



Providing an extensive range of vehicle autonomy, simulation and testing solutions, with unrivalled synergy across the Group



Automotive testing, verification and validation solutions encompassing dynamics, suspension and steering characterisation, durability, driver assistance systems and autonomy



Retrofit solutions that automate conventional vehicle fleets, focusing on materials handling, defence, mining and agricultural applications



Full-scale track testing services plus R&D services and consultancy in the areas of dynamics, humanmachine interaction, ergonomics, driver assistance, and autonomy



Simulation software and digital twins used to accelerate vehicle development including testing and validation of assistance systems, autonomy and vehicle dynamics



Pre-production and production quality assurance testing including comprehensive vehicle, component and function testing on public roads and closed test tracks



# The Group enables the development of vehicles in laboratory and virtual environments, validation on the track and then evaluation on public roads





Simulation software solutions





**Laboratory testing** solutions





**Driving simulator**solutions





Track testing solutions





Public road testing solutions





Retrofit autonomy solutions



#### On one has more experience



35+
years' experience
delivering vehicle testing
and simulation solutions



100% of the world's top vehicle manufacturers use our solutions



100+
vehicle models
developed using our
technology



450
talented people
employed across
the group



1,000+
driving robot solutions supplied globally



\$700m of approximate market capitalisation within this publicly listed business





### We are a truly global operation



We have offices in 7 strategic locations, within easy reach of the key players in today's automotive industry



We have distribution partners in 13 countries: Australia, Brazil, China, India, Israel, Italy, Malaysia, Mexico, Russia, South Korea, Taiwan, Turkey





#### Our customers are winners in their field





















Thatcham











































































































Our areas of expertise Driving Laboratory Track Simulators Testing **Testing** 



## Immersive simulators to enable virtual vehicle development for general automotive and motorsport, including ADAS, vehicle dynamics and HMI



## Dynamic Driving Simulator

Our most immersive simulator, combining a high-performance motion platform and high-spec audio and visual hardware



## Static Driving Simulator

A static simulator with display options that include an augmented reality headset. Features steering and brake haptic feedback systems



#### Desktop Driving Simulator

A high-powered PC workstation with Driver-in-the-Loop throttle, brake and steering inputs



### Workstation Simulation Solution

A high-powered PC workstation solution running high fidelity simulation models



## Laboratory-based solutions for suspension, kinematics and compliance and steering system characterisation

## Suspension System NVH Measurement

**ANVH 250** - Measurement and analysis of suspension system NVH from early in the development process



## Steering System Characterisation

**SSTM** - applies a varied range of forces and displacements to a steering system and measures subsequent feedback







## Kinematics & Compliance Measurement

**SPMM** - simulates on-road vehicle braking, accelerating and cornering for suspension evaluation, design and tuning



#### Deflection Measurement System

**SPMM option** - provides precision camera measurement of vehicle body and component deflections



## Centre of Gravity and Moment of Inertia Measurement

**SPMM option** - precisely determines centre of gravity and moment of inertia



## Solutions for the development and testing of ADAS, AV technology, and vehicle dynamics on test tracks

#### **Driving Robots**

Steering, pedal and gearshift robots can be installed in almost any vehicle for repeatable and accurate control during vehicle testing procedures



#### **Driverless Test Systems**

Retrofit driving robot and CAN bus solutions for operating vehicles without a driver, ideal for testing where there would be a risk to the test driver's safety





## Ground Traffic Control (GTC) Software

A solution for the centralised management of proving ground traffic – including vehicles, targets and track infrastructure – for improved efficiency and safety

## Robot Controller Software

Powerful software that enables customers to conduct complex, multi-object test scenarios using driving robots, by-wire and ADAS test platforms

#### Synchro Software

A software system for managing the synchronised movement of vehicles and targets so that they repeatably interact and intersect at the same time









#### Vehicle ADAS Test Platforms

Drive-over, self-propelled test platforms that carry impactable soft vehicle targets at up to 120 km/h

#### VRU ADAS Test Platforms

Pilotable test platforms for carrying VRU targets for including pedestrian, cyclist, moped and motorcycle dummies

#### **Soft Targets**

Impactable dummy vehicle and VRU targets that appear as real objects to vehicle safety systems













