

# Viper Innovations

## A New Asset Management Milestone as Viper Innovations CableGuardian Hits the Million Metres Mark



**M**uch safer trackside working, huge reductions in delay minutes, massive efficiency savings and a great leap forward in sustainability – CableGuardian, by Viper Innovations, has proven to be a safe bet for investing CP7 (Control Period 7) funding.

Signalling power supplies, often overlooked until they malfunction, carry profound safety risks and can severely impact railway performance. However, with advancements in technology, the landscape is evolving.

In partnership with Network Rail, Viper Innovations has diligently refined monitoring technology for lineside signalling power, yielding impressive results.

Continuous monitoring of over a million metres of cable has eliminated thousands of man-hours of on-or-near-the-line work, mitigated operational disruptions and prevented penalty payments exceeding £5 million\*. Furthermore, hundreds of thousands of delay minutes have been eradicated from the network, and a revised maintenance regimen promises millions of pounds in expenditure reduction per control period. However, the best is yet to come.

Up to press, CableGuardian has excelled in identifying the disconnection of earth rods at location cases and thus prevented electric shock. The technology pinpoints latent defects in cable joints, stopping a large-scale power outage on the main line while detecting high-resistance contacts in fuse holders and allowing detection of loose cables and general

wear and tear in switchgear. Other benefits of CableGuardian include detecting hidden overloads on circuits, stopping repeat fuse failures on a mainline signalling circuit, and identifying and enabling intervention due to the general degradation of cables, therefore preventing a number of significant failures. CableGuardian has also enabled fault teams to pinpoint failures on circuits that have remained undetectable for prolonged periods, reducing risk to maintenance staff, and eliminating large amounts of OPEX. The system has even negated the need for a large equipment renewal by quickly identifying circuit failures. These day-to-day interventions have provided excellent improvements in safety, performance, efficiency and sustainability, and clients are now looking at a much bigger prize.

Recently introduced changes to standard NR/L2/ SIGELP/50000 Safe Working and Maintenance on or near Signalling Power Distribution Equipment above 175V AC, facilitated by the collaboration between Network Rail and Viper Innovations, have ushered in a next-generation insulation monitoring system and service, enabling a new paradigm of total asset management. Through CableGuardian's technological innovation and collaborative service offering, the removal of the need to manually strip down and test systems once every five years, based on national standards for electrical safety, is opening the door to a new, safe, efficient and sustainable asset management regime fit for 21st-century railway operations.

The previous periods lacked modern, effective and remote continuous monitoring with comprehensive parameters. This required a complete strip down and test of the lineside asset, making maintenance engineers and asset managers act on evidence found during the test. These actions could be confounded because the test might only represent a snapshot in time affected by weather and other climatic conditions and not present a complete or accurate reflection of the asset condition. These working practices, driven by necessity due to a lack of credible technology, have held the industry back and enforced a regime of mass equipment renewals that undoubtedly have removed perfectly serviceable equipment, en-masse, costing millions of pounds over the years.

The introduction and moulding of CableGuardian technology and service over the last few years has provided insight into a critical asset previously hidden. This new ability will move to a position where spot

replacement of assets can be enabled, the maximum number of failure modes can be predicted and prevented and manual maintenance can be taken to the lowest possible level. Continuous improvement is now a reality, and with it will come even greater insight into asset lifecycles, enabling safe, effective and high-performing life extension works for as long as the client decides.

With over a million metres and a growing number of monitored cables, switchgear and transformers lineside, CP7 (Control Period 7) will be different. Safety, performance, efficiency and sustainability will move to the next level, with Network Rail driving even more benefits from CableGuardian and Viper Innovations.

Click [here](#) to learn more about Viper Innovations or download Viper Innovations CP7 Bid Support [document](#).

*\* The monetary value is determined through an analysis conducted with clients, assuming a delay of approximately 5 to 10,000 minutes per mainline failure, based on Schedule 8 penalty payments associated with mainline operation and an approximate operational expenditure (OPEX) of £10k per incident, based on detailed failure analysis. Each failure is estimated to cost between £500k and £1m conservatively.*





Proven Tier 1  
monitoring technology  
supporting rail  
operators since 2018

**5+**  
**YEARS**

# MILLIONS TO BE SAVED IN CP7 WITH NEW APPROACH TO LIFE EXTENSION OF SIGNALLING POWER ASSETS



**CableGuardian** is a Network Rail approved Tier 3, Tier 2 and Tier 1 cable monitoring system as specified in NR/L2/SIGELP/27725 – Insulation Monitoring and Fault Location Systems for use on Signalling Power Systems.

Our unique technology provides unparalleled insights across the lifecycle of a system, moving to a true condition-based asset management approach that allows cable faults to be quickly and accurately located.


CableGuardian also complies with the updated Standard NR/L2/SIGELP/50000, now permitting remote continuous monitoring of Signalling Power Distribution equipment. Network Rail Approved: PA05/06538

**£5M SAVED**  
in penalty payments

**30K AVOIDED**  
in delay minutes

**£150K SAVED**  
in maintenance costs

**1M+ METRES**  
of network monitored

 **CABLE  
GUARDIAN®**  
A VIPER INNOVATION

**Helping passengers arrive on time**

Find out more...

[www.viperinnovations.com/cableguardian](http://www.viperinnovations.com/cableguardian)

