Alstom in Spain

TRANSPORT REFERENCES

FINISHED PROJECTS

Rolling Stock
- Barcelona tramway, Trambaix & Trambesòs – Customer ATM
- Madrid tramways (Parla, MLO, ML) – Customer Ayuntamiento de Parla, Mintra
- Tenerife tramway – Customer Metropolitano de Tenerife
- Jaen tramway – Customer Junta de Andalucia
- Murcia tramway – Customer Municipality of Murcia
- Metro Barcelona Series 9000 – Customer TMB
- Commuter trains S213 – Customer FGC
- Commuter trains CIVIA II, III y IV – Customer RENFE
- High speed trains Lanzaderas S104 & S114 – Customer RENFE
- Traction system S121, S120 and S120.50 – Customer RENFE
- Very High Speed Trains S100 – Customer RENFE

Tramway infrastructures
- Barcelona Tramway - TramBaix y TramBesòs
  Customer: ATM LRV Systems, 30km track and maintenance over 25 years
- Parla Tramway
  Customer: Ayuntamiento de Parla - LRV Systems, 8.3 km track
- Granada Tramway Installation
  Customer: Junta de Andalucia - Installation of electrification and catenary – LRV Systems, 15.9 km track
- Jaen Tramway
  Customer: Junta de Andalucia - Electrification, signalling and communication systems - LRV Systems, 4.7 km track

Track infrastructures
- High Speed Train tunnel Orense-Santiago
  Customer: Adif – Instalation of civil protection and safety system

Substations
- High speed line Madrid-Zaragoza-Barcelona-French Border - Stretches Madrid-Lérida / Lérida Barcelona
  Customer ADIF - Supply, installation and maintenance of 8 electric substations with traction 2x25 kV and 38 associated autotransformer centres (supply of electrical equipment for 5 substations and 16 autotransformer centres)
- High speed line Cordoba – Malaga – Stretch Cordoba-Bobadilla and Bobadilla-Malaga Station
  Customer ADIF - Supply, installation and maintenance of 3 electric substations with traction 2x25 kV and 12 associated autotransformer centres.
- High speed line Madrid-Levante
  Customer ADIF - Supply, installation and maintenance of 11 electric substations with traction 2x25 kV and 55 associated autotransformer centres and SCADA for the stretches Torrejón de Velasco-Motilla del Palancar, Motilla del Palancar-Valencia, Motilla del Palancar-Albacete and Albacete-Alicante-Valencia.
- Line 5 from Metro Barcelona (TMB)
  Customer GISA - Renovation and energy output increase (de 1200 Vcc to 1500 Vcc) for 8 traction substations and the construction of 1 substation of 1500 Vcc.
TRANSPORT REFERENCES

- **Electric substation in San Sadurní de Noya**
  Customer ADIF - Restoration and energy output increase 3000 Vcc

**Catenaries**

- **High speed line Madrid-Segovia and Valdestillas-Valladolid**
  Customer: ADIF - Supply and installation of 2 x 100 km catenary 2x25 kV – 350 km/h

- **Rigid catenary and urban commuter train tunnels in Barcelona**
  Customer ADIF - Supply, installation, commissioning and guarantee for 50 km of catenary

- **Rigid catenary for reduced gauge on L9 Metro Barcelona**
  Customer TMB - Electrification of the tunnel for L9 between Bon Pastor and Cam Zam. Detailed engineering, supply, installation and commissioning of 10 km of catenary.

- **Mallorca commuter train line Palma-Inca-Sa Pobla-Manacor**
  Customer SFM - Installation of 70 km of hybrid catenary CR 160 – CR 220 on the stretch Son Rullan - Enllaç

- **Conventional Electrification of Montcada station**
  Customer SEITT – Renovation of 20km of catenary CR-160 at the Montcada Bifurcación station.

**Infrastructure Maintenance**

- **High Speed Train Line Madrid-Valladolid**
  Customer ADIF - 4 years maintenance with an option for a further 2 years covering the electrification installed (LAC + SSEE), 169 km of double track

- **High Speed Train Line Olmeda-Medina**
  Customer ADIF - 4 years maintenance with an option for a further 2 years covering the electrification installed (LAC + SSEE), 24 km of single track

- **Workshop de RENFE INTEGRIA**
  Customer RENFE – Maintenance of track and catenary of RENFE INTEGRIA’s workshop (5 Lots)

**Interlocking**

- **Smartlock 200**

- **Smarlock 200**
  Customer FEVE – Interlocking for the stretch Muros-Cudilleno

- **Smartlock 300**
  Customer ADIF - Monforte de Lemos, Soto de Rey, Cartagena–Los Nietos, Chamartin station

- **Smartlock 300**
  Customer FEVE – Interlocking for the stretch Orgo-Carranza

**Urban signalling**

- **Barcelona Tramway**
  Customer ATM - Trambaix / Trambesós, 1 Smartlock in Depot - Interlockings on line - Point motor – track circuit, Signals, SAE + radio, Integration PCC

- **Madrid Tramway**
  Customer Mintra and Metro de Madrid - 7 Smartlock, 3 lines (Colonia Jardín-Boadilla, Colonia Jardín-Pozuelo, Pinar de Chamartín-Sanchinarro-Las Tablas)

- **Malaga Metro**
  Customer Junta de Andalucía - URBALIS EVOLUTIONTM System in ATP / ATO with "distance to go" free propagation radio transmission, Smartlock interlocking 400 with object controller Smart I/O., Integrated Control Centre through the ICONIS TM with traffic regulation

- **Tren-Tram Chiclana-San Fernando**
  Customer Telvent - Signalling and fix communications
TRANSPORT REFERENCES

ERMTS

- **Train On-board equipment: S100, TAV S104, S114, AVRIL G3, CIVIAS, Mecca-Medina Talgo, TAV-S104**
  Customer Renfe - 239 on-board equipment sets in service

- **ERTMS Level 1 Zaragoza-Huesca**
  Customer MIFO - Number of LEUs: 30, Fixed/variables eurobalises : 274, Interlockings: 10

- **ERTMS Level 1 Girona-Figueres**
  Customer ADIF - Interlocking (IXL), Installation of a 3rd rail to operate with Iberian and UIC gauge, ATLAS solution for ERTMS

- **ERTMS Level 1 Castellbisbal-Can Tunis**
  Customer ADIF - Interlocking (IXL), adjustment of the signalling for the section Castellbisbal-Can Tunis-Puerto de Barcelona to operate with two track gauges and ERTMS level 1.

- **ERTMS Level 1 Castellbisbal/Papiol-MolletSan Fost**
  Customer Adif – Adaptation of line to make it suitable for traffic running on international and Iberian gauge.

- **ERTMS Level 2 Albacete-Alcantarilla**
  Customer Adif - Contract awarded for high speed line by Adif in a PPP (Public Private Partnership) scheme.

- **High speed line Madrid-Levante (Alpera variation)**
  Adaptation of infrastructure (laying and connection of cables) for the installation of interlocking. Train protection system, telecommunications and central traffic control.

Main ongoing projects

Rolling Stock Maintenance

- **Suburban trains S450, S451, S447 & CIVIA**
  Customer RENFE - In collaboration with a consortium with RENFE – Sites: Barcelona, Madrid

- **Very high speed trains S100 “AVE”**
  Customer RENFE – 24 trains - Sites: La Sagra (Toledo) & Cerro Negro (Madrid)

- **High speed trains S104 and S114**
  Customer RENFE – 15 + 13 trains - Site: La Sagra (Toledo)

- **High speed locomotives S-252**
  Customer RENFE – 14 locomotives - Site: La Sagra (Toledo) and Cerro Negro (Madrid)

- **Barcelona tramway**
  Customer ATM - 18 units TRAMBESÓS in Sant Adrià del Besós / 23 Units TRAMBAIX in Sant Joan Despí (Barcelona)

- **Adaptation of VHST Series 100 for Madrid-París corridor**
  Customer RENFE – S100 – Site: La Sagra (Toledo)

- **Citadis tramway in Madrid and Parla**
  Customer Mintra, Ayuntamiento de Parla – Site: customer sites

- **Metro Barcelona series 9000**
  Customer TMB – 40 units – Site: customer site

- **Traction system S121, S120 and S120.050**
  Customer CAF – 29 + 12 + 16 units – Site: Madrid + Barcelona

- **Citadis tramway in Jaén**
  Customer Junta de Andalucía – 5 units – Site: customer site

- **Adaptation of commuter train fleet to improve accessibility**
  Customer RENFE - Site: Valladolid

Electrification and Turnkey Projects

- **Conventional line in Barcelona**
  Customer Adif – Remote SCADA for LAC in Barcelona

- **Power system – Pajares Bypass HSL**
TRANSPORT REFERENCES

Customer Adif - Construction and maintenance of the power system for the new 44.3 km high-speed line: catenary system, 2x25kV traction substation and autotransformer stations including associated traction power control system. This line includes Pajares Tunnel (25 km-long), the second longest tunnel in Spain.

- **Tunnel safety and security systems - Pajares Bypass HSL**
  Customer Adif - Supply and maintenance of safety and security systems for 12 tunnels of the new Madrid-Asturias high-speed line, including the 25 km-long Pajares bypass tunnel.

**Signalling**

- **ERTMS Level 2 - Madrid-Asturias high-speed line**
  Customer Adif – 310 km of new high speed

**Rolling stock Exports**

- **Rabat Tramway (Morocco) - Citadis tramways**
- **Oran and Constantine Tramways (Algeria) - Citadis tramways**
- **Shanghai Metro (China)**
- **Washington Metro (United States of America)**
- **London Underground (United Kingdom)**
- **Santo Domingo Metro (Dominican Republic) - Lines 1 and 2**
- **Panama Metro (Panama)**
- **Lima Metro (Peru)**
- **Nottingham Tram (UK)**
- **Santiago Chile Metro – Modernization (Chile) - 35 metro trains, composed of seven cars each**