

## Alstom obtains certification of latest ETCS standard

**World-first railway data fusion algorithms to measure the location and speed of trains**

**25 June 2020** – Alstom has received full certification<sup>1</sup> of the latest interoperability standard for rail, ETCS<sup>2</sup> Baseline 3 Release 2. Ahead of the large-scale rollout of the solution in Norway, Alstom has also been certified by Belgorail<sup>3</sup> to implement its world-first data fusion algorithms using both satellite navigation and inertial movement to accurately and safely measure the location and speed of trains.

Initially created to enable a standardised European cross-border rail traffic, the use of ETCS is set to safely increase speed, reliability, and capacity. ETCS includes continuous radio-based automatic train protection, thus optimising higher-speed operation and supporting network interoperability, while reducing maintenance costs for the operator. The latest standard includes higher radio capacity and other evolutions to better address railways needs.

The new odometry system based on data fusion, which Alstom is currently implementing in Norway, is applicable to all types of trains and all environments, including the harshest weather conditions. By 2026, 450 trains will be equipped with the new standard and in commercial service across Norway. Tests for the first locomotive equipped with the new solution will begin in June this year.

“In a decisive move towards digitalisation in rail, Norway has chosen to equip the whole country with the latest version of the European interoperability standard, demonstrating the country’s leading strategy for a greener future. We are immensely proud to be participating in this, and even more so with a world-first technology for which we have just obtained certification,” says Rob Whyte, Managing Director Alstom Nordics.

Alstom’s data fusion innovation obviates the need for the external radar components for localisation and speed measurement that are used today. Data fusion is the process of aggregating multiple data sources to produce more consistent, accurate, and useful information than that provided by any individual data source. In this case being built as a hybrid, with both inertial and satellite sensors for the first time, its equipment is installed within the train, and thus remains unaffected by weather conditions. The algorithms used manage to maintain precision in covered areas such as tunnels.

Alstom is the worldwide number one in on-board ERTMS equipment via its Atlas solution, representing 70% of the on-board systems in service in ERTMS Level 2. Today, across 30 countries, trains under Atlas supervision have covered over 250 million kilometres, including Deutsche Bahn’s high-speed ICE3 fleet recently equipped in Germany. In total, Alstom has been contracted to equip 9000 trains with Atlas Onboard solutions, of which 1,100 vehicles will be equipped with the Baseline 3 Release 2 solution.

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<sup>1</sup> ISA and NoBo Certifications

<sup>2</sup> European Train Control System

<sup>3</sup> A leading railway certification and testing organisation

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**About Alstom** Leading the way to greener and smarter mobility worldwide, Alstom develops and markets integrated systems that provide the sustainable foundations for the future of transportation. Alstom offers a complete range of equipment and services, from high-speed trains, metros, trams and e-buses to integrated systems, customised services, infrastructure, signalling and digital mobility solutions. Alstom recorded sales of €8.1 billion and booked orders of €12.1 billion in the 2018/19 fiscal year. Headquartered in France, Alstom is present in over 60 countries and employs 36,300 people.

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