

CASE STUDY



Hitachi Rail Deploys New IP Cameras System Using Existing Coax Network Infrastructure

Summary

- Hitachi Rail needed to upgrade from an analog to an IP camera system
- Installing new CAT6 infrastructure would be too costly and disruptive
- Hitachi Rail leveraged existing coax cabling to improve the digital transformation outcomes

Hitachi Rail, a subsidiary of Japanese conglomerate Hitachi, delivers innovation through the development and maintenance of trains to drive sustainable connectivity. Hitachi Rail designs and manufactures signaling systems, components, and other technologies to manage and control new or upgraded railway systems worldwide.

Problem

In coordination with Advantex Network Solutions, Hitachi Rail needed to replace an outdated analog CCTV system with a new IP surveillance solution. The customer wanted to deploy IP cameras throughout the Hitachi Rail Ashford Depot in the southern region of the United Kingdom. However, the installation of CAT6, fiber optic cable, and additional networking closets threatened the project with high costs, complexity, and business disruption.

Solution

Having already used NVT Phybridge products, Michael O'Connell and Tony Easingwood of Advantex Network Solutions suggested leveraging the existing coax cabling using the CLEER family of Ethernet over Coax (EoC) solutions. NVT Phybridge CLEER switches deliver up to 50 watts of power (PoE++) and 10/100 Mbps symmetrical, full-duplex, over coax cabling with up to 6,000ft (1,830m) reach, which is 18 times farther than standard solutions.

Result

Hitachi Rail was impressed with the proposed solution and decided to move forward with the project. "The deployment was very straightforward with the training we received from NVT Phybridge," said Michael O'Connell, Advantex Network Solutions. "We pre-built the entire system within our pre-build area, which allowed us to allocate each port to an EC Link+ (NV-ECLK-PLS) and then to its IP camera. When deployment began, each device was installed into its planned location."

The new CCTV was installed within the Ashford Hitachi depot across all the external stabling, covering the whole perimeter and access/egress to the site. The NVT Phybridge EoC technology leveraged the existing coax cabling, eliminating the need for costly and disruptive infrastructure changes. Additionally, the system is easily expandable, as the customer can deploy extra IP cameras using the EC4 (NV-EC-04) adapter, which enables up to 4 IP endpoints from a single coax cable run. Hitachi Rail and Advantex Network Solutions were extremely satisfied with the project's outcomes, having achieved incredible results for the customer.

- Reduced network infrastructure costs by £350,000
- Reduced deployment time by 14 weeks
- Eliminated potential disruption of regular train schedules caused by construction and re-cabling work throughout the rail depots

Sustainability

Hitachi Rail's mission is to "contribute to society through the development of superior, original technology and products." One of its sustainability goals is to reduce CO2 emissions by 50% by fiscal year 2030. In line with the organization's overall environmental sustainability and carbon reduction goals, NVT Phybridge EoC technology allowed the reuse of existing cabling, preventing over 635 kilograms of e-waste.

NVT Phybridge Power over Ethernet Switches and Extenders

Enable IP Cameras, IP Phones, or Any IEEE-Compliant Device



PoLRE: Single-Pair UTP up to 1,200ft (365m)



FLEX: Multi-Pair UTP up to 2,000ft (610m)



CLEER: Coax up to 6,000ft (1,830m)