

PRESS RELEASE



10 November 2015

Ricardo plc
Shoreham Technical Centre,
Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

Ricardo pantograph monitoring system approved by Network Rail for roll-out

- **Ricardo Rail's 'PanMon' system accepted for roll out across the UK national rail network**
- **Product approval based on a successful two year in-service trial at Cheddington on the West Coast Main Line**

Network Rail, the UK infrastructure manager, has confirmed that Ricardo Rail's pantograph monitoring system – known as 'PanMon' – has been formally approved for use across the national network. Ricardo Rail is now working with Network Rail for a wider roll-out of the system, commencing with four sites on the West Coast Main Line (WCML).

This follows the successful completion of a two-year trial on the WCML, where the system proved capable of providing continuous and accurate measurements of pantograph uplift forces and defects (including chips, damaged end-horns and worn carbon strips) from trains passing at speeds of up to 125mph, meeting Network Rail's pre-determined technical and performance criteria for the trial. The PanMon system is now designated for roll out as a replacement for the current 30 year old Panchex system, which is reaching the end of its serviceable life.

Defective pantographs can inflict significant damage to overhead wires and associated apparatus. In extreme cases they can cause a de-wirement, requiring costly and time-consuming repairs and causing significant delays to services. While both pantographs – and the thin carbon strips they carry to draw current from the overhead contact wire – are subjected to thorough manual inspections during scheduled maintenance windows, defects can quickly accumulate.



Ricardo plc
Shoreham Technical Centre,
Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

Remote monitoring technology such as PanMon enables infrastructure owners to identify those vehicles operating on the network that are at greater risk of inflicting damage to the wires, often due to general wear and tear. It can also help Network Rail work with operators to take early preventative action and, ultimately, extend the life of both the wires and the pantograph equipment carried by the trains.

The PanMon system uses Sensys' Automatic Pantograph Monitoring System (APMS) to provide high definition images of each passing pantograph through a combination of radar, laser, video and photo technology, and an innovative new contact-less optical uplift monitoring system developed by Ricardo Rail in association with Italian-based optical monitoring specialists DMA S.r.l, Turin.

Using specialist "pattern-recognition" analysis software, the system automatically interprets the data to provide ongoing condition reports of each pantograph. This includes identifying the remaining thickness of carbon strips, and any damage to the pantograph's head, aerofoils or the end horns, which can affect a vehicle's ability to maintain good contact with overhead wires. The system can also measure the uplift of the contact wire resulting from the force applied by the pantograph – as uplifts exceeding specified limits can cause considerable damage to both pantograph and overhead wires.

Network Rail's Project Manager for the PanMon trial at Cheddington, Mike Dobbs, said "Getting new technology to work accurately and reliably in the rail environment can be challenging, but Ricardo Rail have worked closely with us during the trial to overcome the difficulties. I am delighted that we are now able to start the process of replacing our old Panchex systems with a 21st-century solution."

David Bishop of Ricardo Rail said "We would like to thank the Network Rail Project team and the WCML train operators and maintainers, especially Alstom and Siemens, for their feedback and support during the trial. We are now looking forward to working with the industry to spread the benefits of enhanced monitoring of this critical component across the UK network."



'PanMon' forms part of the Ricardo Rail Intelligent Rail suite of asset monitoring and measurement services aimed at helping rail organisations use real-time performance data to deliver tangible operational improvements. Other available modules include 'Infra-monitoring' and 'Smartfleet', which provide real-time monitoring of track and rolling-stock condition respectively, as well as other services based on wheel impact, noise, vibration and ride comfort measurements.

Ricardo plc
Shoreham Technical Centre,
Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

Ends



Ricardo plc

Shoreham Technical Centre,
Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

NOTES TO EDITORS:

Ricardo plc is a global, world-class, multi-industry consultancy for engineering, technology, project innovation and strategy. Our people are committed to providing outstanding value through quality engineering solutions focused on high efficiency, low emission, class-leading product innovation and robust strategic implementation. With almost a century of delivering value through technology, our client list includes the world's major transportation original equipment manufacturers, supply chain organizations, energy companies, financial institutions and governments. Guided by our corporate values of respect, integrity, creativity & innovation and passion, we enable our customers to achieve sustainable growth and commercial success. For more information, visit www.ricardo.com.

Ricardo Rail is the new rail consultancy and assurance business of Ricardo. Based on the former LR Rail business acquired by Ricardo earlier in 2015, it provides expert independent assurance and consultancy services to organisations across the industry to help develop, assure and improve the safety, quality and performance of the world's rail systems. Ricardo Rail has an international reach and presence through a network of 17 regional offices across Europe, Asia and the Middle East, with a team of over 450 rail engineers and specialists. Further information is available at <http://rail.ricardo.com/>.

Media contacts:

Andrew Foulkes
Ricardo Rail - Marketing Communications Manager
Tel: +44 (0)1235 753683 / +44 (0)7769 677413
E-mail: Andrew.Foulkes@ricardo.com

Anthony Smith
Ricardo Media Office
Tel: +44 (0)1273 382710
E-mail: media@ricardo.com