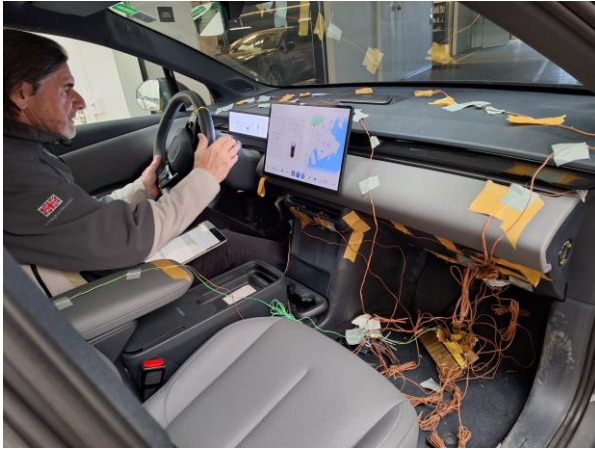


Pro2

OEM Supplier with a difference



Testing support you can rely on



LYNK & CO



LEYLAND TRUCKS
A PACCAR COMPANY



ASTON MARTIN



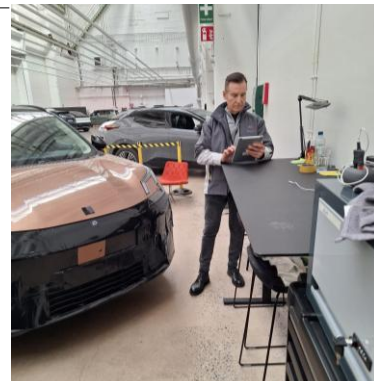
www.pro-two.com

Contact: Info@pro-two.com

Professional drivers by profession

Who is Pro2?

- ❖ Pro2 is a unique OEM supplier that offers a range of test and development programme support.
- ❖ Since 2007 at Pro2 Automotive Engineering Limited we have built a global reputation for providing specialist technical support and training to OEMs and customers
- ❖ We work with leading manufacturers such as Aston Martin, Bentley, Leyland DAF, Lotus, Lynk & Co and McLaren
- ❖ We have over 200 engineers/drivers with a range of experience and skill sets to call on, from Vmax experience post 200 mph to limit handling, software validation and quality testing to durability driving
- ❖ Our unique understanding of customer usage helps the development of better vehicles



Pro2 engineering capabilities

- ❖ Mileage accumulation in a wide range of vehicle types, including EV
- ❖ Range degradation and charger compatibility testing
- ❖ Durability testing
- ❖ Software validation
- ❖ ADAS testing
- ❖ In territory assessment
- ❖ Hot and cold climate
- ❖ Instrumentation and Data collection
- ❖ Data Analysis
- ❖ Benchmarking
- ❖ Subjective Assessment
- ❖ Component level focus
- ❖ Limit handling
- ❖ Refinement
- ❖ Comfort/ NVH/ Squeak and Rattle
- ❖ Brakes and Stability control
- ❖ Fault finding
- ❖ Project management
- ❖ Engineer training
- ❖ Customer and Test Route profiling



Vehicle Dynamics

Electric/Hybrid

Wet Handling

Durability

Tyre Testing

Accelerated Mileage Accumulation

Brakes – Foundation / Park Brakes / ABS

Core driving skills

High performance testing

Vehicle Performance Testing

Abuse Testing

Limit Handling

Winter/Low Mu testing

Vmax testing (>300kph)

Competitor/Attribute Benchmarking



Steering development

EPAS tuning

Suspension Kinematics & Compliance Testing

Attribute target setting

Performance figure generation

Enhanced driving and development

WLTP & RDE

HMI/Ergonomics/Usability

Energy Storage System Cycling and Performance Measurement

Connected Vehicle usability

Subjective to Objective review and correlation



Engineering team support

Pro2 offers a focussed engineering team with proven test and development experience to allow seamless integration and project delivery with the Pro2 team becoming an extension of your team.

- ❖ Dedicated project manager – Once we understand your precise needs and work flow we would allocate a named, dedicated project manager focused on managing your requirements. What this means for you is a single, empowered project manager who understands your processes and systems - always available, always up to speed with what's happening, able to adjust and fine tune as necessary.
- ❖ Seamless integration – we would offer a team with a mix of experience and broader industry knowledge to support T&D programmes. This would give you a team able to integrate seamlessly with your existing teams, understanding the requirements and delivering exactly what you want.



Flexible Targetted Resources

Pro2 bring highly experienced flexible resources that can increase to meet project requirements quickly, helping to keep costs low and budget focussed where it's needed

- ❖ Knowledgeable, Flexible and Responsive – as an experienced and focussed automotive engineering company we pride ourselves on a flexible and responsive approach to support requests, as well as the ability to resolve them.
- ❖ Specialist skillsets – with the resources that we have in our network of engineers we can bring in specialist skillsets when required to provide support for specific projects. Which means that you don't have to carry an overhead when it's not being used but you get the right skills to deliver support when needed.



Sector Specific and Customer Experience

As an independent team we can bring specific sector experience and customer knowledge to help eliminate internal 'blind spots' from the development process

- ❖ Sector experience – with experience of working with other manufacturers in the premium sector we can bring this experience to help you develop your vehicles with an understanding of competitor solutions.
- ❖ Customer knowledge – Pro2 is unique in that our background in customer experiential activity is matched by our engineering experience. We understand what customers want from their vehicles as we sit next to them every day and can use that understanding to make your vehicles better suited to your customers



Case Studies – ADAS & Software Testing

❖ **Hardware and Software validation, Electric Commercial Vehicles**

- Ongoing test programme validating electrical hardware and software releases for a commercial vehicle manufacturer, in a range of 12, 16 and 19 ton vehicles

❖ **Level 3 Autonomous software testing**

- Three month test programme to help OEM prove stability and safety with a level 3 autonomous software system. A mix of proving ground and road testing

❖ **Software validation, all features including ADAS & HMI**

- Ongoing test programme validating software releases for a high performance sports car manufacturer, testing all features including ADAS, HMI, Apple CarPlay and Android Auto

❖ **EV Quality testing**

- Ongoing test programme support OEM with testing for quality and software stability including OTA updates on a range of their VP, TT & Pre-Production prototype vehicles. Based in Sweden with a testing programme across Europe.

❖ **Twenty vehicle, Electric Vehicle Durability programme**

- Three month test programme to prove durability, running on a mix of public roads and proving grounds (Millbrook & MIRA) – providing ‘critical customer’ feedback



Case Studies – Vehicle Dynamics & HMI/Connected programmes

❖ Four vehicle ULEV dynamics benchmarking

- Pro2 delivered a benchmarking exercise on four ULEV's (BMW i3, Audi Q5, Lexus RX450h & Tesla Model X) against a set of vehicle dynamics attributes. Pro2 provided instrumentation, measurement, data analysis and reporting.

❖ Connected vehicle testing

- Pro2 delivered a programme testing connected vehicle operation under extremes of usage, including signal degradation and drop out, across UK road network. Consisted of route planning, provision of drivers, data collection, analysis of signal strength data (synchronised to location) and drop out effects.

❖ Pre-production MMI testing, MY23 & MY24

- Two month programme to test new MMI, mobile phone interface and ADAS software. Team requirements were for a broad demographic spread, different mobile phone platforms and same-sector experience to stress test the software prior to production sign-off.
- The quality of feedback prompted the OEM to adapt their process to include our testing for each MY release

❖ Customer perception, quality testing

- Independent quality and customer perception testing of wide range of attributes, including dynamic, refinement and static for a luxury manufacturer



Case Studies – Durability Testing & Mileage Accumulation

❖ **20,000 km Electric Vehicle Durability programme for OEM in UK**

- Three month test programme to help OEM prove charging compatibility and vehicle durability to support homologation of vehicle for the UK market. Pro2 designed and delivered the programme to characterise typical customer usage patterns.

❖ **Short and long term mileage accumulation for UK sports car manufacturer**

- Multiple public road duration programmes, from 1000 miles to 100,000 miles following mixed road types and usage pattern for a range of testing objectives, including emissions, WLTP and component testing.
- A mix of one, two and three shift day patterns, including running for 24hr/7 days a week continuously
- Including rapid proving ground mileage accumulation programmes, to achieve 4000 miles over two days.

❖ **Dust Ingress testing at European Proving ground**

- Providing specialist engineer support with requirement to conduct testing and report on findings

❖ **Eight vehicle, Electric Vehicle three month Durability programme**

- Three month test programme to prove durability, running on a mix of public roads and proving grounds (Millbrook & MIRA)

❖ **Vmax testing to meet OEM standards requirement at Nardo Proving Ground**

- Providing specialist test driver support to run at Vmax (>300kph) for continuous testing to meet OEM standards



Pro2 Operates Globally

We have delivered testing support across 20 countries, with teams ready to support any market



We would welcome the opportunity to discuss your testing support requirements with you!

- ❖ Send us an email to info@pro-two.com
- ❖ Check out our website at www.pro-two.com
- ❖ Book a no-obligation Discovery Call on Zoom/Teams

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