

Project title	TPWS Mk4, OTDR and Rollback Protection Installation Design for DVT, 168/0/1/2 and 165/0
Client name	Chiltern Railways

SCOPE/OBJECTIVE

AEGIS was contracted by Chiltern Railways to supply the installation design for new TPWS Mk4 and OTDR's onto all their fleets; DVT, 160/0/1/2 and 165/0. This was required due to the de-commissioning of the existing ATP system. For the EMU fleets which cross LU infrastructure rollback protection was also required to replace the functionality removed by the decommissioning of the ATP.

Project Timescale- Design phase – 12 months
Project value - > £500k

TECHNOLOGY USED

AEGIS used Solid Edge to produce 3D models, and these are used to generate 2D installation, assembly, and detail drawings. AEGIS used Visio to produce the electrical schematics and wiring diagrams. Documentation is controlled using AEGIS MDSS document control.

HOW WE HELPED

Vehicle Surveys

Together with Chiltern Railways, AEGIS surveyed each fleet to define mechanical installations, electrical installations, and cable routes. During the visit AEGIS took appropriate measurements and cross checked these with the available drawings.

Concept Design

AEGIS worked with the equipment suppliers; TPWS-Thales, OTDR-Hasler and Rollback Protection-Gobotix to develop concepts to integrate the new equipment with the existing train control. Top level electrical schematics were developed and reviewed with stakeholders to verify the functional

integration concept.

Locations for the new cab controls were developed by discussions with Driver's representatives and Human Factors specialists to provide the best solution to integrate the new controls into the desk area considering the specified percentile range.

Mechanical installation concepts were developed using 3D modeling.

Detail Design

The concepts were developed to produce a set of 2D drawings, and associated deliverables for each fleet consisting of;

- Electrical Schematics
- Wiring Lists / Diagrams
- Installation Drawings
- Assembly Drawings
- Detail Drawings Bill of Material
- Human Factors Report

This documentation was reviewed with the client to confirm acceptance of the detailed design.

OUTCOME

To implement the changes a Modification Instruction was produced for each fleet which contains installation instructions, bill of materials functional, performance and commissioning tests.

The modification instruction along with the full set of referenced documentation is supplied to the client for them to use with their preferred installer.

AEGIS will produce a design assurance report We will also support all First in Class installations and supply an as-built drawing pack for each fleet.

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