

DSL communication solution

# Oberweißbacher Berg- und Schwarzatalbahn

FAdC® and RSR123

**Country**  
Germany

**Segment**  
Main Lines

**Application**  
Train detection

**Project start**  
2013



CASE STUDY | EN



## Requirement:

To increase the overall safety the Oberweißbacher Berg- und Schwarzatalbahn (OBS) railway implemented an automatic train control operation system. Until that point in time the train control operation was performed by authorised operating personnel where the train controller and train drivers were entirely responsible for safety. A major target was to keep the total costs to a minimum.

## Solution:

OBS opted for the AZB plus system from the companies V+S Ingenieurgesellschaft and FES Bahntechnik. The central component of the system is the FAdC axle counting system, providing failsafe and reliable train detection. The data transmission is realised through a VPN tunnel within the public DSL network.

## Benefit:

Thanks to the Ethernet interface and the easily adaptable software configuration the data transmission of the FAdC system can be customised to suit different requirements. Communication over a public DSL network or even wireless transmission is not an issue. The necessity to lay new cables between the location equipment cabinets is obsolete, which significantly reduces the life cycle costs.

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Wayside control track magnet



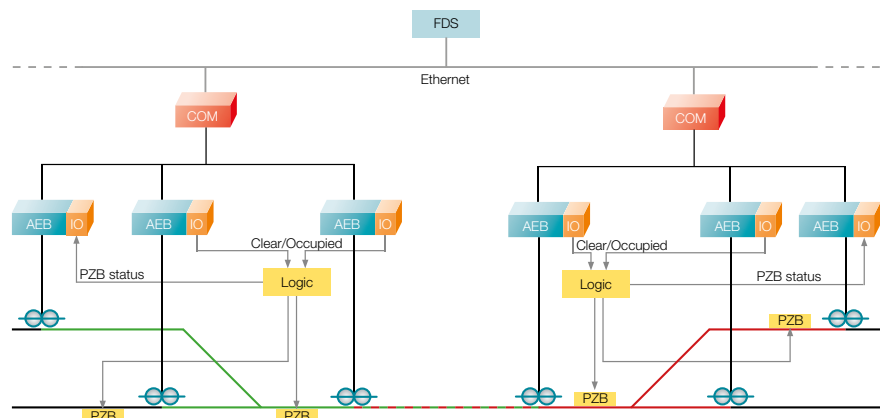
FAdC



Mounted RSR123

## Project details:

The automatic train control operation system is mainly used on regional lines with simple operating conditions. This system protects trains from entering occupied track sections. The evaluation of the clear/occupied status is carried out at the adjacent location equipment cabinet. Wayside control track magnets are responsible for initiating the emergency braking on the train, if a track section is already occupied. Operational activities are performed automatically and do not require the involvement of staff.



## DSL transmission

The data transmission is realised through DSL modems in location equipment cabinets. These modems transmit their data over a public DSL network. Although the DSL network connection is automatically reset once a day causing a short interruption, the axle counting system is not affected by that. Only if the interruption exceeds a certain time frame, the axle counting system changes to the failsafe occupied status. The staff is then able to reset the system using the predefined reset procedure.

## FAdC

Thanks to the software configuration of the axle counting system FAdC, parameters like modem or communication delays as well as time-outs can be defined quickly and easily. Another essential advantage of the FAdC is that the amount of data sent per second can be also adjusted. This leads to a more reliable transmission and to a higher availability of the whole system.

Through the modern Frauscher Diagnostic System (FDS) all relevant data is made available either to the dispatcher or for the purpose of remote maintenance. Apart of the clear/occupied status, information about the status of wayside control track magnets, power supply status of cabinets and the state of charge of the batteries is also provided.

## Partner

FES Bahntechnik, V+S Ingenieurgesellschaft

## Customer

Oberweißbacher Berg- und Schwarzatalbahn

## Scope of Supply

Delivery of components

## Scope of Project

16 track sections, 22 counting heads

## Axle Counting System

FAdC with Wheel Sensor RSR123