

PRESS RELEASE

TTG Transportation Technology has secured its first contract for its new integrated Driver Advisory / Energy Metering (DAS-EM) System

London, 29 January, 2014 – First ScotRail selected TTG Transportation Technology to provide its Energymiser® Driver Advisory and Energy Metering System (DAS-EM) for the 40x3-car Class 334 EMU Fleet operated by First ScotRail.

The system comprises the award winning Energymiser® DAS deployed as an integrated Driver Advisory and Energy Metering System, to enable ScotRail to optimise on-time running and energy savings, whilst ensuring accurate and equitable billing to realise these savings, whilst also reducing the fleets carbon footprint.

The master smart display acts as the Driver Machine Interface with respect to the Driver Advisory System and as the Data Handling System integrated as part of the Energy Measurement System. The Energy Measurement System is fully compliant with the draft standard EN50463 with the functionality distributed between the Mors Smitt MSAV transducer and the TTG Smart Display.

The Mors Smitt transducer performs the Energy Measurement Function (EMF) as defined in EN50463-2 capturing the voltage and current measurements direct at the pantograph and provides the Energy Calculation Function (ECF). Short-term storage is provided on the MSAV for data-logging of these calculations.

The Smart Display performs the Data Handling System (DHS) function as defined in EN50463-3 requesting the Energy data calculated by the MSAV, aggregating the calculation data with a geo-location and time stamp and storing the data on secure non volatile storage for a period of up to 60 days.

The data is formatted on the DHS in accordance with the requirements of EN50463 and is uploaded off the vehicle to the billing server using the cellular network. The choice of billing server provider shall be defined by FSR and the data formatted in accordance with an agreed interface.

The managed Ethernet switch provides maintenance access and future growth for other systems such as remote condition monitoring and diagnostics.

Implementing an integrated DAS-EM solution provides many benefits in relation to cost, an improved capability to accurately measure and compare DAS and energy usage, reduced equipment, simpler



installation and reduced power budget. The integrated system provides validation and assurance of savings gained by comparing energy measurement data against route data logs generated by the optimiser.

The project will be completed in early 2014.

Mark Parsons, Energy Efficiency Engineer for First Group Rail Division said: "We will be working with TTG to ensure the system is deployed in an effective and timely manner and the project objectives are achieved. We are very pleased to continue working with this supplier, with whom our collaboration has pioneered the first application of DAS to the mainline railway in the UK. We look forward to seeing the many benefits this system can bring to our Operating Companies".

Dale Coleman, Group Managing Director of TTG, commented: "We are delighted to be the first company selected to supply an integrated Driver Advisory and Energy Metering system, demonstrating our commitment to the continued development of our system. Both systems are truly complimentary for electric trains and the benefit of an integrated system compared to two stand-alone systems is very clear".

About First ScotRail

First ScotRail operates 95% of all passenger rail services in Scotland. Part of Aberdeen-based FirstGroup plc, the train operator runs 2,300 services a day plus overnight Caledonian Sleeper services to and from London.

ScotRail has recorded significant passenger growth – up more than 30% to 83.3 million – since FirstGroup took over the franchise in 2004. It also employs 4,700 people, up more than 35% since 2004, and supports a total of £302.5 million in wages across Scotland.

For more information about the company, please visit: www.scotrail.co.uk

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About TTG Transportation Technology

TTG Transportation Technology is a leading international provider of products and services to optimise energy efficiency, schedules and network capacity of passenger, freight and heavy haul rail; at both planning and operational stages. Combining consultancy, software, engineering and manufacture with domain expertise in all facets of the industry, TTG's solutions are proven in use across 5 continents and specifically in Australia, the U.K., New Zealand, India and Africa.

TTG's flagship products follow 16 years R&D with leading universities: Energymiser® provides real-time driver advice and performance reports to reduce energy bills and emissions by up to 23%, improve on-time arrivals and utilisation of rail capacity, and reduce maintenance costs of trains and railway tracks.

TTG also provides simulations to optimise design of new rail alignments to minimise subsequent energy consumption and reduce maintenance costs. TTG is an ISO 9001 certified Clean Technology company with offices in Sydney, London, Derby and Beijing, has operated for 25 years, and is backed by leading Australian research and patented technology.

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For more information about the company, please visit: www.ttgtransportationtechnology.com

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