MOBILITY CENTRE OF EXCELLENCE

SUPPORTING SMART MOBILITY SOLUTIONS
Our vision

To be a globally recognised thought leader, and centre of excellence, for the development, testing and transition of technology and systems that promote safe and sustainable transport solutions for all.

Developing a community of safer drivers

RACQ exists to make a positive difference in the lives of members and the communities in which they live. Access to safe, affordable and sustainable transport impacts our members’ quality of life as well as their economic prosperity and the liveability of the broader community. RACQ is committed to developing a community of safer drivers, in safer vehicles on safer roads.

New technologies are rapidly changing the way people travel and think about mobility. While it is difficult to predict how we will use transport in the future, RACQ will be an active participant in the evolution of transport, ensuring that safety, sustainability and equitable and affordable access are at the forefront of new and emerging transport modes and mobility enhancing technologies.

Keeping pace with the rapid rate of transport disruption is a challenge for not only RACQ, but also the broader sector and government alike. Globally, industry, government and research bodies are responding to this challenge by partnering to establish facilities to test and safely validate emerging technologies, develop new products and conduct research to inform policy and regulation.

The RACQ Mobility Centre of Excellence will be positioned as a world class facility offering safe and reliable testing of connected and autonomous technology, product validation and certification, education and facilities to support future mobility innovation and research through collaborative industry and academic partnerships.

The Centre is the flagship of RACQ’s wider ecosystem of ‘Smart Mobility Solutions’ aimed at ensuring that our members’ needs are being met both now, and into the future.

Located in Brisbane, Australia, the site will be the premier facility in the southern hemisphere for testing the performance and safety of connected and autonomous technology under controlled and realistic conditions. Embracing a safe systems approach, the Centre will also act as a test bed for connected infrastructure and support safe driving behaviour.

Conveniently located in the metropolitan area, only 35 minutes from the airport and the port, the Centre is spread across almost 45 hectares with six purpose built driving zones as well as garaging, office and training facilities.

Balancing future mobility with the needs of today, the Centre will also offer state of the art driver instruction and education across a wide range of users and high-risk groups, supported by expanded conference and training facilities.
Principles of operation

The operation and planning of the Centre will be underpinned and guided by three main principles that combine to promote safer drivers, in safer vehicles on safer roads.

**VISION ZERO**
We will foster a safe systems approach to road safety

**PROVING GROUND**
We will facilitate the testing and certification of safety enhancing technologies

**SMART MOBILITY**
We will support the development and deployment of research and ideas that contribute to a safer future
Operating streams
Backed by technical expertise through provider partnerships, the Centre will offer a wide range of services and products across four streams.
TESTING & HOMOLOGATION
- Advanced driver assistance systems
- Vehicle and motorcycle safety
- Emissions
- CAV standards and verification protocols
- Personal mobility devices.

ENGINEERING SERVICES
- Product development
- After market certification
- Research and development support
- Test plan development
- Regulation and certification.

EDUCATION & TRAINING
- Education and training programs
- RACQ school programs such as DocuDrama and Streets Ahead
- Conference facilities
- Community and industry use.

PARTNERSHIPS & LIVING LABS
- Global partnerships with industry, universities and research organisations
- Agglomeration and co-location of future mobility enterprises
- Technology development and commercialisation
- Garaging and leasing options
- Industry clusters and idea incubation
- Early stage testing, computing and cloud data management.
Our assets
Real-world conditions

The Centre will uniquely replicate a number of real-world environments, including city intersections, off road terrain, highways and rural towns, making it well suited to assess how autonomous and connected vehicles respond to edge cases. Varying pavement types will be available including unsealed, aged asphalt and different construction materials.

Road lines and signage will be unique to the Australian context and can be varied as required. Illumination can also be varied to simulate different driving conditions.

With temperatures in Brisbane varying between 0 to 40 degrees throughout the year, the Centre will offer the opportunity to test and certify under a wide range of environmental conditions including fog, heavy rain and strong sunlight.

With an abundance of trees and foliage, as well as varied topography and over-road structures, the Centre will enable testing of the attenuation of signals in natural environments as well as the performance of drones under varying conditions.
2ha of flat large vehicle manoeuvring bitumen surface
Can be flooded and configured for a range of scenarios

6km of 4WD track of various grades and obstacles

Figure 8 skid pan

3.5km winding road circuit with a 600 metre main straight

6,300m² Small vehicle manoeuvring area suitable for caravans or trailers
Can be flooded and configured for a range of scenarios

2,500m² Motorcycle training area
TECHNICAL EXPERTISE
Using accredited protocols and standards, our partner provider will offer services to evaluate and certify (where protocols and standards are available) Advanced Driver Assistance and Safety Systems (ADAS).

Beyond ADAS, we will offer highly qualified expertise in applied transport and human factor research and technical services related to connected and autonomous vehicles, intelligent transport systems, infrastructure design and assessment and standards and protocol development.

TESTING EQUIPMENT
To enable multiple testing scenarios, the Centre will maintain testing infrastructure and equipment including:

- V2X enable traffic lights and signs
- Guided soft targets
- ActivePS Static Adult and Child pedestrian targets
- Braking and steering robots
- Interaction vehicles
- Data monitoring and reporting software.
CONNECTIVITY AND DATA

Dedicated Short Range Communications (DSRC), operating at 5.9 Ghz, and Long-term Evolution (LTE) gantries and modules will be installed via road side units along the tracks to facilitate controlled signals to vehicles and connected infrastructure and to monitor and record responses.

The Centre will be 5G enabled and on-site gantries will be able to emit both 4G and 5G signals. Utilising Mesh technology strategies, dedicated data upload hubs will be located around the various testing zones for easy remote transmission of data using wireless, 90 strand fibre optics.

Additionally, a number of EV chargers will be available around the Centre.

SUPPORTING AMENITIES

Contemporary office space and conference facilities as well as climate-controlled garaging equipped with EV charging infrastructure and vehicle hoists.

Future development of a series of self-contained private office spaces, workshops and drive through garage areas will be provided for Centre partners.
A partnership approach to governance

The Centre will offer a unique partnership model where organisations will be able to invest in exchange for services or preferred Centre access.

Partners, including government and research bodies, will also have the opportunity to contribute to the development and future direction of the facility through their participation on the Centre’s Industry Advisory Group.

The Industry Advisory Group will play a key role in guiding the on-going development and direction of the Centre.

An Industry Associate Network will also be established to provide a channel for collaboration and clusters to share research and information and accelerated idea and product development.

Partnerships will be pursued to locate academic and research organisations at the Centre to concentrate future mobility expertise, facilitate collaboration opportunities, provide access to world class testing infrastructure and equipment, and operate post-graduate programs that will add to the body of knowledge supporting the deployment of mobility enhancing technologies for a safer future.

An Independent Board will be established to provide financial and corporate oversite of the Centre.
Benefits for, and beyond, Queensland

Connected and autonomous technology has the potential to save lives but, before it is deployed into Queensland’s transport network, we need to ensure that it is safe and reliable. The Centre will work with government to test and certify technology and develop standards and protocols for the approval of connected and autonomous technology. As we see these technologies safely enter the Queensland transport network, through both infrastructure and vehicles, we expect to see improved road safety outcomes which benefit all Queenslanders.

Beyond road safety, the Centre will generate a broader range of benefits including:

**GLOBAL PROFILE**
Positioning Queensland as world class leader in transport technology development testing

**RIGHT-HAND VEHICLE MARKET**
Local testing and certifying connected and autonomous technology using Aust. conditions and infrastructure

**EMPLOYMENT OPPORTUNITIES**
Direct and indirect job creation and the diversification of employment opportunities in the wider Brisbane area

**GREATER COMMUNITY REACH**
Expanded capacity to deliver quality driver education programs to the broader community

**INFORM POLICY SETTINGS**
Testing outcomes provide data for government policy relating to connected & autonomous technology incl regulation of driverless cars, drones & associated legal & insurance liabilities

**ATTRACTING EMERGING INDUSTRIES**
Leveraging the Centre’s profile to generate economic interest and investment in Queensland

**SUPPLY CHAIN STIMULATION**
Flow on benefits to associated supply chains in the transport, driver education, manufacturing and research sectors
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