

Alstom's driverless airport APM enters service at Shenzhen Bao'an International Airport

- Equipped with automatic train operation (ATO) grade of operation 4 (GoA4), Alstom's driverless Innovia APM will further optimise the transfer of passengers reliably and efficiently.
- The APM opening at Shenzhen Airport is another contribution of Alstom's Chinese joint ventures in the field of China airport infrastructure, following the opening of the APM at Chengdu Tianfu International Airport.

17 December 2021 – Alstom's Innovia automatic people mover (APM) system began passenger service the same day that the new satellite hall in Shenzhen Bao'an International Airport opened. The APM system project was undertaken by Alstom's Chinese joint venture CRRC Puzhen Bombardier Transportation Systems Limited (PBTS)¹ since 2018 and in September this year, PBTS also won the contract to provide operation and maintenance (O&M) service for the APM system.

The Shenzhen Bao'an International Airport is located on the east bank of the Pearl River approximately 32 kilometres away from downtown Shenzhen. The Innovia APM system runs on a 2.6 km line connecting an air side satellite hall to Shenzhen Airport's existing Terminal 3. Operating at a maximum speed of 80 kilometres per hour, travel time for passengers is approximately 3 minutes. Shenzhen Bao'an International Airport has seen rapid passenger growth, surpassing 52 million passengers by the end of 2019, making it one of the busiest international airports in China. The satellite hall was designed to throughput 22 million passengers and will be an important structure to improve passenger capacity.

The Innovia APM system is equipped with the highest level of automation available to provide convenient transfer services between T3 and the satellite hall for domestic and foreign travelers. PBTS designed, built and commissioned all of the electrical and mechanical equipment, including all the Innovia APM vehicles. The propulsion equipment was provided by another Alstom Chinese joint venture, Bombardier NUG Propulsion System Co. Ltd. (BNP)², while its Chinese joint venture Bombardier NUG Signalling Solutions Co. Ltd. (BNS)³ provided the advanced signalling systems Cityflo 650 to Shenzhen Airport APM.

"The start of operation of our Innovia APM at Shenzhen Airport marks another milestone for Alstom's Chinese joint ventures and proof of customer trust in our products and services. The fully automated driverless technology will provide convenient transfer for arriving and departing passengers reliably and efficiently, while reducing operating personnel and operational costs. Alstom is always committed to working alongside our customers to realise their transportation visions by providing safe, smart, and reliable mobility solutions," said Jianwei Zhang, President of Alstom China.

¹ CRRC Puzhen Bombardier Transportation Systems Limited is owned at 50% by Alstom Group and is consolidated by equity-method. The 50% share in net income of CRRC Puzhen Bombardier Transportation Systems Limited is included into Alstom aEBIT.

² Bombardier NUG Signalling Solutions Company Limited is owned at 50% by Alstom Group.

³ Bombardier NUG Propulsion System Co., Ltd. is owned at 50% by Alstom Group.

Alstom has already supplied APM systems to Beijing Capital International Airport, Chengdu Airport, Shenzhen Airport, Shanghai Metro Line 8 and Guangzhou Zhujiayincheng, and is also currently delivering an Innovia APM system to Hong Kong Airport. Alstom's APM technology will be in service in China's six largest urban centres.

The driverless Innovia APM is a transportation system specially designed to serve airports and dense urban areas. It offers quick, comfortable, and convenient service for commuters within cities, to and from airports, or between airport terminals. Innovia APM cars operate on a dedicated guideway underground, on ground level or elevated. This ensures a consistent service that does not interfere with surrounding road or runway traffic. Built on 50 years of successful and dependable operation, Innovia APM systems incorporate modern aesthetics and advanced subsystems for optimised functionality. Over 30 of Alstom's APM systems have been delivered around the world and are in operation at 12 of the world's busiest airports.

Present in China for over 60 years, Alstom participates in the full spectrum of China's railway projects. With the completion of Bombardier Transportation effective 29 January 2021, Alstom in China now has a complete range of rolling stock (high-speed trains, railway passenger cars, locomotives, metro, automated people movers, monorails and trams), customised services, as well as infrastructure and signalling solutions.

Alstom in China has thirteen joint ventures, seven wholly foreign-owned enterprises, and over 11,000 employees. Together, the joint ventures have delivered more than 6,000 railway passenger cars, 1,530 electric locomotives, 7,194 metro cars, 536 monorail cars, 168 automated people mover cars and 191 tram cars to China's growing rail transit market as well as to overseas markets. In China, Alstom also provides customers with a wide range of services solutions, from heavy maintenance to modernisations, and currently has 2,252 metro cars under maintenance contracts. It is a major signalling supplier to the Chinese high-speed network, and through its joint ventures, its signalling systems are utilised in 102 urban mass transit lines and its propulsion equipment are applied in 100 metro lines in Chinese cities.

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About Alstom

Leading societies to a low carbon future, Alstom develops and markets mobility solutions that provide the sustainable foundations for the future of transportation. Alstom's product portfolio ranges from high-speed trains, metros, monorails and trams, to integrated systems, customised services, infrastructure, signalling, and digital mobility solutions. Alstom has 150,000 vehicles in commercial service worldwide. With Bombardier Transportation joining Alstom on January 29, 2021, the enlarged Group's combined proforma revenue amounts to €14 billion for the 12-month period ended March 31, 2021. Headquartered in France, Alstom is now present in 70 countries and employs more than 70,000 people. www.alstom.com

Contacts

Press:

Martin MILINSKI
martin.milinski@alstomgroup.com

Li WANG
li.wang@alstomgroup.com