Case Study – CELtek Central Management System

Project: M1 Junction 21-21A

Client: Highways Agency A One+

OUTLINE

Following the widening of the M1 motorway as part of a project to improve road user safety on this busy piece of highway, a Central Management System was required to control lighting between Junctions 20 and 21a – a stretch of road of about 3 miles. The client required an open protocol to provide a future proof system. Lighting circuits were to be Group Switched with monitoring of individual luminaires. It was necessary that the system had the ability to switch off the Light Control Units (LCUs) during the day with no ill effects to the system. Management via a clear and secure web-based browser was essential to provide fault diagnostics. All units and gateways were to be fully mapped.

CHALLENGES

- Limited space allocation
- Existing PECU Operation
- Extra Options required for failsafe operation:
    - Operation by PECU through Gateway for normal night-time switch on /off
    - Operation by overriding PECU through Gateway, allowing 24-hour maintenance
    - Operation by manual override switch / bypass PECU & Gateway
- UPS Battery back up in case of mains fault

SOLUTION

Working with the luminaire manufacturer Urbis, LCUs were supplied to them to fit into the gear trays in order for the luminaires to be supplied complete.

MAC addresses were scanned via barcodes into the excel spreadsheet, and the column numbers added to this as allocated by A One+. LCU positions were mapped by Northings and Eastings as provided by A One+.

Distribution Pillars were designed and manufactured by us to house the control gear and Gateways with externally mounted antennae. UPS battery backup systems were fitted within the pillars.

The scheme has been successfully installed providing the client with real time lighting control, monitoring, measurement, and reporting providing energy savings.