

Project title	TPWS SIL1 Compliance
Client name	Unipart Rail

## SCOPE/OBJECTIVE

Unipart Rail has developed a TPWSfour© Control Unit (Option 5) and associated equipment to conform to the latest TPWS/AWS Railway Group and Industry Standards:

- GE/RT8075 issue 3 – AWS and TPWS Interface Requirements
- RIS-0775-CSS Issue 2 – AWS and TPWS Application Requirements.

Unipart Rail TPWSfour's© versatility means it can be used in multiple configurations. It can have a Control Unit Classic or a Classic plus Serial and is intended for both single and dual cab installations. The first Specific Application is the Siemens Class 700 (Desiro City).



AEGIS were appointed as Designated Body and Independent Safety Assessor for SIL 1 accreditation of TPWSfour©. SIL1 (System Integrity Level 1) is a complex accreditation designed to assess technical products to a very exacting set of standards which demonstrates very low levels of risk.

## THE TECHNOLOGY

TPWSfour© has two distinct parts: AWS and TPWS. The primary purpose of TPWS is to minimise the consequence of a train passing a TPWS fitted signal at danger and a train over speeding at certain other locations on Network Rail managed infrastructure. Additionally, it can be expected that TPWS will reduce the number of signals passed at danger (SPADs) at TPWS fitted signals. AWS

### AEGIS Certification Services

29 Brunel Parkway, Derby DE24 8HR  
[www.aegisengineering.co.uk](http://www.aegisengineering.co.uk)  
[info@aegiscertification.co.uk](mailto:info@aegiscertification.co.uk)  
+44 (0) 1332 384 302

provides the train drivers with in-cab warnings on the approach to caution signals, reductions in permissible speed and temporary / emergency speed restrictions, and to apply the brakes if a driver does not acknowledge cautionary warnings given by the system. TPWS has been designed to initiate a brake application independently of AWS in certain situations.

## HOW WE HELPED

Unipart Rail has achieved SIL1 compliance for its TPWSfour© system.

Luigi D'Angelo, Head of Assessment Body Services at AEGIS said "AEGIS were appointed as Designated Body (DeBo) and Hardware & Software Independent Safety Assessor (ISA) for this project. We undertook very careful reviews of Unipart Rail's already excellent documentation and conducted site audits in Leicester and Crewe where manufacturing is undertaken. We partnered with Unipart Rail throughout to support the innovation and manufacturing development, leading to the SIL1 accreditation for their new 'Option 5' Control Unit".

## OUTCOME

Paul Blackburn, Product Design and Development Director at Unipart Rail said "We worked with AEGIS Certification Services as we needed a partner who could support and guide us to achieve this standard. I created a team that put together a thorough process which we worked through over 18 months. To now receive the SIL1 rating is very rewarding."