



7 October 2013

£3-million Future Railway competition seeks remote condition monitoring solutions

How can the rail industry exploit technology to remotely monitor the condition of the rail infrastructure? Innovators and developers in sectors as diverse as military and security technology, satellite communication and materials science as well as the railway are just some of those being invited to apply their ideas to address this question.

The 30 year vision for the GB railway, as set out in the Rail Technical Strategy, envisages intelligent 'self-monitoring' systems, which will enable targeted, risk-based, maintenance and repair of rail infrastructure assets delivering improved reliability, fewer delays, increased capacity, resilience, safety and all-round improvements in the performance of the rail business.

Remote condition monitoring (RCM) is already widely used on both trains and rail infrastructure, for example through Network Rail's Intelligent Infrastructure Programme. The future railway will be under more pressure to carry more passengers and freight, making RCM a necessity. However there are still significant railway performance challenges which do not yet have RCM solutions. This competition is targeted at 10 of these unsolved challenges and aims to offer innovators the opportunity to prove their solutions on the operational railway.

Working with the Network Rail and South West Trains Wessex Alliance to provide 90% funding, the up-to-£3million competition – due to be launched on Friday 18 October – will cover 10 specific challenges for remote condition monitoring technology demonstrators, previously identified through a series of industry workshops:

- 1) How to further reduce operational incidents by (near real time) analysis of existing data sets leading to predictive trend analysis



- 2) How to yield RCM alerts and alarms which are relevant, help ensure the right operational response happens in real time, and to use the data for predictive purposes to optimise safety and performance
- 3) How to detect and prevent potential safety risks using 24/7 High Definition visibility of the network
- 4) How to detect early the likelihood of flooding in risk areas with information provided in a timely fashion
- 5) How to secure the railway boundaries and monitor access gates
- 6) How to detect voids in the track at an early stage to prevent asset failures and to be able to identify the speed at which the asset is deteriorating from the impact loading of trains, particularly at critical, high risk junctions
- 7) How to achieve a validated system that monitors crack propagation in rail crossings
- 8) How to prevent trains running across track which is rendered unusable by movement of earthworks such as cuttings and embankments
- 9) How to achieve improvements in track circuit reliability
- 10) How to achieve improvements in signalling power supply reliability

Talking ahead of the competition launch, its Network Rail sponsor, Richard Dugdale said: 'What has been great about developing this competition has been the enthusiasm of the front line "challenge owners" and their readiness to work with suppliers who can help solve these genuine industry challenges and improve rail performance.'

David Clarke, EIT Director, added: 'This competition has the opportunity to be a win-win-win situation for the rail industry, for innovative suppliers and for passengers while moving us towards the industry vision of a self-monitoring predictive maintenance railway.'

The competition forms part of the Future Railway portfolio of activities to accelerate innovation led by the Enabling Innovation Team (EIT) on behalf of the Technical Strategy Leadership Group.

-Ends-

The competition will be launched on Friday 18 October. For enquiries about the competition itself, please go to www.futurerailway.org or contact EIT at RCM@futurerailway.org

Media enquiries, please contact the RSSB press office, on 020 3142 5333 / 5332 / 5331 or email pressoffice@rssb.co.uk

Notes to editors:

1. Remote condition monitoring (RCM) in this context is about using technology to monitor rail infrastructure remotely (away from the infrastructure itself).
2. RCM is seen as an integral part of the strategy to develop the railway of the future, and is referred to throughout the Rail Technical Strategy 2012.
3. The Enabling Innovation team forms part of the delivery of activities under the Future Railway umbrella, on behalf of the cross-industry Technical Strategy Leadership Group (TSLG). The team has been set up by the rail industry to accelerate the uptake of innovation. Our mission is to offer support to practical cross-industry demonstrator projects, but also seeking out innovative ideas and proposals from across the industry. Our approach is to: understand the challenges that industry faces; connect potential innovators with these challenges; and, where necessary with potential funding. The team is hosted by RSSB, and reports into TSLG, and is supported by the Rail Delivery Group, RSSB's Board as well as the Department for Transport.