



Major Tourist Attraction

Case Study

An 'Eye' for Complex Control and Automation Systems

Background

The British Airways London Eye was conceived by husband and wife architects, David Marks and Julia Barfield. Their dream, to create an exciting new way to see and understand one of the greatest cities on earth. The spectacular views over London could now be seen from capsules that dynamically rotated in unison with the rotation of the giant rim. And a landmark



The Challenge

During the construction and delivery phase, the London Eye faced many challenges before millions of people could experience its wonders. For example, one of the world's tallest floating cranes was needed so that the massive quarter sections of the rim could be lifted onto 8 temporary platforms, floating on the Thames. Each passenger capsule was designed to be just within the maximum width allowed on French roads over which they made their way to the English Channel and up the Thames.

As a major tourist attraction, the London Eye and its 32 viewing capsules have strict protocols to ensure the safety of passengers at all times and a single point of failure will result in each capsule being manually brought down. Although French companies have been responsible for its construction and control and automation, it was Automation Software Engineering (ASE), that came to the Eye's rescue over two years ago when a software failure brought the Eye to a halt and meant that it might not be operational during a busy Christmas Season.

ASE's project engineer, explains: *"The day before Christmas Eve 2001, the system suffered a PC hard disk failure in the control room. Because there was no working back-up PC available, this single point of failure meant that the London Eye had to stop immediately because of the safety procedures involved. The IT people rang the company in France, who installed the control system, but they were unable to travel to the UK to fix the problem."*

Solution

After a several hurried calls to Schneider Electric in the UK, the SCADA suppliers. ASE responded to the emergency to re-configure the PCs in order to get the system up and running again and for the attraction to take on fare paying passengers. ASE's years of extensive knowledge and application of FactoryLink systems and other Schneider equivalents had the giant wheel fully operational within half a day by working overnight on the project. But the London Eye was no straightforward project. It was carefully conceived and is more sophisticated and complex than most attractions. There is a vast amount of complex equipment on board each capsule to control doors, lights, air conditioning etc and a large number of alarms, the data for which is collected by two PLC's for each pod. These PLC's transmit radio frequency signals to the two main PLC's in the control rooms, and the data is brought up on a mimic screen to show the status of equipment – on or off – and the position of each capsule during each turn.

ASE upgraded the London Eye's back-up PC with Monitor Pro v7.0 SCADA and replaced 4 old PCs - all related to the SCADA - with new Dell equipment. This required a replacement of ISA bus serial cards with PCI dual serial port cards ordered from Brainboxes. **ASE has gone some way to bring the London's Eye's control and automation systems up to the standards expected of one of the world's major sightseeing attractions.**

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Benefits

- Spectacular views over London
- Safety improved
- Wheel was fully functional in 1/2 a day.

Project Statistics

- World's tallest floating crane
- Pods the width of roads in France
- 32 viewing capsules
- World renowned tourist attraction
- Position of each module monitored
- Strict safety protocols

System Characteristics

- Strict safety protocols
- SCADA System
 - Monitor Pro
 - FactoryLink ECS
- Emergency repair and re-configuration
- Complex equipment per module
 - 2 PLC's per Pod
 - 64 PLC's
- Backup controllers