

A470 Tidal Flow Control System

The section of the A470 to the North of Cardiff City Centre between Corbett Road and Maindy Road operates a Tidal Flow System. The A470 at this point is a three lane urban highway.

The replacement system supplied by Ematics comprises new Thermotor LED type Variable Message Signs (LCS) signs. There are three double-face signs on each highway Gantry - i.e. in the replacement system, all three lanes are controllable, not just the centre lane as per the old system. There are also three advance warning Thermotor LED type Mimic signs, one at the Inbound entry to the Tidal Flow section, one at the Outbound entry and one at the centre

Ematics Scope

Provide Thermotor Road Signs, New master Controller PLC's and upgrade of existing SCADA system to accommodate the upgraded road signs, Other provisions were as follows:

- PLC Control System Design
- PLC Control Panel and Manufacture
- SCADA System Upgrade Design
- Software Design and Development
- Installation
- Testing and Commissioning
- Interface Management

Interface Management

- Fibre Ring (Ethernet) network interconnecting the 3-off Gantry PLC's to the Master PLC.
- Master PLC to SCADA (Factorylink graphics) system server at County Hall
- SCADA system server to SCADA system Client at County Hall
- SCADA system server at County Hall to Cardiff Council's Urban Traffic Control (UTC) system

The Tidal Flow system consists of:

9-off Gantry-mounted double-face Variable Message Signs (LCS) mounted on 3-off Gantries.

3-off roadside-mounted Mimic VMS signs – whose aspects (displays) complement those of the Gantry signs.

1-off Gantry Local Control Panel (LCP) per Gantry – allowing for maintenance override and checking of an individual sign's aspect (display).

1-off Mimic LCP per Mimic sign – allowing for maintenance override and checking of an individual sign's aspect (display).

1-off Gantry controller (PLC) per Gantry – performing control and monitoring of the Gantry's 3-off signs (and of the nearby Mimic sign) on behalf of the Master PLC.

1-off roadside mounted Master controller (PLC) – performing coordinated control and monitoring of the Gantry PLC's, and communicating with the SCADA.

1-off roadside mounted Master Local Control Panel – in the same cabinet as the Master PLC, and allowing for system-wide control of all signs in the event of the failure of the SCADA system.



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