



A Northern Class 156 at New Bridge on Esk Valley



Northern Rail trials GPS to track trains

Nomad Digital has equipped 14 trains on the Esk Valley line with tracking equipment to provide low cost and accurate information

▶ Passengers on the picturesque Esk Valley are getting more accurate travel information as Northern Rail trials GPS vehicle tracking capabilities on its trains.

The Esk Valley line (Middlesbrough to Whitby) is typical of many rural routes on Northern's vast 1,675-mile network. Providing accurate train running information can be difficult because the signalling on these routes often does not have the technology to automatically report a train's location. Northern, like other operators of rural branch lines, often doesn't know where its trains are.

The problem is that signalling equipment is expensive to replace, so Northern is trialling GPS as a lower cost alternative for tracking its trains. If the trial is successful, this solution has the potential to be used on many routes across the UK rail network.

The GPS tracking equipment has been supplied by Newcastle-based Nomad Digital, which has supplied train-to-shore data connectivity solutions to train operators in Europe and North America. In the UK, the company has helped East Midlands Trains to deliver on-board wi-fi to its passengers and Southeastern to remotely monitor systems on

its Networker rolling stock.

The Esk Valley trial sees a new application of this technology - the provision of low cost, accurate information to train users. Nomad has fitted GPS tracking equipment on 14 of Northern's Class 156 trains - these are the only trains that operate on the line. The equipment has been part funded by Network Rail and switches between two commercial mobile phone networks (Orange and Vodafone) to regularly report back an accurate position of each train to Northern's control centre. Staff can then use specialist software to keep information up to date at the stations. With just four trains a day in each direction, it's helpful for passengers to know if a train has been cancelled!

The information is filtered back to passengers via station announcements and on Northern Rail's website - where live departure boards for stations are displayed.

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TELEMAINTENANCE TRIAL

▶ Building on the success of the GPS trial, Nomad is now deploying Telemaintenance with Northern. This technology enables the provision of live train diagnostics data directly into the maintenance regime enabling more proactive and predictive planning.

Ultimately telemaintenance will deliver reduced operational costs and increased fleet availability. Nomad is providing this capability to its clients in partnership with EMEF, a wholly-owned subsidiary of Comboios de Portugal.

Initially door timing and door pressure will be monitored, as well as coolant level. The same communications architecture as the GPS solution will be used, so enabling significant savings in solution deployment.

The Class 156 solution will also measure throttle wires providing the operator with the ability to optimise the driving profile for a given route or train and so reduce fuel consumption.

In Portugal, EMEF have delivered 12% improvement in fleet availability and 10% reduction in energy usage with these type of solutions.

Meanwhile, as part of the project, Network Rail has installed customer information screens at three of the line's 16 stations - Whitby, Grosmont and Lealholm. This has been part funded by ACORP (Association of Community Rail Partnerships).

Rob Warnes, performance and planning director for Northern Rail, says that the trial has significant potential to make a real difference to the way Northern communicates train running information to passengers across its network. On a technical level he says that the trial is proving successful. The challenge, he says, is finding funding partners, such as local authorities, who are willing to contribute to the costs of this technology.

Angela Thirkill is development manager for the Esk Valley Railway Development Company, the community rail partnership which supports the Esk Valley line. She says that Northern's service is very reliable, but passengers still welcome the reassurance. The many visitors which descend on this scenic region are meanwhile accustomed to being able to receive this kind of information. And Thirkill hopes that better information will see more of them leave their cars at home. ■