BACKGROUND

AGD Systems, one of the UK's leading manufacturers of ITS product solutions we're hired to commission a radar traffic flow detection system at Southwark Tunnel.

THE PROBLEM

The Highways agency identified that a system was required to detect traffic at Southwark Tunnel. This was necessary for two reasons firstly to make a timely response and render assistance to people and vehicles stranded in the tunnel. Secondly to avoid slow or stopped vehicle events, which had the potential to escalate into major incidents. The main requirements for the traffic flow detection system included reliable detection of actual events in the tunnel whilst at the same time maintaining low false alarm rates to the operators. Experience on other tunnel sites has shown that in the face of persistent false alarms traffic operators become desensitised to legitimate alarms which can end up being ignored.

A further requirement was that the equipment should be unaffected by changing environmental conditions. This can include ambient light levels from luminaires or a build up of dirt on the devices themselves. The effects of heavy sunlight or rain should also be minimal. Finally, the on going performance should not be dependant on regular and therefore expensive routine maintenance.

AGD required an asset management system that could reflect the asset requirements in a timely manner. Also the data should be presented to the operator in an Accessible format.

SKILLS & EXPERTISE REQUIRED

Web engineering, System engineering, Software design, Project planning and App development

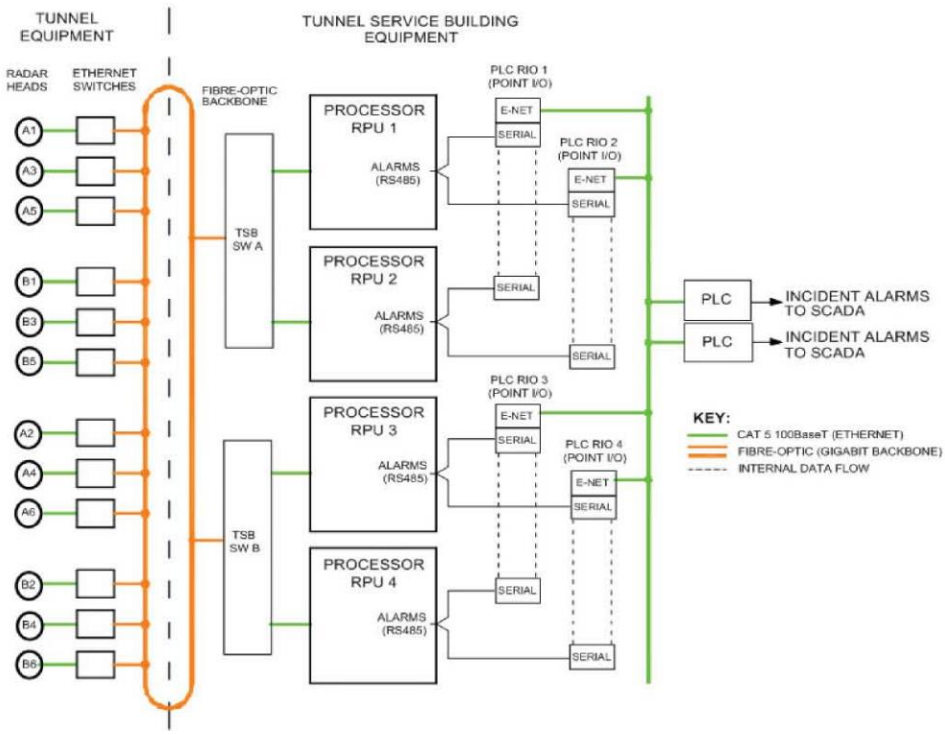
We host our clients' API and CMS projects on our cloud infrastructure that is reliable, secure and affordable. Our hosting services are easy to scale as demand increases.

SOLUTION

Hangar 19 proposed that the Radar processing systems report back into our asset management tool; ViaModus. The data would include event classification and the location along the tunnel bore. This was reported into 100 meter lengths, with a numbering system that corresponded to the designations of the cross pathways.

Radar is a "line of sight" system, and so during the design process at Southwark tunnel, locations were chosen for each radar sensor that ensured the best coverage and minimised the number of sensors to be installed.

After installation and software commissioning a series of site acceptance tests would be run. These would involve staged scenarios with vehicles (slow moving, stopped and reversing), people and simulated lost cargo. Alerts would then be automatically triggered to the Operational dashboard.



OUTCOME

The launch of the Southwark Tunnel traffic flow system was a success. In total 10 radar were installed, with 5 units in each. The design included a good deal of overlapping coverage, for maximum resilience. In the event of a power or radar sensor fault, most areas were covered by an additional radar. During tunnel operations a number of events have been detected by the system. During these events the Viamodus system displayed the tunnel schematics with the location of the alarm and the classification, enabling an operator to quickly identify the alarm locations. In addition an image from the closest CCTV camera is shown automatically in the system for each alarm generated. With reliable incident detection, and a camera image the operator could quickly make a decision as to what action to take, within the framework of the incident response plan.