

Alstom's APS catenary-free technology makes Spanish debut on Barcelona's tramway

- **Alstom introduces a dynamic ground-based feeding system (APS) – the first time in Spain – removing the need for catenary while ensuring the tram can run as normal**
- **The new extension of Barcelona's tram network can transport up to 24,000 passengers per day, thus helping to remove around 2,000 cars from the city centre**

11 November 2024 - The Barcelona Metropolitan Transport Authority (ATM) today put into commercial service the new extension of Barcelona's tramway, an extension of approximately two kilometres – that incorporates Alstom's innovative catenary-free technology, known as APS. This extension can transport an additional 24,000 passengers per day, thus helping to eliminate around 2,000 cars from the city centre. Barcelona's tramway is in the backbone of the city's plan to encourage more sustainable mobility, with a commitment to eco-friendly, accessible, equitable and healthy urban development.

Alstom has been responsible for the design and supply of the new ground-based dynamic feeding system (APS) which eliminates the use of catenary while maintaining equivalent performance. Alstom's teams in Madrid and Barcelona have been responsible for both the APS elements – required in the infrastructure and the adaptation of the current fleet of 18 Citadis trams – to make them compatible with the new electrical power supply system.

Thanks to the use of APS technology, the first time adopted in Spain, it has not been necessary to install catenary on the new section of the tram network, thus improving the integration of the system in specific areas of the urban environment.

The APS system consists of the installation of a third conductor rail on the track, which serves as a power supply system. This third conductor rail is divided into sections that are automatically activated and deactivated as the tram travels over them, eradicating any risk to pedestrians and road users. Moreover, compared to other solutions, this technology does not compromise the autonomy of the trams in increasingly extreme weather conditions or in the event of traffic cuts or, for that matter, any other incident that interrupts the movement of the convoys.

Today, Alstom's APS technology is already installed and in operation in 11 cities on four continents (Bordeaux, Tours, Rio de Janeiro, Istanbul, Dubai, Lusail and Sydney, among others). Every day, more than 370 trams use this solution on more than 150 km of track in commercial service, representing 58 million kilometres travelled with APS (as of July 2022).

The extension of the Barcelona tramway

Today's inauguration is the first phase of the project to connect Barcelona's two tram networks, Trambaix and Trambesos. This connection – 3.9 kilometres long and with six new stops added to the tram network – will

improve mobility in the city and will enhance intramodality by connecting the tram with the suburban and Metro networks. Furthermore, once the connection is completed, it will contribute to reducing the carbon footprint by transferring users from private vehicles to the tram. The project has also entailed a major urban transformation, with new cycle lanes, more green areas and ample space for pedestrians.

Barcelona's tramway, inaugurated in 2004, is made up of two independent systems: Trambaix (connecting Barcelona with the towns of Baix Llobregat) and Trambesòs (connecting Barcelona with Sant Adrià de Besòs and Badalona). The network has a total of six lines and 56 stops in a 29.22 kilometres-long system that moves more than 30 million passengers annually, being the public transport service best rated by users (EMEF 2023). The network is operated by 41 Citadis trams, manufactured and maintained by Alstom in Barcelona.

Alstom Spain

Alstom has a long history of innovation and commitment to Spain's economic and industrial development with local industrial and technological presence for all activities related to rail transport and sustainable mobility. With more than 3,200 people in the country Alstom has an industrial plant in Barcelona dedicated to the manufacture of all types of rolling stock, a propulsion systems factory in the Basque Country and, in Madrid, different technological innovation centres for the development of projects in the fields of railway safety, signalling, maintenance and digital mobility. One out of every three trains running in Spain has been manufactured by Alstom.

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More information regarding APS can be found on Alstom's website:

www.alstom.com/solutions/infrastructure/aps-service-proven-catenary-free-tramway-operations

About Alstom

Alstom commits to contribute to a low carbon future by developing and promoting innovative and sustainable transportation solutions that people enjoy riding. From high-speed trains, metros, monorails, trams, to turnkey systems, services, infrastructure, signalling and digital mobility, Alstom offers its diverse customers the broadest portfolio in the industry. With its presence in 64 countries and a talent base of over 84,700 people from 184 nationalities, the company focuses its design, innovation, and project management skills to where mobility solutions are needed most. Listed in France, Alstom generated revenues of €17.6 billion for the fiscal year ending on 31 March 2024.

For more information, please visit www.alstom.com.

Contacts

Press:

Alstom in Spain

Irma AGUADO - Tel.: +34 686 677 104

irma.aguado@alstomgroup.com

Daniel LARENA - Tel.: +34 649 631 242

daniel.larena@alstomgroup.com