CMC Newsletter June 2025: Australian C-ITS pilot project involves regular riders

---

In an industry-leading project known as the 'Connected motorcycle pilot', La Trobe university researchers integrated C-ITS in motorcycles and worked alongside the motorcycle industry and riders to develop technologies that can deliver advance warnings.These include alerts sent to riders in smart helmets, augmented-reality glasses, haptic wristbands and LED mirrors.

Collaborative effort

What makes this project stand out? In one of the largest real-world tests to date, these technologies weren't just lab-tested—they were taken onto a test track and tested at scale with regular motorcycle riders. The goal: assess technical performance, rider acceptance, and how the systems actually affect behaviour.

Eric van Vulpen from La Trobe University in Melbourne states:
“Working with the rider community from the start, we co-designed and tested prototypes. Riders were clear: alerts must be intuitive, timely, and not distract from riding: ‘Just tell me where the danger is—then I’ll deal with it'. ”

To enable safe testing, the team built the world's first left-side traffic motorcycle simulator for V2X testing using CARLA and Cohda MK6 hardware, and trialled it with nearly 200 participants. From there, they moved to the real world - equipping bikes with C-ITS and behavioural sensors and conducting live trials with nearly 100 Australian riders at Toyota’s Autodrome track in Altona North.
“This is the first time such an elaborate, collaborative effort has been made to understand how to make this technology work for motorcyclists.”

Does it work? The numbers say yes

The project implies that C-ITS does make riders safer.

In tests of forward collision warnings at 50 km/h, C-ITS gave riders an additional 8.5 metres to react. In intersection use cases, where the rider was not able to anticipate the hazard, the reaction distance doubled – from just 15 meters without a warning, to 30 meters with C-ITS alerts.

Rider confidence grew significantly throughout the trials. As one of the participants puts it: *“Many times there are hazards that are still hidden and pose great risk for me as a rider. I find that the system gives me a much-needed sixth sense when it comes to such hazards. I really hope it is going to be approved and fine-tuned and become available to motorbike riders.”*

Eric van Vulpen concludes: *"We have collected valuable data about reaction distance and times, braking, vehicle speed, throttle position and brake light sensor, to help determine the system's effectiveness and its usefulness to riders. The findings show strong potential for low-effort, high-impact warnings — like road surface alerts, work zone notifications, and other infrastructure-to-vehicle messages. The rider community seems ready—especially when they are part of the solution. With collaborative design and smart use of existing technology, the future of motorcycle safety can start now."*

Setting the foundations for safer roads in Australia

This pilot supports broader efforts by Australian governments to establish a framework for C-ITS, with road safety at its core. As motorcycle riders remain one of the most vulnerable groups on the road, this collaboration between industry, government, and researchers is a vital step toward Vision Zero—eliminating fatalities and serious injuries.

In this context, the '**Connected motorcycle pilot project**' aims to identify and test motorcycle rider C-ITS use cases that have the potential to reduce motorcycle crashes. Using existing C-ITS systems in Queensland and Victoria will allow the project to focus on developing the rider-system HMI and producing novel research on specific considerations for motorcycle riders in a connected system.

For more information:

https://www.infrastructure.gov.au/have-your-say/draft-principles-national-approach-cooperative-intelligent-transport-systems

https://imoveaustralia.com/project/motorcyclist-safety-connected-motorcycle-pilot/

https://www.latrobe.edu.au/news/articles/2025/release/groundbreaking-motorcycle-safety-alert-system2

Together for Rider Safety