GEOSENSE
Infrastructure

The Chase Line Electrification, UK

PROJECT SUMMARY

PROJECT: Electrification of Walsall to Rugeley Railway Line

DATE: 2019

CLIENT: Network Rail

CONTRACTOR: ABC Electrification

CONSULTANT: Atkins

OVERVIEW

The Chase Line (Walsall to Rugeley) Electrification Project in the West Midlands covers a stretch of 10 miles of track with the route snaking through both urban and rural areas, including the densely wooded Cannock Chase, both in cuttings and embankments.

The project involved the erection of masts to carry the overhead line through some areas of historic shallow mining where differential settlements could cause issues with the masts.

For most of the route very few locations offered significant linear direct lines of site for wireless radio communication from Nodes to central Gateways. After signal coverage testing along the route, the WI-SOS 480 long-range remote wireless tilt meter monitoring was considered the safest, most sensitive and the most cost-effective solution.

MONITORING

Due to the potential for settlement to occur on the masts which could cause tilting and misalignment of the overhead line, there was a requirement to monitor the movement of 92 equipment masts for a 12-month period after loading.

WI-SOS 480 Tilt Meters were attached to the base of the masts and protected specially-designed plastic covers to prevent vandalism whilst still allowing the radio signal to be effective.

Following signal coverage tests the Gateways were placed on three locations.

All WI-SOS Nodes have extended battery life of up to 10 years meaning there was no requirement to access the Nodes in restricted areas along the rail track. The Gateways were solar powered for long term performance.

The raw data from the Gateways was forwarded directly using secure FTPS to GeoAxiom Vista data visualisation software accessed via the internet.

PRODUCTS USED

WI-SOS Tilt Meter
Long-range 800MHz wireless battery-powered tilt meters.

WI-SOS Gateway
GPRS Gateway, solar-powered.

GeoAxiom Vista
Easy to use data visualisation software designed to allow the user to retrieve data in or near real time and process the information in map, profile or graph formats.

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