



# Virtual Reality Driving Simulator for OLDER DRIVERS



In NSW, it is compulsory for older drivers to take a practical driving test every 2 years after their 85th birthday.

## What is the project?

This project will develop, “from the ground up,” a Virtual Reality (VR) driving simulator for older drivers. The simulator will have the capability to monitor and record driver performance information using a series of health and performance metrics during the virtual driving experience.

It will offer older drivers the opportunity to experience “virtual” driving scenarios using cutting edge VR technology. Users may choose to practice driving, test their relative driving skills to see if they would pass some of the elements of a “real life” driving test (e.g. response times) or simply just enjoy spending time exploring the created virtual world.

This project is considered a first-of-its-kind in Australia and has been funded through a grant from the Department of Health.

## The background

Driving is the key to independence for many adults. However, the ability to drive safely can begin to decline in older drivers, and therefore there is a need to strike a balance between continued independence of individual drivers and broader considerations of general road safety.

The decision as to whether to retain or relinquish a driver’s licence has a direct impact on the quality of life of older people and, often, on their need to access aged care services. Some research has shown that older people are more likely to access residential aged care once they relinquish their licence, even if their preference is to stay in their own homes.

Currently in NSW, it is compulsory for older drivers to take a practical driving test every 2 years after their 85th birthday. Similar requirements are also in place in other states and territories in Australia.

# Virtual Reality Driving Simulator

Helping drivers by harnessing emerging VR technology to give older drivers the opportunity to drive in a safe, low-risk "virtual" environment.





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## How will this project help older drivers?

This project will help older drivers by harnessing emerging VR technology to give older drivers the opportunity to drive in a safe, low-risk "virtual" environment.

It is expected that the virtual driving experience will help elderly drivers understand more about their competence as a driver and / or to practice driving without actually being on the road.

More than just a driving simulator, it will also monitor and record a range of important data and information from the user such as their response rate times and other important health and performance metrics.

This is expected to provide older drivers with important information to help them make an informed decision about their driving in a completely private, safe and non-intrusive environment where there is no obligation to disclose or share any aspect of their driving results unless they choose to.

## What about people with dementia?

The VR driving simulator is also being designed to be used by older people with medical conditions such as dementia to "re-live" the driving experience. Virtual driving scenarios modelled on the local township of Inverell, where McLean Care® provides home and community care services, residential aged care and independent living services, will include important local buildings and landmarks to make the user's experience as realistic as possible.

The simulator will also include different road environments and realistic driving scenarios such as country driving, driving in town and responding to various levels of road traffic.



MONITOR



RECORD



RESPONSE RATE



HEALTH



PERFORMANCE METRICS



SAFE ENVIRONMENT

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## Who is involved in the project?

McLean Care® is leading this project as part of its commitment to innovative service delivery for older people. Deakin University has been selected as the partnering organisation that will develop the VR driving simulator, drawing on their specialist research and development skills within the Virtual Reality field.

## Where will the simulator be based?

The driving simulator will be based in the regional NSW town of Inverell, at McLean Care's® residential aged care facility and open for use to the general community within the New England and North West region.

It will be housed in a special custom-built room that will optimise the VR experience for participants.

## Do I have to know how to use a computer?

No, not at all. No prior experience with computers or technology is required to use the simulator and instruction on how to use the simulator will be provided.

## What will the user experience?

The user experience has been designed to mimic real life driving as much as possible.

A number of considerations have been factored in to the design of the simulator to ensure it is very user-friendly and accessible for older drivers, including those with mobility issues.

This includes adjustable seat heights, a familiar Australian vehicle, and the graphics in the VR environment modelled on the local Inverell township. One-on-one support to fit and use the VR headset will also be provided.

Virtual reality has the power to transpose people from a physical world to a virtual world through the use of technology. The purpose-built VR simulator will combine elements of the physical world, in the form of a modern Australian vehicle, with computer generated elements that bring a virtual world to life.

With the support of trained staff, older people participating in the VR driving simulator will become immersed in the experience of "driving" a virtual vehicle through popular locations in Inverell, an experience that previously has not been possible.

This project involves research to look at what outcomes are achieved from the project and any perceived benefits that the simulator will bring to elderly drivers.

## What happens to the data collected by the simulator?

Each driver can decide how they want to use the simulator and will be able to access the data collected from their driving experience in either a printed or electronic format. Strict privacy considerations are adhered to and private information will never be shared without consent, including sharing of any personal information with third parties.

Part of this project involves research to look at what outcomes are achieved from the project and any perceived benefits that the simulator will bring to elderly drivers.

All aspects of the research will be undertaken in accordance with strict ethical guidelines and follow the appropriate regulations, and the privacy of users will be respected at all times. All data collected will be anonymous and unidentifiable meaning that the data collected for research purposes cannot be linked to a specific person.

The project team are intending to make the results and a summary of the research outcomes publicly available once research has been concluded.

## How can I get involved?

Like to learn more? Please get in touch with us:

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