



Case Study | France

Innovative solution for availability management of Tram Bordeaux Line D

Challenges

The D line of the Bordeaux tramway is a tram line around 10 kilometres long, stretching from the Place des Quinconces, where it connects on the C line, to the Cantinolle terminus. One of the main challenges of D Line is both the availability and reliability of the signals that allow rolling stock to move without incident.

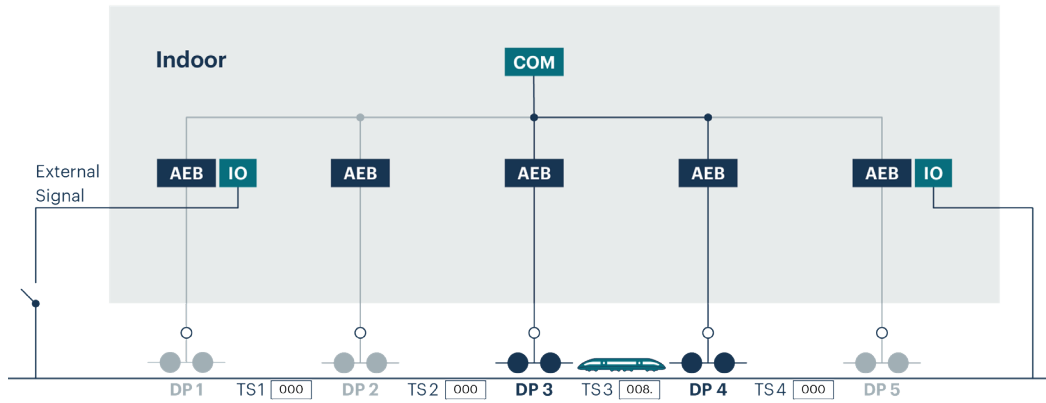
VOSSLOH and Frauscher France collaborated on the implementation of 1 manoeuvring zone and a single track section from Picot Station to Cantinolle Station.

Solution

In general, in dual track, the operation of a tram system is that of Line of sight. This means that it is the driver who performs the “signalling” function. The driver controls and regulates the speed of the tram in order to ensure there is the necessary spacing in relation to the previous tram.

For track vacancy detection the Frauscher Advanced Counter FAdC was used with the wheel sensor RSR180. In support of the availability of operations, this system incorporates innovative management methods, including Counting Head Control CHC.

In order to compensate for the counting errors, which are common in urban areas as they are often caused by stray metal objects (cigarette papers, soda cans, etc.), some track sensors can be set to “sleep” under certain conditions. Thus, the system is not disturbed due to untimely occupations. Counting heads only “wake up” when a train occupies the adjacent track section. This innovative concept patented by Frauscher has been implemented without additional hardware as part of the D-line market.



CHC Active counting heads at traversed sections

Simple and fully customizable, as part of line D, the Counting Head Control algorithm waits for three successive disturbances which are not related to rolling stock to “wake up” the counting head and indicate an occupation.

For all French tram networks equipped with a Frauscher axle counting system, the Bordeaux tramway is the first French tram system to benefit from this innovative concept.



Picture 1: Rail Claw SK420



Picture 2: Frauscher Advanced Counter **FAdC**

Key Facts

Operator	Keolis	Application	Track vacancy detection
Partner	Vossloh-Cogifer	Axle Counter	Frauscher Advanced Counter FAdC with relay interface and SIL 4
Country	France	Wheel Sensor	RSR180
Segment	Tram		