



Case Study | UK

The Wherry Lines benefit from Speed Measurement

The Wherry Lines are railway branch lines in East Anglia in the East of England, linking Norwich – Great Yarmouth – Lowestoft.

Requirements

The project aimed to integrate Frauscher Advanced Counter FAdC into two external systems in order to mitigate against a train passes a red signal without authority on approach to level crossings.

The first being a method of predicting the likelihood of a train passing a signal at danger based on its speed, the second being a Fast Acting SPAD Trigger (FAST) in the event that a train does traverse past a signal showing a red aspect.

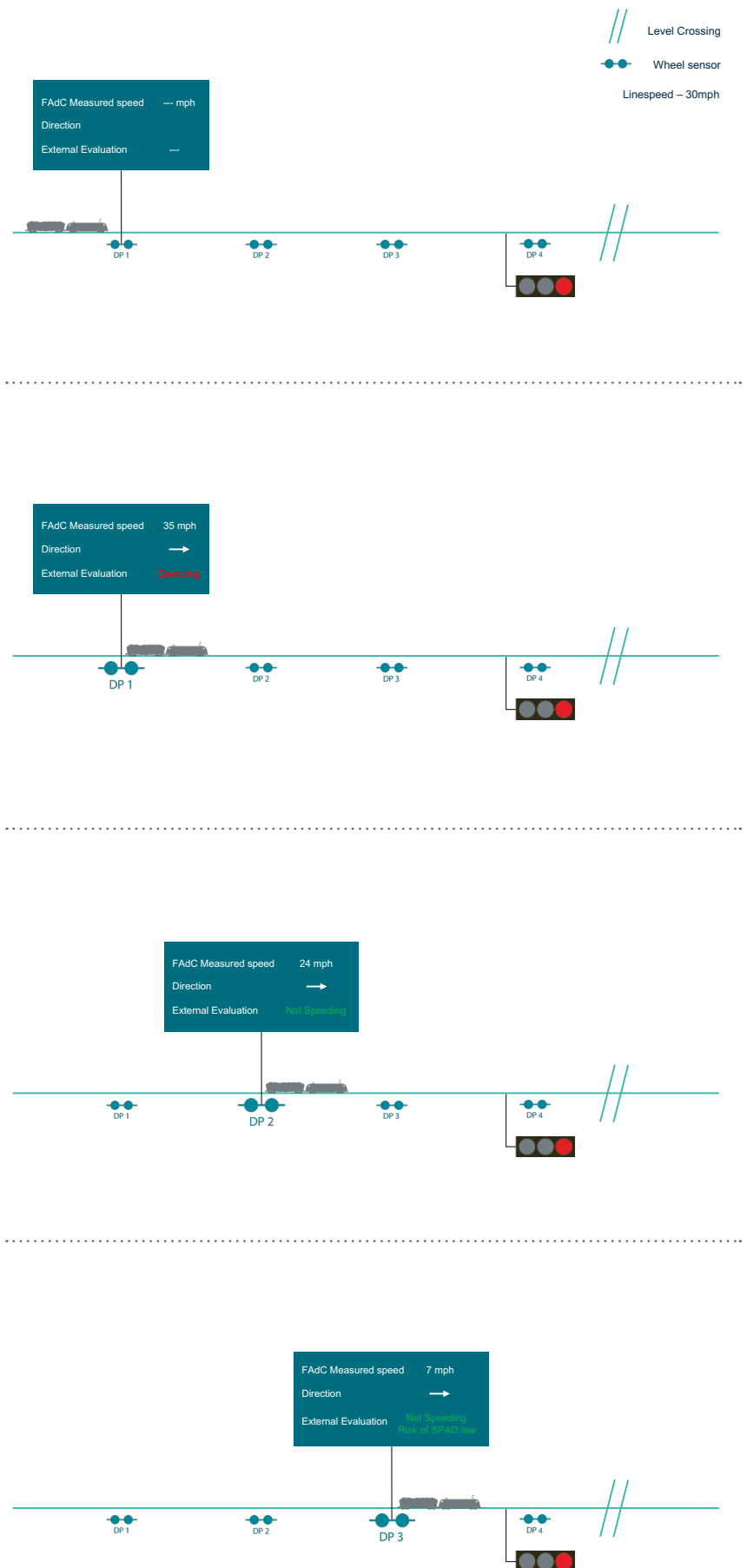
Both systems were required to be a SIL 1 level, and have the ability to communicate with an ElectrologIXS Interlocking.



Solution

To predict the likelihood of a red signal overrun, the FAdC was configured to output the RSR123's speed measurement information. The external system was set up to match the trains' speed to a threshold. If the threshold is exceeded, it is assumed that the train is likely to be unable to stop before reaching the signal.

If a red signal overrun has occurred, an RSR123 issues a 4-edge direction pulse to the external system. This triggers a "fast action" to the level crossing – the road signals turn to red within 0.5 seconds and the barriers close.



Benefits

At the location, there was already an ongoing project to install a FAdC system using the Wheel Sensor RSR123. Therefore, our customer preferred to use the equipment being installed for signalling purposes in the area. This gave the added benefit of reducing the lineside equipment which also leads to reduced maintenance costs in the future.

The RP2009 protocol was already in place from pre-existing signalling in the area. Therefore, the COM-RP board offered full integration without the need for hard-wired outputs from the FAdC rack.

Project details

As no data of previous speed measurement accuracy was available, Frauscher facilitated and undertook tests to determine the accuracy of the speed measurement at the speeds requested by the customer.

The outputs are taken via the RP2009 protocol which facilitates communication with the ElectrologIXS interlocking.

Additionally, a formal SIL assessment was successfully undertaken by Atkins to achieve the required SIL 1 level for the system.

Key Facts

Operator	Network Rail	Wheel Detection	Axle counting, treadle, speed measurement
Partner	Atkins	Country	UK
Scope of Supply	Signalling	Application	Speed Measurement
Scope of project	Additional functionality from signalling equipment	Project start	2020
Axle Counting	Frauscher Advanced Counter FAdC and Wheel Sensor RSR123		