

# ALSTOM IN SPAIN

2020

We could go as far as **150 years back in time** to find Alstom in Spain roots. In 1855, it was founded La Maquinista Terrestre y Marítima SA, company later acquired by Alstom in the late 80s. Since then, Alstom has reached great milestones in a **large history of innovation and commitment with the Spanish technological and industrial development**. Local footprint has been continuously increasing with the creation of new industrial and technological sites, making Alstom the second main employer in the Spanish railway sector.



**+ 2,000** Employees

**60%** Export

**1** Industrial site

**4** Innovation & Tecnological centers

**18** Sites

**>200 m€** Annual purchases to local suppliers

## FULL RANGE

Alstom is the only company in Spain with local industrial and technological footprint for all the activities in railway transport domain: signalling, infrastructure, train manufacturing, maintenance and digital mobility.



### ROLLING STOCK

Santa Perpetua plant is one of the most modern train factory in the Group in Europe, with the capacity to manufacture all types of trains: tramway, metro, suburban, regional and high speed.



### DIGITAL MOBILITY AND SIGNALLING

Alstom employs over 500 technicians and engineers to develop and implement state-of-the-art signalling solutions for all types of railway infrastructures, along with on-board equipment for trains.



### SERVICES

Alstom offers a range of customized services to public and private rail operators: maintenance, refurbishment, spare parts management, support and technical assistance on Rolling Stock equipment, manufactured by Alstom or third parties.



### INFRASTRUCTURE & SYSTEMS

The railway infrastructure unit provides customers with turnkey solutions and products associated with railway lines: track, electrification, depots, tunnel safety systems, etc.

## MAIN REFERENCES



### ROLLING STOCK

- Tramways: Barcelona, Madrid, Tenerife, Murcia, Parla, Jaen and Murcia
- Metros: Barcelona and Madrid
- Commuter trains for FGC (S213 and S113) and Renfe (CIVIA I, II, III and IV)
- High-speed trains/Shuttles S104 and S114) – Renfe
- Traction chain S121, S120 and S120.50– Renfe
- Very high-speed trains: S100– Renfe
- Regional trains: ALARIS S 490 – Renfe
- Adaptation of the fleet of commuter trains in Valladolid to improve accessibility - Renfe

### SERVICES

- Suburban trains: S450, S451, S447 and Civia – Renfe
- Very high-speed trains: S100 “AVE” - Renfe
- High-speed trains: S104 and S114 - Renfe
- High-speed locomotives: S252 - Renfe
- Citadis tramways in Barcelona, Madrid and Murcia
- Barcelona tramway: S9000 - TMB
- Traction chains S121, S120 and S120.050 – Actren
- VeryHigh Speed Trains TGV Duplex - Rielsfera

### MODERNISATION

- 24 AVE SERIES 100. Interior renewal, adaptation
- Commuter cars Renfe S-446 and S-447. Adaptation of accessibility for disabled people. 165 cars
- 10 AVE SERIES 100 – Renfe. AVE adaptation for operation on the high-speed line linking Spain and France.

## SIGNALLING

### Mainline

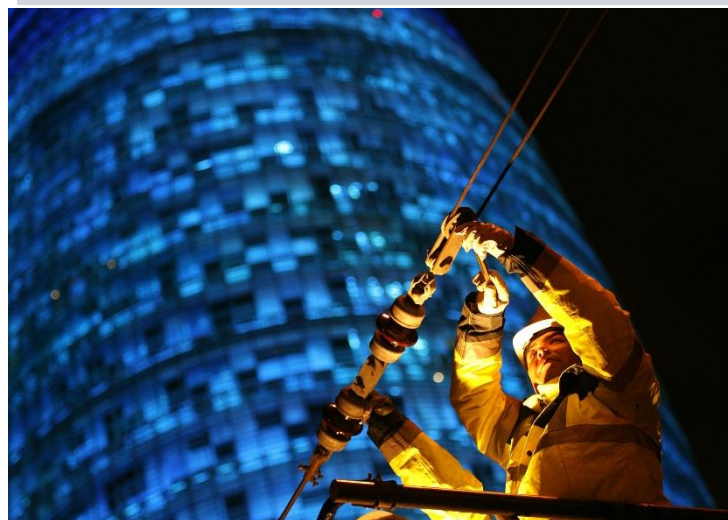
- ERTMS level 2 for the high-speed line Albacete-Alicante and Northwest corridor (Valladolid-León-Burgos).
- On-board equipment for high-speed trains - 239 board equipment in service
- On-board equipment ETCS/ERTMS level 2 baseline 3) for ADIF auscultation trains
- On-board equipment (ETCS/ERTMS level 2 baseline 3) for Renfe suburban trains
- Third rail - ERTMS level 1 Zaragoza-Huesca, Girona-Figueres, Castellbisbal–Can Tunis and Castellbisbal/Papiol-Mollet San Fost
- Smartlock 200 and Smartlock 300. Over 100 sets of equipment in operation
- Interlocking: Chamartin station

### Urban

- Tramways: Barcelona and Madrid
- Metro: CBTC Malaga
- Train-tram Chiclana-San Fernando
- Recoletos Tunnel (Madrid suburban line)

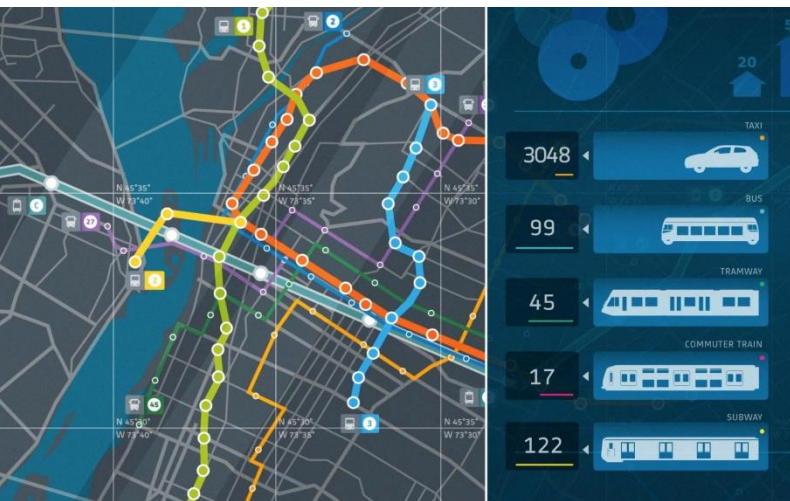
## SYSTEM & INFRASTRUCTURE

- Tramway systems: Barcelona, Granada, Parla, Jaen, Murcia
- Civil protection and safety facilities: Tunnels in the high-speed lines
- Catenaries for the high-speed and commuter lines
- Substations for high-speed network
- Rail maintenance and catenary of Renfe Integria workshops



## COUNTRY STRENGTHS

- **Barcelona**. Santa Perpètua plant in Barcelona is developing an **ambitious digitization and growth plan**. The project includes the application of the latest technologies and processes to design and build the trains of the future, empower employees and develop new workshops. With 80% of its activity currently dedicated to exports, the factory is a global reference for urban and suburban trains, such as trams (Athens, Frankfurt, Qatar, among others), subways (Barcelona, Panama, Singapore), suburban and regionals (Luxembourg, Italy, Chile).
- **Madrid Smart Mobility Lab**. The R&D center located in Madrid develops innovative mobility solutions, with state-of-the-art Smart Data, Internet of Things (IoT) and video analytics technologies. Our Mastria solution has been already implemented in 5 different countries (France, Italy, Panama, Canada and Spain) to optimize city flow management in the cities.



- **HealthHub™**. Alstom Services teams in Spain implement latest digital tools, IoT technologies and predictive algorithms in order to improve train availability, minimize time in workshops and, ultimately, reduce the TCO (Total Cost of Ownership) in urban and interurban fleets.
- **ERTMS leadership**. Alstom has installed the first wayside ERTMS level 2 signalling systems operating in Spain, and has equipped with on-board ERTMS technologies 480 trains, more than half of the total trains currently operating in Spain with this technology.

## A SUSTAINABLE FOCUS

Alstom promotes the transition to innovative and environmentally-friendly mobility solutions through a socially-responsible business model.



- Alstom innovates to **answer the growing need for sustainable mobility solutions**. Within this objective, Alstom has developed a new urban electric vehicle, Aptis, already circulating in Spain. Malaga holds the world premiere for Alstom's innovative ground charging solution (SRS) for e-buses.
- Solutions developed by Alstom are designed to **optimise sustainability throughout the entire product life cycle**: raw materials, manufacturing process, energy efficiency and end-of-life recycling.
- Alstom has been certificated with ISO14001 in all its sites and **100% of the energy used in its Spanish sites comes from renewable sources**.

### FOR MORE INFORMATION:

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