

Testing Demonstration Equipment For A Major Railway Infrastructure Bid

PROJECT PROFILE: INVENSYS - WESTINGHOUSE RAIL SYSTEMS

The Challenge

Successful demonstrations of track-side equipment were part of the bid by Westinghouse for a contract to renew signalling, train control and train supervision systems on a large proportion of the London Underground.

The Solution

Hawkgrove delivered a system that enabled Westinghouse to carry out rigorous testing of many of the proposed signalling track-side and train-borne systems. The Hawkgrove solution provided accurate simulation of the metro system, supporting complete unit and integration testing of the systems proposed.

Results

Westinghouse was able to demonstrate the credentials and advanced capability of their systems. This made a contribution to the award in April 2003 of two contracts with Bombardier Transportation worth more than £850m.

Details

Hawkgrove adapted a System Test Facility solution, which they had previously developed for Westinghouse, to provide an extensive integration simulation of signalling, protection and control subsystems.

The System Test Facility comprised specialist Westinghouse hardware elements and PC based control software. To achieve maximum realism and optimise system verification, the hardware incorporated the final Westinghouse subsystems including ATP and ATO track-side and train carried elements (ATP: Automatic Train Protection; ATO: Automatic Train Operation).

In order to provide comprehensive testing, each of these train-borne devices could be substituted for a simulated subsystem, which could be configured to mimic a range of unit malfunctions.

All aspects of the System Simulation could be monitored and controlled through an interactive graphical interface. An interactive network map provided precise location and status information for each train, signal and other track-side devices. Separate windows provided access to detailed simulation data and replicated on-board controls and instrumentation.

Using this powerful solution, Westinghouse was able to test prototype devices, verifying correct individual functionality, and functionality of the integrated system within the specific context of the railways on which the system will be applied.



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