Rail Control Room

Signalling Control Systems

> " We were chosen to supply the hardware platform for the Bakerloo upgrade because of our rail experience and ability to provide an end-to-end service - including certification, rack integration and project management. This formed a low-risk strategy as part of a significant upgrade programme to improve the Transport for London passenger experience. "

**Peter Drake,
Business Development
Director, Captec**

Transport for London (TfL) run the day-to-day operation of the Capital's public transport network. The Bakerloo Line control system on the Underground needed to be replaced by a modern equivalent to address obselescence issues. This involved the replacement of central computers with modern hardware. The new hardware will be used as the central hub of a network of site and communication computers, with its functions including indicating the current state of signalling, the live position of trains and general service data.

Requirements & Issues

◥ Redesign and modernisation of central and logging computers, previously supplied by Captec and running 24/7/365 for over 20 years

◥ Computers positioned in the station equipment room directly above the track, so must be designed to minimise susceptability to EMC interference caused by trains

◥ Meet 5 9s availablity, where downtime is less than 5.26 minutes per year

◥ Achieve reliable operation in fluctuating temperatures that can be experienced across rail networks

◥ Provide a holistic service including design, engineering, testing, certification, rack integration and installation

TRIED, TESTED & TRUSTED

The Solution

▸ Design and engineering of 1U and 4U computers for integration across four equipment room racks, while maintaining a similar architecture with enhanced functionality

▸ By engineering for minimal electric noise emissions, testing at our pre-compliance facilities and managing the certification process, the computers fully meet the EN 50121:2006 standard

▸ Architecture including dual computers, redundant power supplies, RAID storage and spares provisioning enables the computers to meet TfL's 5 9s availability requirement

▸ Industrial components, including a power supply unit and motherboard with extended operating temperatures, secures a wide range of 0-55°C

The Outcome

▸ From design and development through to certification and on-site installation, we managed the entire process to successfully roll out fully-integrated computers that meet the stringent requirements of the rail industry

▸ With an extended product roadmap, industrial components and rigorous testing, longevity and continuity of supply is fully optimised to 15 years

▸ Owing to the reliability and longevity of the computers previously supplied, TfL had high confidence in Captec as a technology partner

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