EUWC project

Network Rail

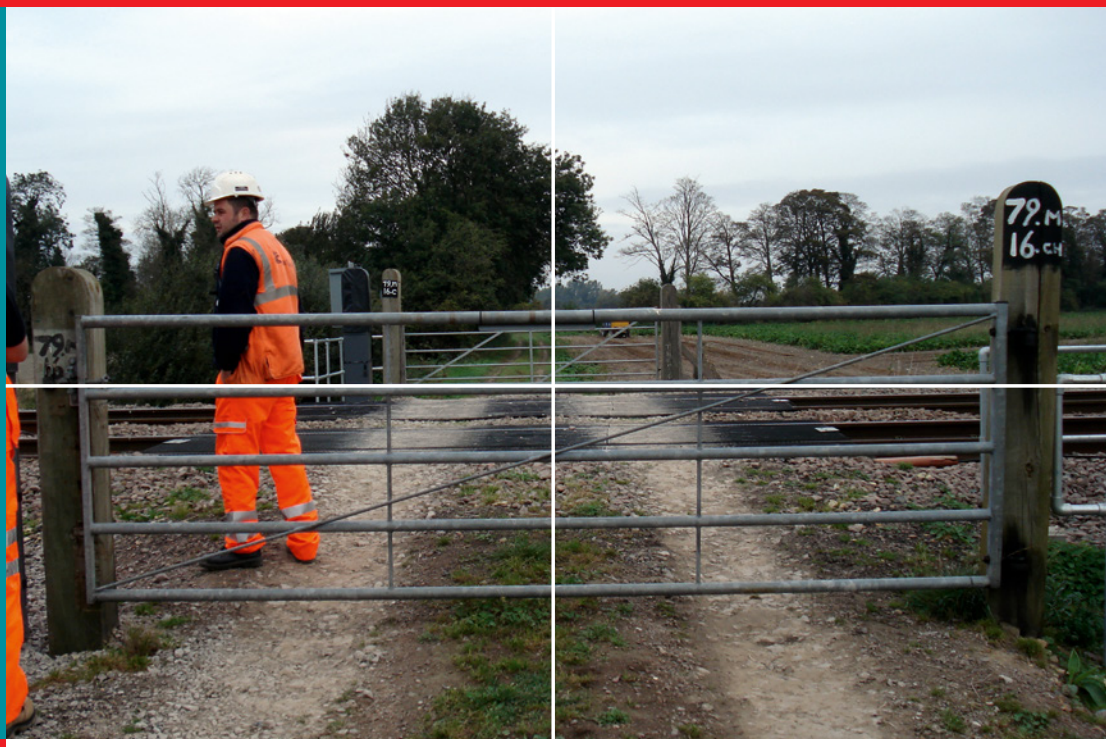
ACS2000 and RSR123

Country
United Kingdom

Segment
Main Lines

Application
Level crossing protection

Project start
2011



CASE STUDY | EN

Requirement

There are about 600 level crossings (LC) sites throughout the Network Rail operation, which are known as user worked crossings (UWC). A UWC is a crossing where the user opens and shuts the gates manually when they need to cross the line. User worker crossings are normally found on rail tracks that run through farmers fields or through bridal paths or open fields where the owner has to cross the track to reach their land. UWCs are usually equipped with swinging gates or lifting barriers. The goal of the EUWC project was the enhancement of standard User Worked crossing to higher safety levels.

Project details

EUWC to higher safety level. System to include axle counting features to SIL 4 level plus audio and visual warning systems. The operating system must include the provision of power in three forms, ie standard signalling cable, plus solar and wind power. The requirement was to implement an axle counting system which was operational to SIL 4 safety level and to enhance this with both visual and audio warning systems which would provide extra safety for the user. The complete system had to be designed, manufactured and supplied within a tight costing budget set by NR.

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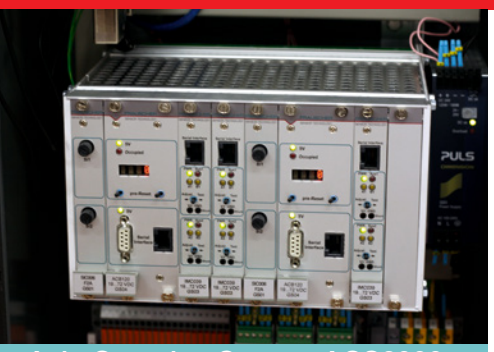
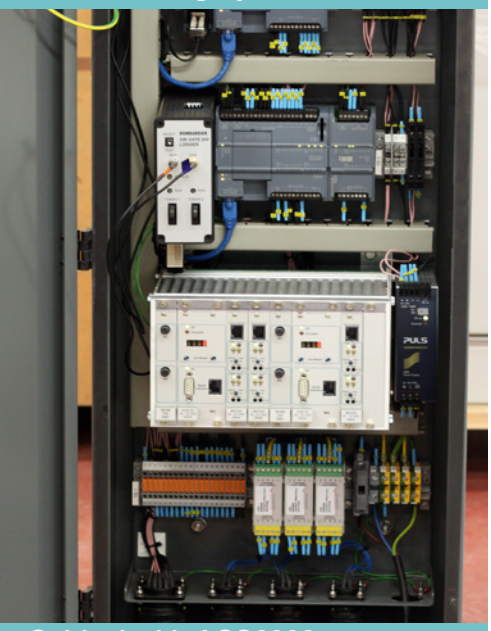


Axle Counting System ACS2000



Cubical with ACS2000

Project solution

Bombardier Transportation designed their EBI Gate 200 modular system using the Frauscher wheel sensor RSR123 as the preferred method for wheel detection and the ACS2000 axle counting system as their preferred method for track vacancy detection. The RSR123 provides wheel detection at three points on the track, one wheel sensor by the crossing, one wheel sensor 1.5 kiloms before the crossing and one wheel sensor 1.5 kiloms after the crossing. Track vacancy detection and axle counting is provided by the proven ACS2000 system. 'Posts' situated by the crossing were used to house all detection equipment along the visual and audio warning equipment developed by Bombardier.

Benefits

- Developed to CENELEC standards EN 50126, 50128, 50129, and 50159 offering Bombardier a fully approved technical solution to SIL 4 safety level.
- Modular and compact system allowing Bombardier to design the ACS2000 system to easily fit into the track side housing units.
- Rail Claw and Wheel Sensor are very quick to install/remove for maintenance (3–4 minutes track side) and are adjustable to all main rail profiles used in the UK.
- Drilling the rail is not required to fit the Wheel Sensor and Rail Claw.
- Competitively priced system with overall costs within the Network Rail budget.

Operator	Network Rail
Client	Bombardier Transport UK
Scope of Supply	Level Crossing System
Scope of Project	2 track sections, 3 counting heads
Axle Counting System	ACS2000 with IMC and ACB
Wheel Sensor	RSR123

Frauscher Sensortechnik GmbH
Gewerbestr. 1 | 4774 St. Marienkirchen | AUSTRIA
T: +43 7711 2920-0 | F: +43 7711 2920-25
E: office@frauscher.com | www.frauscher.com