



Kabelwerk **EUPEN** AG
cable



High Speed 1 · United Kingdom

EUPEN CABLE delivers UK's first 2x2 MIMO capable LTE services via a single Radiating Cable



Customer EE Limited, a British Telecom plc Company
Network Rail, UK State Railway

Situation The High Speed 1 (HS1) is currently the United Kingdom's only high-speed railway.

The 109 km rail line between St Pancras International in London and the Channel Tunnel connects the international high-speed routes between London and Paris, London and Brussels and London and Amsterdam, as well as the domestic route from London to Kent.

The train companies currently operating on HS1 are Eurostar, who operate the international train services to Europe and London South Eastern Railway (LSER), who operate domestic services to Kent. Freight operator, East Midlands Railway and Thameslink are also serviced by HS1.

With the HS1 line passengers are able to reach Paris in just over two hours, Brussels in under two hours and Amsterdam in under four hours.

Challenges

EE Limited intended to provide to its customers on this line the most modern radio and data communication network available. Travellers on the line shall be enjoying high data bandwidth and best connection quality, that only LTE Networks can provide.

Providing radio communication in tunnels is a common use for radiating cables such as the EUCARAY® cables, made by EUPEN CABLE. However, new communication standards and the requirement by the increasing number of end users of the network to receive higher bandwidth, put new challenges to the whole communication network.

As the Tunnel Radio Systems have to fulfil a dual purpose, providing RF coverage for LTE voice and LTE data transmissions, it is imperative that they work at all times even in such hostile environments.

Solution

After an extensive pre-qualification and selection process, involving Radiating Cables from various Manufacturers, the EUCARAY® Radiating Cable RMC 158-E-HLFR "A"-Series from EUPEN CABLE was chosen.

This was due to Independent tests, that had shown that a MIMO transmission can be achieved by using a **single** EUCARAY® Radiating Cable by means of interleaving the MIMO signals, allowing a doubling of the bandwidth.

Based on its patented slot-design, EUPEN CABLE is worldwide the only manufacturer able to offer Radiating Cables that can provide solutions, allowing 2 x 2 MIMO streams over a single Radiating Cable. This leading technology allows EUCARAY® Radiating Cables to meet today's high performances and high bandwidth communication demands within the confines of a Tunnel.

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