Awards 2021

FINALISTS

SMART TRANSPORT INFRASTRUCTURE AWARD

Aimsun

M4 Smart Motorway Project - Simulation-Based Support for Smart Motorway Infrastructure

This real-time transport management support system fuses live traffic data, analytics and transport modelling. The system guides control room operators to apply the best response plan to proactively minimise congestion using the ITS tools already at their disposal. It predicts detailed lane-based traffic conditions for the upcoming 60 minutes, and, if congestion looks likely, simulates the most appropriate mitigation strategy to clear traffic queues, potentially before they form.

Queensland Department of Transport and Main Roads

Project Management of the Smart LED Road Lighting Project

The SLRL project is replacing approximately 35,000 Rate 3 high-intensity discharge (HID) luminaires with LED luminaires, fitted with Smart Lighting Controllers (SLCs) across Queensland. The Control and Monitoring System (CMS) Software is being delivered as a Service (SaaS) through until 2026. The SLCs communicate, over a dedicated Telstra Narrowband Internet of Things (NB-IoT) network, with cloud-based CMS. Design packages have been installed across multiple sites within Queensland.

Wom-Batt

Wom-Batt Underground Lithium Power Pods

Wom-Batt is a smarter, simpler, longer-lasting and theft-proof solar charged power storage solution for off-grid utilities. A truly unique underground power pod featuring a patented cylindrical design that comes ready to install. Wom-Batt power pods use lithium-iron-phosphate (LiFePO4) technology to deliver high performance and long-term stability with low toxicity, zero running costs and zero emissions. Operating efficiently at 12V–24V, Wom-Batt can be customised for power requirements between 50Ah–1,000Ah.

Main Roads Western Australia

Smart Freeway Kwinana Northbound - All Lane Running

The Smart Freeway Kwinana Northbound project is the first of its kind in Western Australia. This project has built upon established ITS Smart Freeway initiatives from around the world to enable the most advanced deployment in the nation to date. Over 800 ITS devices now work in unison to reduce traffic congestion, improve safety and save up to ten minutes from the average driver's journey.

Transurban

Digital Twin to Optimise the Ventilation of the Airport Link Tunnel in Brisbane

At Transurban we continue to identify ways to reduce our energy usage – a recent initiative looked at reducing the amount of energy required to power tunnel ventilation systems. We developed a "digital twin" simulating the Airport Link Ventilation Control System. Leveraging insights from the 'digital twin', we then successfully applied the outputs into the real world, with analysis confirming the trial is on track to achieve significant energy savings.

INTELLIGENT MOBILITY AWARD

Directed Technologies

Australia Post Safe Rider Program

Carefully weaving between cars and pedestrians across footpaths and roads, Australia Post riders are an essential service that remain a vulnerable road user segment. Recognising this, Australia Post embarked on a world-first program using digital video telemetry to improve safety outcomes for its fleet of 20,000+ delivery riders. This bespoke system, designed by Directed Technologies marks the largest deployment of a video telemetry systems within Australia's urban landscape.

Keolis Downer

On Demand Transport, Future Mobility at its Best

The Mount Barker On Demand Trial surpassed every set patronage target across the first 12 months of operations, and an incredible 150,000 trips in just over 18 months has made it clear that the Keoride On-Demand service is an effective and easy way for residents to get around these Adelaide Hills communities. The On-Demand service is becoming a key part of the local public transport network.

National Heavy Vehicle Regulator

Regulatory Compliance Mobility Solution

RCMS is a state-of-the-art mobile application used nationally (ACT, VIC, TAS, ACT soon WA followed by NSW and QLD) by the NHVR during heavy vehicle intercepts to complete risk profiling and targeted enforcement. It connects to a central database of safety and compliance data in real time to access driver & vehicle information, target high risk offenders, administer digital notices and send intelligence data back to the database.

NTT DATA

Occupancy and Crowd Monitoring Solution, Smart Transit Victoria

The solution gives the Department of Transport Victoria, and their customers access to a dashboard with real-time data and future predictors of the occupancy levels of every train and platform in the Victorian Metro system. This allows travellers to make more informed decisions to prevent overcrowding, adhere to social distancing guidelines and boost their confidence in utilising the Victorian public transport network.

Placie

Placie, A One Stop (Mobility) Shop for Consumers

Placie is a Mobility-as-a-Service (MaaS) mobile application that integrates and aggregates both private and public modes of transport. Placie users require only one account and one registration, to enable them to book via transport services within the app. Placie is also a trip planner for public transport journeys and can connect mass transit to private modes of transport creating multi-modal trips.

Royal Automobile Club of Victoria

arevo, by RACV

arevo is a one-stop mobile app for a range of transport services, providing users with a convenient way to plan their journey. It provides users with a range of transport options for a given journey at any point in time. This includes a dedicated bike map and journey planner which shows the available bike path options on a journey.

CONNECTED & AUTOMATED VEHICLE AWARD

Busways

BusBot – Phase 3 Fully Autonomous Vehicle Pilot

In a global first, BusBot took automated transport to the next level, achieving Level 4 autonomy at the North Coast Regional Botanic Gardens in Coffs Harbour to operate with passengers, and no staff on board. Led by Transport for NSW and managed by Busways in partnership with Coffs Harbour City Council, EasyMile and Telstra, the project demonstrated the power of industry partnership to advance technology to augment existing transport services.

Keolis Downer

Automated Vehicles: A Viable Mobility Option for Regional Communities

The AV, known as 'Murray', travelled a route of Renmark with the aim of educating the Renmark community on how AV technology can transform regional communities through the delivery of an effective first and last-mile service, while providing the only public transport solution in the area.

Royal Automobile Club of Queensland

RACQ Smart Shuttle Automated Vehicle Program

The RACQ Smart Shuttle Automated Research Program's objective is to understand the capabilities of automated vehicles to integrate into future transport systems and to ease the transition towards new mobility options for members. The RACQ Smart Shuttle has completed two successful deployments in live traffic environments. Each deployment focussed on increasing the complexity of the external environment to test the capabilities of automated vehicles within the transport network.

Toyota Motor Corporation Australia

Lexus Australia C-ITS Research within Ipswich Connected Vehicle Pilot

In an effort to improve safety, Lexus Australia has been trialling advanced vehicle communication of safety messages within the Ipswich Connected Vehicle Pilot (ICVP) in Queensland. This research examines the capability and benefits of very quick data exchange between vehicles, between vehicles and traffic light equipment and receiving important road network updates. This activity enhanced the ICVP activity by adding V2V use cases to that trial's V2I/V2N use cases.

Toyota Motor Corporation Australia

Lexus Australia Vehicle to Infrastructure Communication Testing within AIMES Ecosystem

Communication between Lexus Australia vehicles and Kapsch TrafficCom roadside infrastructure was successfully tested in the AIMES environment in Carlton. Safety use cases involving traffic signals and vulnerable road users were evaluated in addition to a series of road hazard warnings. Further work includes the communication of vehicles with Trams to warn drivers turning in front of a tram and warning vehicles of approaching emergency services with lights flashing.

EXCELLENCE IN TRANSPORT DATA AWARD

Australian Government Department of Infrastructure, Transport, Regional Development and Communications

National Freight Data Hub

The National Freight Data Hub prototype website features interactive insights and uses cutting-edge geospatial visualisation tools for industry and governments to gain a national picture of freight movements. It showcases how to make better use of current data to answer enduring freight questions such as what freight is being moved, when, and where. The website contains time-enabled maps and graphs, and is the first publicly-searchable freight data directory for Australia.

Fremantle Ports

Western Australia Supply Chain Data Intelligence Hub

The COVID-19 pandemic amplified the need for real time information to ensure supply chain continuity. Fremantle Ports' WA Supply Chain Data Intelligence Hub (Data Hub) integrates and analyses large government and industry stakeholder datasets to deliver unprecedented insights and intelligence. The Data Hub is a living model that drives community and business value and outcomes through enhanced decision-making capability based on increased supply chain visibility and data access.

Intelematics Australia

Intelematics INSIGHT

INSIGHT connects businesses with a detailed picture of Australia's movement economy to plan, assess, and evaluate projects confidently. Businesses modernise decision-making with access to a combination of rich, high-quality movement data powered by smart technology. INSIGHT provides a new level of traffic oversight of vehicle volume, speed, origin-destination, and intersection turning volume on NSW and Victorian roads. Customers solve complex problems and uncover new opportunities with INSIGHT.

netBI

Traffic Intelligence: Cost and Causes of Congestion Analytics Tool

netBI has transformed traffic management and congestion economic modelling with an innovative cloud-based data analytics solution. It combines and interprets voluminous data from sensors and systems about traffic volume and speed; incidents, events and roadworks; weather conditions and more. Through machine learning (ML) algorithms, clients are able to optimise investment and planning decisions through the calculation of the costs and causes of congestion.

Retina Visions

Automated Road Asset and Defect Assessment

Retina Visions has developed multiple machine learning models to automatically detect and assess various defects and assets on the road network. This service is conducted using a single, vehicle mounted dash-cam that fits to a council's garbage or maintenance fleet to automatically inspect the network on a regular basis and allow more maintenance to be conducted to ensure roads are safe for drivers.

Level Crossing Removal Project

VICTORIUS: Optimising Rail Disruption Planning with Big Data

This data-driven tool empowers us to improve the end-to-end process of planned rail disruptions. Leveraging over 35 billion data points, sophisticated Cloud data tools and analytics, the platform accelerates and stream-lines planning, optimises service delivery and consistently minimises disruption impacts on commuters. This innovation redefines the entire disruption planning process, integrating disparate elements to alleviate the time, cost and stress of transport disruption for all involved.

Transport for NSW

Transport for NSW COVID Safe Digital Response

When the COVID-19 pandemic began to unfold, the need for clear, timely and accurate transport information became crucial. Transport for NSW mobilised a coordinated response to help customers travel more safely by building on existing digital channels to deliver five key initiatives: COVID Safe travel notifications; Contactless card registration; COVID Safe service capacity information; Touch-free Opal digital card and RFID bag tags ; Bike riding and walking trip planning enhancements.

University of Technology Sydney

The Next Generation of Digital Twins

UTS Data Science Institute has been working in the last years on building the Sydney Real-Time Digital Twin Platform, integrating at once several types of data sources such as all the city 3D layout with top layers like the public transport movement in real-time, transport simulation for incident scenario management in real-time, water pipes layout via IoT sensing data transmission and air quality real-time transmission from monitoring stations in Sydney.

EXCELLENCE IN RESEARCH & DEVELOPMENT AWARD

Aimsun

Sydney Victoria Road Intelligent Decision Support System

The Victoria Road DSS leverages industry-leading expertise in multimodal transport modelling and artificial intelligence (AI), in a special development for one of Sydney's busiest commuter corridors. The fusion of modelling and AI allows the DSS to predict future transport conditions and automatically assess the impact of alternative operational plans. The network manager can then confidently choose the optimal response to daily congestion and non-recurrent events in live and planning environments.

Robert Bosch (Australia)

Connected and Automated Vehicle Highway Pilot Trial on Victorian Rural Roads

The Victorian Department of Transport, the Transport Accident Commission and Bosch partnered together to develop and trial automated vehicle technology on Victorian rural roads - where you are five times as likely to be killed in a crash than metropolitan Melbourne. The trial identified key areas for system developers, road safety practitioners and road managers, assisting them in enabling Automated Driving on Victorian regional roads sooner to reduce road trauma.

The University of Melbourne

AI for Real-Time and Predictive Traffic Condition Solution

Using AI to predict the future of transport and ease congestion. A world-first solution that uses artificial intelligence (AI) to predict traffic congestion up to three hours ahead, assist in optimising traffic in large cities and improving road safety has been developed and implemented for the city of Melbourne in June 2021.

University of Technology Sydney

Estimating the Impact of Electric Vehicles Across Transport and Energy Systems

UTS collaborated with the Australian Energy Market Operator using data from Transport for NSW, to deliver a new transdisciplinary approach for estimating the impact of future Electric Vehicle adoption. The novel approach uses a joint transport and energy consumption modelling approach, that connects the transport and energy sectors. The project estimated the electric vehicle adoption impact on consumer waiting times, traffic congestion and energy demand across multiple EV uptake scenarios.

YOUNG PROFESSIONAL AWARD

Cameron Duff
Software Developer at Orionet

Daniel Ioannidis
Operations Manager at HMI Technologies

George Funnell
Systems Engineer at SAGE Group

Grace Willems
Principal Policy Coordinator at the Royal Automobile Club of Queensland

Md Mostafizur Rahman Komol
Research Fellow at the Centre for Accident Research & Road Safety - Queensland

Poojith Cherukattil
Graduate ITS Engineer at Transurban

Sofia Garcia Egusquiza
PMCS Manager WestConnex M4-M5 Link at SICE

Vlad Ioan Popescu
Software & Test Lead at SICE

MAX LAY LIFETIME ACHIEVEMENT AWARD WINNER

Peter Bentley