the ability to provide priority for selected vehicles determined by weight. The location of the intersection is in an industrial area and providing priority for all heavy vehicles (due to the volume) is not feasible. Whilst providing priority at signals isn't new, this initiative seeks to determine if targeted priority has a greater benefit than priority for all heavy vehicles.

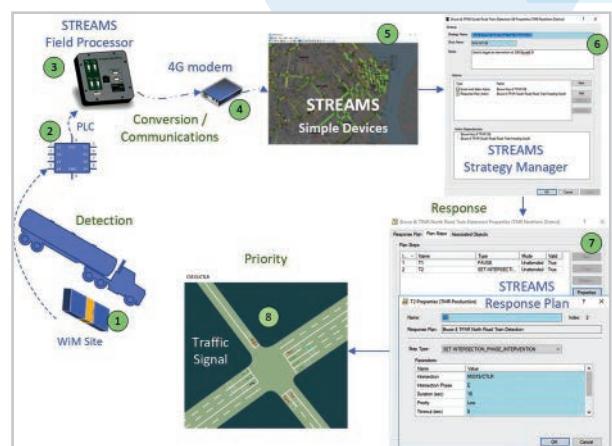


There are efficiencies to be gained in applying existing technologies in novel ways. Whilst this initiative will provide local benefits, the process and system used to achieve the desired outcomes is easily replicated and transferable to other locations. This will allow the ITS industry to test other priority concepts and technologies. Also, for applications like emergency vehicle priority, there is a realistic limit to how often a priority call can be made. For an industrial area where trucks can make up a substantial percentage of the traffic, priority can't be provided to all trucks. This initiative, with the ability to trigger priority at different weights will help determine how often is too often when providing priority.

The City has developed its Network Intelligence and Transport Systems framework, based upon four primary areas. This framework puts ITS at the forefront of managing the City's congestion via:

- Data analysis and reporting
- Network optimisation
- Transport systems and technologies
- User experience and traveller information

This framework supports the delivery of the City's Transport Strategy 2031.





# Network Performance Reporting System

## Submitting Organisation

Main Roads Western Australia

## Project Description

Network Operations Directorate has made a commitment to develop a data driven approach to addressing congestion, based around agreed performance metrics and targets. To this end, as part of a collaborative and agile process, a significant data ecosystem was developed internally to collate and report road network performance data across major roads in metropolitan Perth. The data ecosystem collates speed and volume information from multiple data sources across the 4,300 links which currently represent the Perth major road network. Data is recorded on each link for every 15 minute interval dating back to 1 January 2013. This data system has been named the Network Performance Reporting System or "NetPReS".

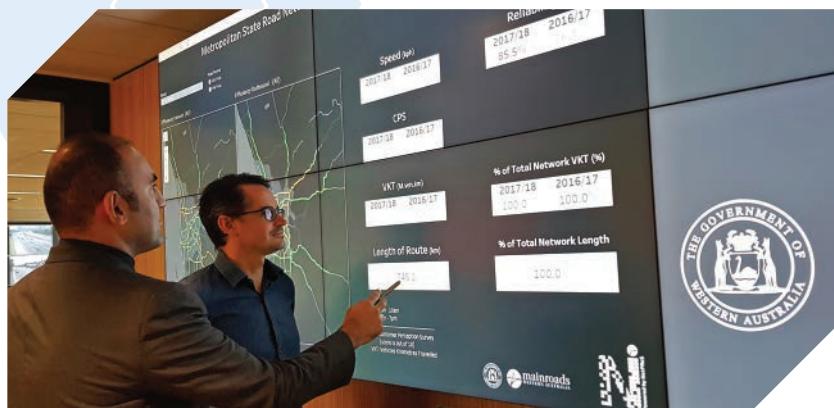
Developed internally by Main Roads Network Operations, NetPReS sets a benchmark for a big data analytics platform that would allow the public sector to monitor and evaluate performance metrics across the road network.

The system architecture for NetPReS includes four distinct parts:

- A significant cloud-based data warehouse.
- Data pipelines that allow various sources of data into the warehouse, monitored for quality and then filtered, patched and fused as necessary.
- Data cubes developed to facilitate quick access to commonly used data for specific queries.
- Graphical user-defined dashboards using PowerBI and Tableau that enable easy consumption of information for users and decision makers.

Setting the benchmark for best-practice in road network performance reporting, NetPReS is regularly used to provide periodic performance reports to MainRoads Corporate Executives, Department of Transport and the Treasury.

Additionally, NetPReS enables annual evaluation of significant congestion hotspots across the Perth metropolitan area; assisting in identification and prioritisation of pinch points for further investigation.



# Melbourne Freeway to Freeway Ramp Signal System

## Submitting Organisation

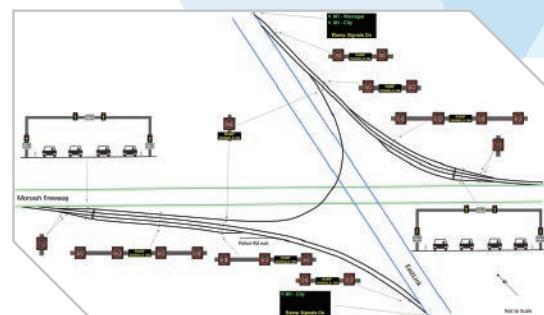
Department of Transport

## Project Description

With the continued growth in traffic volumes on the Melbourne freeway network there has been an expansion of the Melbourne managed motorway network with a particular focus on managing the complexity of freeway to freeway interchanges that need specific operational management. The ITS Group within the Department of Transport (formerly VicRoads) was charged with developing this new operational concept as well as delivering a control system enhancement solution and new electronic signs to implement the Freeway to Freeway Ramp Signals which is the first of its kind. This innovative way of managing traffic from one freeway to another freeway further enhances the Department's position as a world leader in the management of its freeway.

The concept of controlling freeway to freeway flows is new and the first of its kind in Australia requiring new thinking in how it could be effectively managed given the high speed and high volume nature of the ramps. Building on a number of years of experience operating the Melbourne Freeway Management System (FMS), a new concept of operation was developed as well as development of new electronic signs and new software enhancements to the existing FMS.

Incorporating ITS comprising information, communication and control systems, into the Melbourne freeway network has improved the operational performance and efficiency of the network and provides the capability for 'real-time' management of travel demand and traffic incidents. The freeway to freeway ramp signals on the ramp from CityLink to the West Gate Freeway has seen an 80% reduction in nose to tail crashes on the Bolte Bridge approach to the ramp and the stabilisation of travel times on the West Gate Freeway.





# Cross Boundary Incident Management through Multi-Party Managed Motorway Control System Centre-To-Centre (C2C) Interface

## Submitting Organisation

Department of Transport

## Collaborating Partners

Transurban

## Project Description

An integrated network management approach was a challenge for Victorian Department of Transport (formerly VicRoads, 'the State'). Some of the road network is managed by Private Road Operators with independent control systems, devices and operation rules. This has prevented timely coordinated responses to incidents, particularly across control system 'boundary' areas. Requests to make changes to overhead speed and lane control signs (LUMS) required State and Private Road Operators to establish communication and coordinate changes in their respective systems. With the Centre-to-Centre (C2C) interface, either State or Private Road Operator can control each other's devices directly, improving the efficiency of traffic management. There are no other known examples in the world where full control of LUMS has been used via C2C.



The concept of C2C (control mode) allows the State and Private Road Operator to implement or further enhance the interface between control systems to include or expand device type control and automation of system responses to predefined scenarios such as tunnel closures or certain road sections of the freeway/tollway triggering actions such as ramp closure and dynamic speed changes according to traffic conditions across the State and Private Road Operator road sections. This project has developed a robust system concept, protocol standards and framework to allow other State and Private Operators to develop similar C2C arrangements with other control system applications.

On average, where control of devices is required that cross the State and Private Road Operator border, an incident management plan can be implemented by a single operator within a few minutes compared to at least 15-20 minutes required when using manual communication and interaction between both traffic management operators. This greatly improves the efficiency of cross border traffic management, ensuring consistency, improved road user experience and most importantly, improved road safety.



# Beautification of ITS Assets to Enhance Aesthetics for the Community

## Submitting Organisation

DM Roads

## Project Description

Through working with industry and the local communities where we work, DM Roads have developed an innovative approach to combatting graffiti. Efforts to mitigate graffiti on traffic signal controller cabinets have been trialed in the past, with artists commissioned to paint controller cabinets. In the approach developed by DM Roads, artworks were developed through an extensive community engagement program and subsequently printed on anti-graffiti vinyl wraps. Using the system, DM Roads were able to install local specific artworks on traffic signal cabinets in an expedited process, reducing prolonged exposure to working in close proximity to live traffic, whilst also being easy to replace and easy to clean without the use of harsh chemicals if graffiti was to re-occur.

The project has increased awareness and interest in traffic signals and wider ITS technology and played a key role in enhancing collaboration between DM Roads, the communities where we work and local councils in NSW to generate opportunities for future collaboration within the ITS space.

The primary benefits of the community based graffiti prevention initiative include: a proactive and innovative approach to discouraging graffiti that costs NSW government, local councils and property owners over AU\$300m per annum; instilling a sense of pride in the local communities through community engagement and the sourcing of local produced artworks and photos, in which we have received requests to buy graphics used; enhanced relationships and increased collaboration with local councils to facilitate awareness of wider ITS solutions; created opportunities for emerging artists and school students interested in art; as well as a method by which, DM Roads can enhance engagement with indigenous communities and provide a medium to display cultural history to a wider audience.





# ITS Asset Management Software

## Submitting Organisation

DM Roads

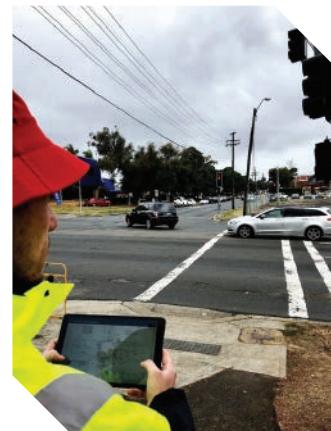
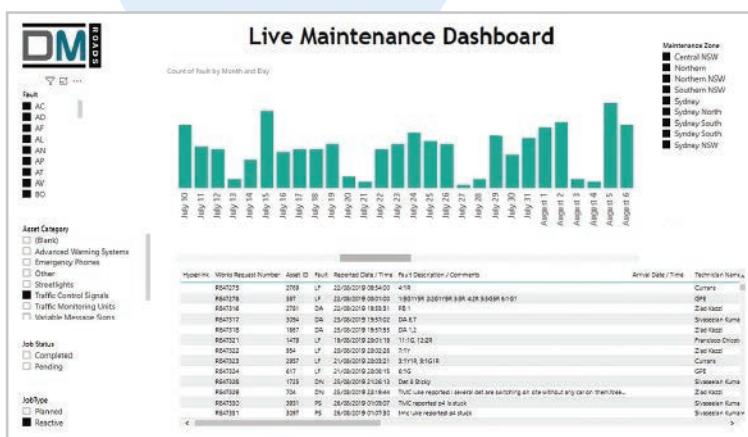
## Project Description

Throughout the delivery of ITS maintenance and asset management services across the RMS network, DM Roads have utilized a wide array of asset management software, however, no external solutions have provided a holistic platform for maintenance inspections, data collection and data analysis specific to what we do. As a solution, DM Roads have developed ITS specific asset management software and applications, to deliver efficiencies and generate additional customer benefit within the delivery of ITS maintenance. The application is tailored to the needs of our customers and clients, including the inclusion of: live network reporting, digitalized maintenance forms, access to asset data and daily network updates to enable transparency, whilst also facilitating the delivery of best whole of life asset outcomes.

The system has the capability to capture fault and conditional data through prefilled maintenance forms. These forms formulate the DM Roads asset database, enabling: increased ease of data analysis, development of data

driven renewals and improvement programs as well as a platform to justify the use of alternate technologies as solutions to issues across the ITS network. In addition, the technology also enables increased ease of asset monitoring and fault response. Through the system, faults are dispatched to the closest crews to expedite fault rectification and therefore, maximise network availability and efficiency for the customers we serve.

The asset management application was rolled out across the Metro West Zone ITS Maintenance Contract in September 2018, enabling the improved collection and analysis of accurate asset data and trend analysis. The application has played a crucial role in the identification and development of future improvement strategies and minor improvement works for FY 2018/19 and FY 2019/20 periods, including: the innovative graffiti prevention project, line marking and loop cutting works, safety improvements to traffic signal power supplies, streetlighting renewal works as well as the development of strategic initiatives in which DM Roads are working with wider industry to address frequently occurring faults across the broad suite of ITS assets we maintain.



# Parramatta Parking Finder – Mobility for Parramatta

## Submitting Organisation

Spot Parking

## Collaborating Partners

City of Parramatta Council

## Project Description

The Parramatta Parking Finder focuses on supporting the mobility needs of people with accessibility issues in an innovative way. Accessible parking spaces in the Parramatta CBD include information and photos of the space and a rating out of five on the Size of Space, Hoist Suitability and Kerb Ramp Access. This detail of information is the first of its kind in NSW. Spot digitises the kerbside to provide foundation data that supports intelligent transport systems and improves mobility in cities and urban areas. Spot also utilises Machine Learning to automate the interpretation of kerbside information.



Spot's data, like the Parramatta Parking Finder, prepares Australia for an autonomous vehicle future and provides greater agency and safety to drivers and passengers. Our data can be updated in partnership with cities and modified to focus on the particular issues of a city, like inclusive accessibility. Our data can be used by multiple parties (rideshare or logistics) for improved mobility services. We are the aggregator of mobility data, uniquely connecting private and public assets for optimised mobility services. Spot kerbside data can be integrated into Mobility as a Service (MaaS) providers' systems to offer users an end-to-end service across different mobility options and for their unique mobility and accessibility needs.

The Spot digital inventory enables Parramatta Council, a leader in smart city planning to make data-driven decisions on mobility, accessibility and user experience. The Parramatta CBD Parking Finder also includes information to identify accessible parking bays for those with accessibility issues. The focus on mobility and accessibility aims to provide greater agency and safety for disabled people and carers.





# Arevo Smartphone App

## Submitting Organisation

Royal Automobile Club of Victoria

## Collaborating Partners

SkedGo

UbiPark

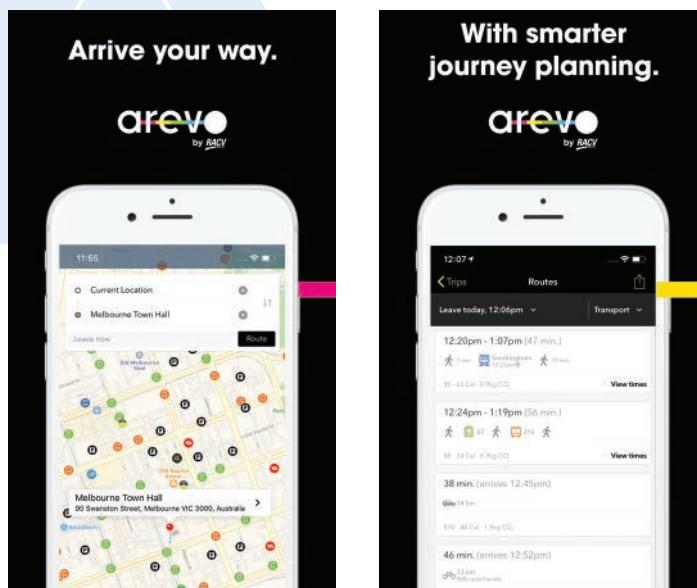
## Project Description

Arevo is a journey app that utilises a wide range of options, integrating Melbourne's trains, trams and bus systems, bike share and car share options, as well as Uber and off-street parking. Its central feature is a personalised journey planner, with the user able to set their preferences to either the most convenient, most economical or most environmentally friendly route to a destination. Designed to be a one stop shop for a range of transport services, it also allows users to top-up their myki card on the go, marking one of the first apps to offer this service. Developed as part of the Mobility as a Service (MaaS) model, arevo is designed to revolutionise the way Melburnians travel.

Arevo personifies the values of ITS as it is a platform developed to assist Victorians getting around the state smarter and easier, with or without a car.

With just one user-friendly app, Melburnians have access to the various transport options. As it was developed as part of the MaaS model, it removes the need for users to trawl through multiple transport apps on their smartphones that don't talk to each other. The platform gives people better information about the transport choices available to them and the benefits and costs of their transport decisions. This is fundamental to the idea of enabling smarter behaviour and arevo promotes all-day public transport and active transport, in the place of car use.

Arevo has the potential to create broader social, environmental and economic value for the Victorian community. The fundamental measures of success will be beyond revenue and growth but about changing how Melburnians interact with public and private transport systems, ensuring it is smarter, more efficient and more sustainable.



# Cooee Busways On-Demand Public Transport

## Submitting Organisation

Busways

## Collaborating Partners

Via

Transport for NSW

## Project Description

NSW is transforming the delivery of public transport, through the development and delivery of on-demand public transport. Partnering with Via and Transport for NSW, Busways launched a new on-demand public transport service, Cooee Busways, in May. Residents in The Ponds and Schofields have flocked to the service by the thousands, with ridership exceeding targets, and vehicle utilization well ahead of goals. Ridership increased by more than 50 percent between June and July, with 55 percent of riders saying they previously used a private vehicle to make the journey.

Via's passenger matching and vehicle routing algorithm seamlessly integrates into the existing public transit infrastructure. Cooee Busways is 1 of 26 on-demand public transport services launched in NSW since 2017 and Via's fifth deployment

in NSW joining services in Newcastle, Northern Beaches, Macquarie Park, and an on-demand autonomous vehicle called BusBot in Toormina. Cooee Busways riders took more than 20,000 rides in less than three months. Thus far, of the 55% riders that previously used their private vehicle, 50% stated it was primarily used for commuting. From this, 4% stated they had sold their car since using Cooee Busways, with a further 43% considering selling their vehicle.

Through their partnership with TfNSW and Via, Busways is leveraging technology to transform public transport. Cooee Busways provides first- and last-mile connections for residents in The Ponds and Schofields to the new Sydney Metro driverless train. Cooee is also highly utilized, seeing a 75% increase in the first 11 weeks. To date, users downloaded the app more than 8,500 times, equating to a third of the residence in the service area.

Using the Cooee Busways app, riders can book directly from their smartphone. Via's advanced algorithms will enable multiple riders to seamlessly share the vehicle. The powerful technology will direct passengers to a nearby virtual bus stop for pick up and drop off, allowing for quick and efficient shared trips without lengthy detours.





# Uber's Mobility as a Service (MaaS) Innovation in Partnership with Transport for NSW

## Submitting Organisation

Uber Australia

## Collaborating Partners

Transport for NSW

Captain Cook Cruises

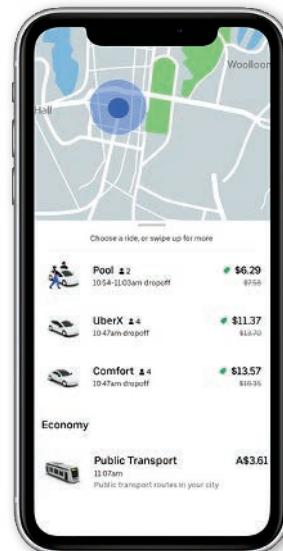
## Project Description

Uber has launched two innovative products in Sydney that will have a significant impact on public transport networks, with clear potential to be expanded across Australia. FerryConnect provides an affordable, flat-fare Uber Pool between the Manly ferry wharf and surrounding suburbs. Uber has delivered a scalable and efficient MaaS service that tests how Uber can use its technology to facilitate multi-modal journeys and encourages greater public transport uptake. Secondly, Journey Planning integrates Sydney's public transport into the Uber app, allowing Uber users to plan and map their trip, as well as compare the cost and duration of public transport with Uber product in real-time. Sydney is the fourth city in the world to gain access to this technology.

FerryConnect was launched in January 2019. At its peak, there were approximately 1,000 trips per week on FerryConnect. Planning was launched at the end of July 2019, with full roll-out scheduled to be complete in September 2019 at which time it will have a direct impact on hundreds of thousands of Sydney-siders.

FerryConnect improves connectivity to ferry services in Manly, making it a feasible and affordable option for commuters who live in surrounding suburbs:

- Removes a major barrier to people using the ferry, encouraging greater patronage and fare revenue.
  - Reduces congestion by encouraging public transport usage and pooling the trips to and from the wharf.
  - Improves safety by helping people get home from the ferry wharf, particularly at night.
- Journey Planning helps people directly compare public transport with Uber products:
- Empowers customers with choice, which is a crucial part of the journey to MaaS and will help increase public transport patronage.
  - Drives increased public transport awareness and usage, reducing congestion and improving the performance of the network.



# Telstra and Lexus Australia Advanced Connected Vehicles Victoria Project

## Submitting Organisation

Telstra and Lexus Australia Project

## Collaborating Partners

Ericsson

Continental

Qualcomm



## Project Description

Australia's CV2X ecosystem delivered over 4G LTE network using first to market C-V2X chipsets in purpose-built vehicle C-ITS stations.

Testing six C-ITS Safety Use cases to show functionality, performance and security of the CV2X ecosystem anticipating future CV2X vehicles.

Telstra and Lexus Australia and project technology partners undertake ITS and CV2X R&D in Australia for local and global innovation.

During 2019, initial lab testing began, then on-track trials at Altona facility and now testing on Melbourne arterial & regional roads .

CV2X delivers advanced driver notification and automated response about dangerous events which could prevent road deaths and injuries.





# Mobility as a Service (MaaS) Governance Research

## Submitting Organisation

Arup University

## Collaborating Partners

Transport Infrastructure Ireland

## Project Description

Using Public Value analysis, the report shows the effect different governance models have on Mobility as a Service and the most useful ways to lift public benefit without suppressing innovation, and guides governments as to their responsibilities and appropriate actions.

Governments can use this open and public research now to determine their policies.

Arup Australia will use this research with Transport Infrastructure Ireland to shape their approach to MaaS and its implementation.



# VRAV: Augmented On-Road Driving Simulator for Autonomous Vehicles Using Virtual Reality

## Submitting Organisation

Monash University

## Project Description

On road testing of autonomous vehicles presents numerous problems. Simulation offers a potential means to test driver's responses to unsafe driving conditions. One promising method, referred to as Wizard-of-Oz, places the participant in a real vehicle driving on public roads by a trained driver who is hidden out-of-view. Nonetheless the participant is unable to actively engage in the driving task or take over the control of the car if necessary. A team at Monash University has developed a Virtual Reality Autonomous Vehicle (VRAV) that tackles this gap. The VRAV incorporates virtual reality technology into the Wizard-of-Oz driving simulation, to provide a simple and inexpensive way to test human behaviour and their interactions with the AV in a naturalistic driving condition.

Given the rapid development and test deployment of AV, there is a renewed urgency in engaging with high quality research to better understand the implications of the technology upon our urban environment and the population that will engage with it. The VRAV, developed by Monash, is a powerful research tool that allows complex research questions related to safety, HMI interaction and design of AV to be investigated. The findings from this research tool will inform future development and deployment of AV both in Australia and overseas. The Monash VRAV is ready to use, the time frame to reap its benefits is immediate with some of transport and government agencies already expressing interest to use the tool to undertake AV research.





# Automatic Passenger Counting Technologies for Bus Replacement Services

## Submitting Organisation

Swinburne University of Technology, Smart Cities Research Institute

## Collaborating Partners

Transport for NSW  
Sydney Trains  
iMOVE CRC

## Project Description

The project identified and trialled four solutions for automatic passenger counting. It built on emerging trends in sensing technologies, AI and data analytics to develop accurate, cost-effective and easy to install solutions. Rigorous research was conducted to develop AI-based algorithms that produced accurate detections. A unique aspect of the project is the comparative evaluation that was undertaken of all technologies under the same real-world conditions during Sydney field trials. The project demonstrated how a customer-focused approach that converged meaningful technologies, digital innovations, infrastructure and existing assets can provide a better user experience for travellers. The outcomes also provide service integration opportunities that could allow more tailored on-demand bus services to respond promptly to unanticipated 'peaks' and 'troughs' in patronage.

The project follows a research impact cycle which starts with creation of knowledge (through this study), and moves on to engagement with industries, and translation of research outcomes to a commercialisation phase leading to impact and contributions to the economy and society. The research supports key pillars in smart cities and a vision to create safe and resilient travel

### Automatic Passenger Counting Technologies

**Vision-based passenger tracking and analysis**  
Vision sensors are mounted above each doorway to ensure visual coverage of the buses entry and exit points. Artificial Intelligence (AI)-based neural network algorithms were developed to detect the appearance and direction of motion of passengers entering and exiting the bus to provide real-time passenger counting information.

#### Floor-based sensing (sensor mat)

Novel piezo-resistive sensing mats are installed at the entrances of the bus. The mats can record real-time passenger movement using a microprocessor and memory card. A counting algorithm then calculates the final number in each direction including multiple passengers on the mats at the same time.

#### Mobile Sensing

Portable, low-cost Internet of Things (IoT) system installed in bus to count passengers. Solution utilised an Cricket Particle device that provided a combination of depth and proximity sensors with a fully functioning computer.



solutions to ensure that public transport benefits all segments of society. These technologies will have significant benefits in enhancing the performance of public transport as a sustainable mode of urban mobility. They will also help to improve operations, reduce passenger delays, enhance reliability and resilience during incidents, and provide operators with insights to maintaining high customer satisfaction.

The end-user on this project, Sydney Trains and Transport for NSW, initiated this project with a view to deploying the automated passenger counting system on their replacement buses in during train disruptions, especially on services where an Opal System is not installed. The technologies and solutions developed in this research will benefit public transport agencies around the world. Understanding how many passengers are using public transport systems helps in improving operations and also in planning of future services. These are all important and urgent issues facing urban transport agencies and public transport operators around the world, who will all benefit from the innovations and technology solutions developed in this research to solve these challenges.

# ITS Australia iMOVE Projects

ITS Australia as a participant in the iMOVE CRC have undertaken to invest over a 10-year period and work to develop and participate in projects that enable our industry to shape future transport. ITS Australia works with our members and the broader sector to identify research and related projects which aim to reduce congestion, improve outcomes for communities and enable future intelligent transport opportunities.

This year ITS Australia are leading a project with members Cubic, IAG, RAA and research partner RMIT on Unlocking Shared Mobility. This project, in close collaboration with government and industry, will investigate if free flow parking for car-sharing programs can increase car-share uptake, helping reduce congestion and lead to better flows of traffic in and around regions, similar to the proven effect of round-trip car share.

During 2018 ITS Australia led a project with research partners Institute 4 Choice to better understand what Mobility as a Service means for Australia and, importantly, what Australians think, publishing the well regarded report MaaS in Australia – Customer insights and opportunities for Mobility as a Service in Australia.

You can find out more about Unlocking Shared Mobility and download the MaaS in Australia report at [www.its-australia.com.au](http://www.its-australia.com.au) or contact ITS Australia for more information or if you have a project idea for ITS Australia.





# 2019 Young Professionals

Candidates for the 2019 Young Professional Award for demonstrating passion and dedication to the ITS industry as a young professional.

## Anthony Leducq

Senior Solutions Architect –  
Cubic Transportation Systems

## Daniel Gunek

Network Intelligence and Asset Reliability  
Engineer – DM Roads

## Mitchell Price

Regional Director of Government Strategy and  
Policy Asia Pacific – Lime

## Patrick Busby

ITS Engineer – Transurban

## Sepehr Ghasemi Dehkordi

Research Associate –  
Centre for Accident Research and Road Safety –  
Queensland (CARRS-Q), Queensland University of  
Technology

## Tegan Ross

Undergraduate Engineer – Aurecon

## Yale Zhuxiao Wong

Doctoral Candidate and Research Analyst –  
Institute of Transport and Logistics Studies,  
University of Sydney Business School



The ITS Australia National Awards are a celebration of excellence in the Australian Intelligent Transport Systems industry and are hosted annually by ITS Australia.

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