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Press release

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Barcelona trials a pioneering automatic vertical door that enhances safety on metro station platforms

The innovative solution has been installed for the first time on an urban network on an experimental basis as a result of a collaboration between TMB and STraffic

The metro system of Barcelona (Spain) has become the first in the world to put into operation, on an experimental basis, a set of **vertical platform screen doors**, an innovative solution to improve passenger safety and comfort and, at the same time, enhance the safety and regularity of train traffic.

The pilot test started in May this year and is the result of a collaboration between the local public operator **TMB** and a consortium of companies and technological institutions from South Korea headed up by **STraffic**. It had been put into operation on one of the platforms of the Can Cuiàs station, on **Line 11**, located in the metropolitan area of Barcelona.



Vertical platform screen door modules in the Barcelona metro for the pilot test

Vertical platform screen doors (VPSD) represent an **alternative to platform doors that open horizontally** and which are already installed on many automated lines, including Line 9/10 and 11 of the Barcelona metro. They consist of a fixed vertical structure with guides where two transparent rigid panels slide up and down in a similar way to a window blind: they come down to form a physical barrier about 160 centimetres high between the train and the edge of the platform, and they fold upwards to let passengers on and off the train. They are designed to work automatically, synchronised with the passing of trains.



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Adaptable to a wide variety of metro systems

Compared to horizontal sliding doors, vertical ones offer the advantage of providing **much broader access spaces** of over 7 metres, meaning that it is not necessary for trains to make highly precise stops nor for them to have exactly the same distribution of doors. For that reason they are appropriate for a wide variety of line systems, even those that combine trains of a different series as is the case on some of Barcelona's metro lines.

Other notable attributes of vertical doors are that they are quicker and easier to install compared with horizontal doors, there is less need for structural reinforcement and less impact on traffic flow during their installation. Maintenance costs are lower due to their having fewer mechanical parts.

Reliability and integration test

On the platform chosen for the test, which is not usually used for passenger traffic, **two vertical automatic door modules** have been installed by STraffic. Successive operational reliability and integration tests will be performed on this equipment for at least six months and, if the results are favourable, tests will continue on their commercial operation with passengers. The series 500 trains used on Line 11 that are involved in the tests are composed of two carriages with a capacity of about 300 people.

The features that are expected to be tested represent, above all, a **benefit for users**, given that a physical separation between the waiting area and where the trains are running improves personal safety, especially on crowded platforms.

In terms of their operation, another plus for the **safety and reliability** of the service is eliminating the risk of people falling onto or trespassing on the tracks. Another advantage might be the ease with which the manoeuvre to change direction at the end of the route can be automated, thus saving time and improving service frequencies.

The trials at Can Cuiàs are the first ones for an automatic vertical door system on an urban metro network given that, up until now, they have only been installed on some suburban lines in Asia.

The launch of the pilot test is the result of an agreement signed in December 2017 by the management teams of Metro TMB and STraffic, with the support of the Korean Transport Institute, the company Woori Tech Co. Ltd., the Korean Association of Railway Signalling and the Korean Commercial Association.

TMB is the main public transport operator in the metropolitan area of Barcelona (Spain), where it manages the metro network, consisting of eight lines and 158 stations, in which travel 1.3 million people every weekday. Barcelona is an international reference in the field of

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innovation and digitization applied to urban transport. The use of technologies and intelligent systems allows high efficiency, the best service and the maximum social and environmental benefit.

Traffic (www.traffic.co.kr) is a specialized transportation company in Korea. It has various experiences for more than 25 years in the transportation industry which was started from Samsung Electronics originally. Based on its industry wise technologies, it has developed vertical platform screen doors (VPSD) for railroad industry and particularly for passenger safety and better experiences of accessibility.