

China's first fully automated and driverless elevated monorail provided by Alstom's Chinese joint venture enters service in Wuhu

- Equipped with ATO GoA level 4, the Wuhu Line 1 is the country's first fully automated and driverless elevated monorail
- With strong contributions from Alstom's Chinese joint ventures, new Innovia monorail system ushers in a new era of eco-friendly rail mobility in Wuhu

03 November 2021 - Today a fleet of 28 six-car Innovia monorail trains entered commercial service on Wuhu Rail Transit's Line 1 in Anhui Province, China. At the inaugural event, Party Secretary Shan Xiangqian, Ning Bo, Mayor of Wuhu City, Chairman of CRRC (PPP leader and customer) Sun Yongcai, President Chen Wenjian of China Railway Group Limited (PPP member and customer), and Jianwei Zhang, President of Alstom in China all shared a ceremonial ride on Wuhu's new monorail.

The first of its kind in China, Wuhu's new monorail will be elevated and equipped with automatic train operation (ATO) grade of operation 4 (GoA4). The highest level of automation available, GoA4 enables the Innovia monorail to operate fully automated, without driver or attendants.

The Innovia monorail platform, along with a total of 168 cars, was provided by Alstom's Chinese joint venture CRRC Puzhen Bombardier Transportation Systems Limited (PBTS)¹. The related Cityflo 650 signalling system that enables the automatic train operation was provided by Bombardier NUG Signalling Solutions Company Limited (BNS)², Alstom's Signalling joint venture in China. Alstom's joint venture for propulsion in China, Bombardier NUG Propulsion System Co. Ltd. (BNP)³, provided the Mitrac propulsion equipment for the monorail trains.

"The start of operation marks another milestone for Alstom's Chinese joint ventures, which remain committed to working alongside our customers. Wuhu's new fully automated and driverless elevated monorail will be a game changer for residents, decreasing their commute time while also reducing congestion, pollution, and carbon emissions in the city. It is an important part of Wuhu's ongoing efforts to redefine its urban transportation to the benefit of its passengers and the environment. As always, we are committed to helping our customers realize their transportation visions by providing safe, smart and green mobility solutions," said Jianwei Zhang, President of Alstom China.

Last month, over 40,000 people experienced the country's first fully automated and driverless elevated monorail train firsthand during trial runs. For the start of its commercial operation on November 3, the Innovia monorail will depart from Baimashan Station in the south of the city and end at Baoshun Road station in the north. The 25-station line is 30.46 km long and its tentative operating hours from 06:30-22:00 on weekdays and holidays.

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.

Wuhu Line 1's new elevated monorail operates at a speed of 80 kilometres per hour and has been equipped with ATO GoA4, the most-advanced and highest level of automatic train operation that enables the train to operate both driverless and fully unattended. To ensure the safe, reliable and efficient operation, the train has also been deeply integrated with key technologies such as track beams, switches and power supply rails. The train's passenger compartment offers a clear and open view as the entire train passes through the city emitting low noise and vibration. With strong dynamic performance, exceptional climbing ability and a tight turning radius, the train is well adapted to the needs of an urban landscape. In addition to providing citizens with a safe, convenient, and green transportation experience, Wuhu's Innovia monorail has also become a recognized part of the Wuhu's modern and picturesque cityscape.

Designed to integrate seamlessly into the urban environment, Alstom's fully automated and driverless Innovia monorail systems provide an energy-efficient, comfortable, and cost-effective mobility solution, particularly for growing or dense cities. The modern looking and quiet vehicles run on elevated guideways that are built off-site to permit fast assembly with minimal disruption on-site. Alstom offers 30 years of expertise in successful monorail design, build, operations and maintenance, with industry leading availability and safety standards.

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 Jan. 29, 2021, Alstom in China now has a complete range of rolling stock (high-speed trains, railway passenger cars, locomotives, metro, automated people movers, monorail 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 5,900 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.

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