



### CASE STUDY 1: HEAVY RAIL

Project: High Speed 1 (CTRL Phase 2)  
Project value: £4.9 million  
Client: Union Railways  
Main Contractor: EMCOR Ltd.  
Dates: March 2005 – June 2007

#### Background:

The CTRL Section 2 project geographical area encompasses 38 kilometres of new high speed track, six stations and three link lines to the Network Rail Infrastructure. The stations are:

- Singlewell Station (CTRL Section 1 connections)
- Ebbsfleet International (with North Kent connections)
- Wennington Station
- Dagenham Station (with NR cord connections)
- Stratford International (TMC cord connections)
- St Pancras (London West portals)

#### Scope of work:

The project requires the installation, verification and testing of the TVM430 signalling system. This work included:

- Installation of the TVM430 signalling system
- Installation of TAD 430 termination posts and boxes
- Termination of JES track circuit and ITL cables
- Preparation and termination of Intermittent Transmission Loops (ITL)
- JES track circuit installation, including rail drilling and termination of SVAC DB and BU units
- Installation of trackside capacitors (4ft) for JES track circuit
- Installation of SVPMM, IRJs and terminations
- Cabling and installation of AWS magnets at CTRL/NR interface
- Cabling and installation of TPWS
- Installation and cabling of HV Impulse Track Circuits
- Installation and termination of Close Door / Right Away (CD/RA)
- Installation of Emergency Replacement Switches (ERS)
- Installation and termination of Train Ready to Start (TRTS)
- Installation and termination of Engineers Zone Protection switches (EZP)
- Preparation and termination of ZCO3 4quad cables
- Preparation and termination of ZPFU 7pr, 14pr and 28pr cables
- Installation of yellow bonding
- 4ft mechanical installation of FGV and DGV beacons