

Viper Innovations

Network Rail Region Utilises CableGuardian® Technology for Enhanced Insight and Monitoring of Its Signalling Power System



CableGuardian by Viper Innovations

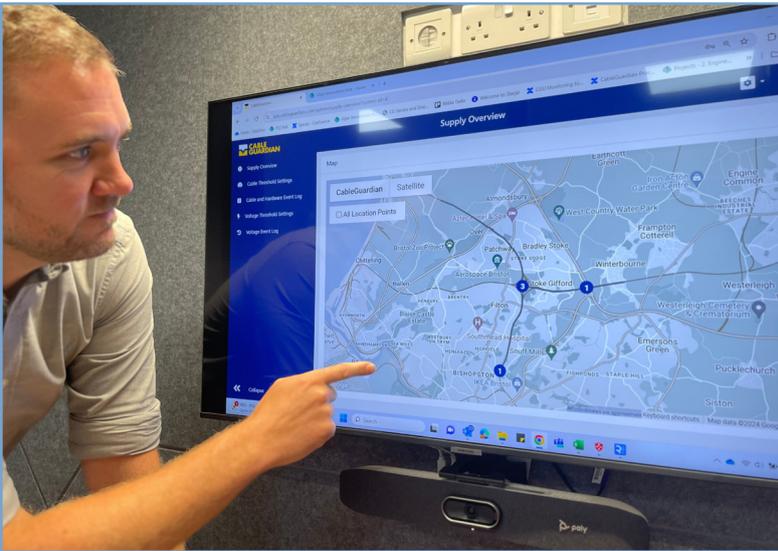
Rail technology supplier **Viper Innovations** collaborated with Network Rail Wales and Western Region (Yatton) to use the award-winning CableGuardian by Viper Innovations to optimise signalling power supplies asset management with precise insulation resistance monitoring.

Technology Upgrade

Network Rail Wales & Western region undertook a

project to deploy **CableGuardian** on the signalling power system (SPS), which had continually recorded low insulation resistance (IR) values within the intelligent infrastructure system (II). The signalling power system was an ageing asset monitored by a single insulation monitoring device (IMD) in a Tier 3 configuration, providing a single insulation resistance value within the intelligent infrastructure System (II).

The SPS asset comprised two feeders totalling approximately 13km in length and a relay room close to the principal supply point (PSP). All contribute their individual IR values to the total network IR



The CableGuardian Portal

The CableGuardian portal uses colour coding to identify which sub-network section is below the alarm levels along with symbols to indicate the sub-network section with the lowest IR as well as the sub-network section with the lowest normalised IR, a unique feature of CableGuardian indicating the lowest IR/km.

To measure insulation resistance, CableGuardian considers all the switchgear and ancillary equipment associated with the SPS, not just the feeder cables. The data within the CableGuardian portal indicated that the issue lay within the relay room rather than the feeders, removing the need to obtain possession, putting 'boots on ballast', and testing the feeder cables only to find that the issue lay elsewhere.

value reported within II. Because of this, the causes of the low network insulation resistance values were not immediately evident. The traditional method of identifying the cause(s) and location(s) for the low network insulation resistance is to disconnect and test each cable section.

However, Network Rail Wales and Western region (Yatton) decided to install CableGuardian in a Tier 2 configuration, with an individual CableGuardian unit monitoring each feeder. This would give Network Rail insight into their asset, which was unavailable until then.

By installing CableGuardian, Network Rail's E&P engineers could see the individual insulation resistance measurements taken by the CableGuardian hardware, better understand their asset and decide how to address the issue.

From the data captured by CableGuardian, Network Rail could quickly review the status of its assets from its office rather than having to have 'boots on ballast' to test the cables and obtain this information.

- The data from the CableGuardian portal showed one feeder to be 2.75km long with an IR measurement of $>500k\Omega$
- The second feeder to be 10.3km long with an IR measurement of $>500k\Omega$
- The 20m cable to the relay room had an IR measurement of $50k\Omega$

CableGuardian provided Network Rail with an understanding of their asset that they previously had yet to have and reassured them that the insulation resistance (IR) values of the individual feeders were above the levels that would have meant that further attention was necessary. The cause of the low insulation resistance value associated with the relay room emanated from some ancillary equipment rather than cables, and the appropriate steps were taken to address this and bring the SPS out of the low IR alarm status.

Now that CableGuardian had been installed in a Tier 2 configuration on the SPS, this provided the Network Rail engineers with a technological alternative to the 5-yearly manual cable testing requirement NR/L2/SIGELP/50000.

CableGuardian by Viper Innovations is providing Network Rail with greater insight and understanding of its assets. It also empowers the rail industry to move from the uncertainty of periodic testing to a real-time condition-based approach.

Click [here](#) to find out more about CableGuardian by Viper Innovations.

www.viperinnovations.com

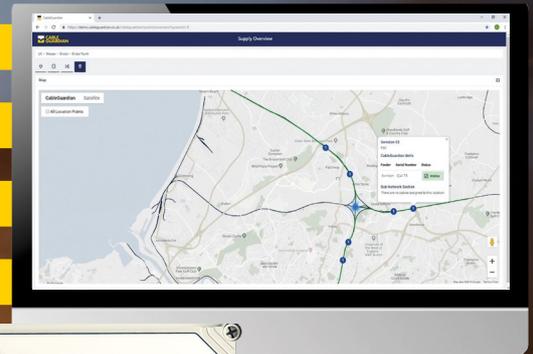


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