

Report on the Connected Transport Roundtable - ITS Australia Summit

August 2022



Roundtable Overview

This Connected Transport Roundtable was convened by ITS Australia to bring together leaders in transport technology in Australia and internationally. With representatives from the international community, Australian States, Federal Department, FCAI, iMOVE, and OEM's. The possibility of connected and cooperative transport – enabled by digital connectivity – is expected to significantly improve road safety, traffic efficiency and comfort of driving, by helping the driver to take the right decisions and adapt to the traffic situation. The delivery of these benefits requires a cooperative environment amongst road users and infrastructure operators.

This roundtable considered the approach to transport connectivity that is being taken internationally, with an excellent presentation from Marie-Christine Esposito from C-Roads, and presentations from Mario Filipovic from Toyota Australia regarding progress in Japan, Ashley Sanders on the FCAI position representing the OEM's, QUT reporting on the Review of the CAVI Trial, and Mike Makin, from the Federal Department on current status of Ministerial considerations. Our aim was to review the current position in Australia, learn from international progress and explore the next steps for C-ITS, to bring forward the realisation of benefits in Australia.

Key Messages

- **Australian Trials** - Over the past 15+ years, steady progress has been made across the globe to develop standards and demonstrate the benefits of connected vehicle technologies. Connected vehicle technologies are broadly understood to be the next wave of interventions that will substantially improve safety and efficiency outcomes for road transport. In Australia there has been some good progress with a number of pilots and trials and policy actions.
- **Cohda Wireless and SA** - Cohda Wireless SA were engaged in many world first trials around the globe and were able to share with Australian authority's insights regarding the direction of this technology. South Australia was one of the early adopters and has deployed the Cohda product in their buses for use along their O'Bahn and busways.

- **CITI – TfNSW Cooperative Intelligent Transport Initiative** - In 2012, Transport for NSW deployed Australia's first test bed, and the World's largest heavy vehicle test bed, for Cooperative Intelligent Transport systems. This enable first-hand experience of this technology by Australia technologists and a demonstration of local benefits and challenges. This deployment has continued to evolve and is still active today.
- **Federal Chamber of Automotive Industries** - FCAI has advocated that to facilitate the introduction of C-ITS technologies, it is important to ensure spectrum harmonisation is maintained in the Australian market in line with *European market standards*, and appropriate safeguards are in place to ensure that C-ITS operates without interference. The OEM's will deploy C-ITS provided the infrastructure is in place. There was quite a bit of discussion on G5/5G, in fact C-Roads and Korea are pursuing both, and FCAI said we should pursue both, and that is what we have included in the Action Plan.
It is clear that we should follow Europe on this as they will navigate this before we do and work out how to utilise the right technical solution at the right stage. It is important that we pursue both 5G and G5 at this point.
- **Spectrum reserved for Road Safety** - On 18th December 2017, the Australian Communications and Media Authority (ACMA) authorized the operation of wireless technologies designed to improve road safety in the 5.9 GHz band with the introduction of the [Radiocommunications \(Intelligent Transport Systems\) Class Licence 2017](#).
- **2016 ITS World Congress, iMove CRC & AIMES (Melb Uni) test beds** - A range of desktop studies and deployments across iMove and AIMES, involving many ITS Industry partners, have further supported the development of a mature ecosystem in Australia for the deployment of Connected Vehicle technologies.
- **2020 TMR Ipswich Connected Vehicle Pilot CAVI** - The largest cooperative intelligent transport systems trial in Australia, testing connected vehicles, infrastructure, and cloud systems. However, the penetration of C-ITS in new vehicles has not occurred, and the lack of deployment means that the benefits cannot be realised. Key findings showed Overall speed reduction, smoother driving, predicted crash reduction with less serious injuries and fatalities, potential network reduction in crashes form 11 to 20 percent.
- **Australasian New Car Assessment Program** – In alignment with Euro-NCAP, ANCAP has plans to include connected vehicle technology as part of the five-star safety rating from 2025. This

provides a possible view of a deployment date, but this is very challenging, given the current lack of national action.

- Lexus Australia - Lexus Australia has been exploring the implementation of C-ITS with government through the Ipswich and AIMES pilots. During the summit, Lexus is providing demonstrations of some of the use-cases developed to date.
- Federal Department – There is Ministerial Commitment to AV Laws by 2026, with Level 4 Availability, C-ITS needs national consistency, which is a significant challenge, so the Department has commissioned research.

State of Play – The Benefits, Opportunities, Challenges, Actions, and a Pathway.

The Benefits

The number of people injured on AU roads has doubled over the last decade, costing the community more than \$30B a year (RACV, 2019). Similarly, the cost of avoidable congestion will almost double to \$30B a year by 2031 (BTRIE, 2019).

As confirmed through pilot projects, C-ITS offers proven and substantial benefits to today's drivers and the community as a whole. Two key trends in ITS pervade most parts of modern life with the expectation of being connected and receiving information in near real time. In this context connected vehicles will be a reality at some point and in respect to real time information both governments and OEMs have some work to do but Queensland's pilot has proven it is possible. Not only that it is possible but that users really value the information and make different decisions when they trust the information. So this discussion on CITS isn't about will it happen it should be about how do we collectively make it happen as soon as we can to realise the benefits.

Opportunities - Unlike Automated Vehicles, which Australia continues to prepare for by 2026, there is no such statement for C-ITS. Europe, China, Korea, Japan all have CAV programs but in AU the connected part lacks focus. In light of the ANCAP strategy to include C-ITS in a similar timeframe,

such statements are needed urgently. Australia needs to be bold and show leadership. We are morally obliged to make sound investments that can address the road safety pandemic, but without leadership, the market will not respond.

The Challenges

Vehicles - There are no commercially available connected vehicles in Australia at this time. Beyond Lexus, no other vehicle manufacturers are publicly testing C-ITS in Australia. SA has 175 C-ITS equipped buses, and Queensland has 40 members of the public and 20 regional staff with retrofitted C-ITS equipment generating around 1000 hours of driving a month.

Roadsides - SA, NSW, Vic, and QLD all have roadside equipment deployed – though they vary greatly in terms of their compliance with European standards. Queensland has 70 roadside stations along a 1500 km section, which are registered to their pilot security system. There are no other users of the pilot security system.

Privacy and Data Plans - OEMs are concerned that they will be subject to data sharing with google and others. It is noted that for TMR's data, it would not be useful to the police as we can't undo the SCMS keys so individuals cannot be identified. The OEMS will create their own problem if they want too much transparency of customers trips.

A Strategic Business Pathway

At a Roadmap level, there were a number of key elements that emerged in the discussions –

- Lexus and FCAI said that the market needs to be “primed” to give OEMs confidence to introduce the technology. So what is needed is a development path way. Key parts of the pathway, include:
- A stated commitment to a suite of standards (most logically Europe). Action by Federal and State Department and Ministers is required.
- Preparation of data sets (by governments and other OEM data) for central station distributed use cases that can be provided via traffic apps and telematic companies (latency 10 second delivery). Latency depends on the use case and the daisy chain of technology elements involved in the transmission of messages. This will get resolved overtime.

- CAVI's SCMS – security credential management system – was one of the most important products of the pilot. The significant investment made by TMR should not go to waste. ITSA can encourage reuse (with enhancements as needed) by the other agencies.
- OEMs to provide the same via their V2N connectivity

Deploy roadside stations and short range use cases for targeted fleets like emergency service, public transport (latency less than 2 seconds for traffic signal use cases such as vehicle priority, road works, VSL)

As the specific short range use cases get rolled out on existing tech (DSRC) for targeted fleets, the broader roll out issue of which tech will prevail longer term can be resolved and be rolled into new vehicles into the market

Brian Negus, ITSA Lifetime Achievement Award.
Member, ITS World Congress Hall of Fame.
Ambassador, ITS Australia.