

CZECH REPUBLIC - SPAIN

Railways Business Forum

Challenges and solutions
for sustainable transportation

Prague, May 21st 2024



**Reference/pitch to the Spanish companies participating
in the Railway industry ICEX trade mission.**

Mr. Jaime Alcaide - Chief Economic and Commercial Counsellor, Embassy of Spain in Prague

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Spanish Railway sector

**Pitch/reference to the Spanish companies
participating in the Railway industry trade mission**

Jaime Alcaide, 21.05.2024

Head of the Spanish Commercial Office in Prague



Spanish Railway Industry

- Long tradition of the Spanish railway Industry*
- 36% of European Railway Industry turnover*
- EU country with the largest industrial presence or manufacturers (rs, tech. solutions & signalling)*
- Covering all cycles of projects, integrating all subsectors with extensive experience*

High-speed



Largest European high-speed network with more than 4,000 km

Urban transport



8 cities with metro and 11 with tram

ERTMS



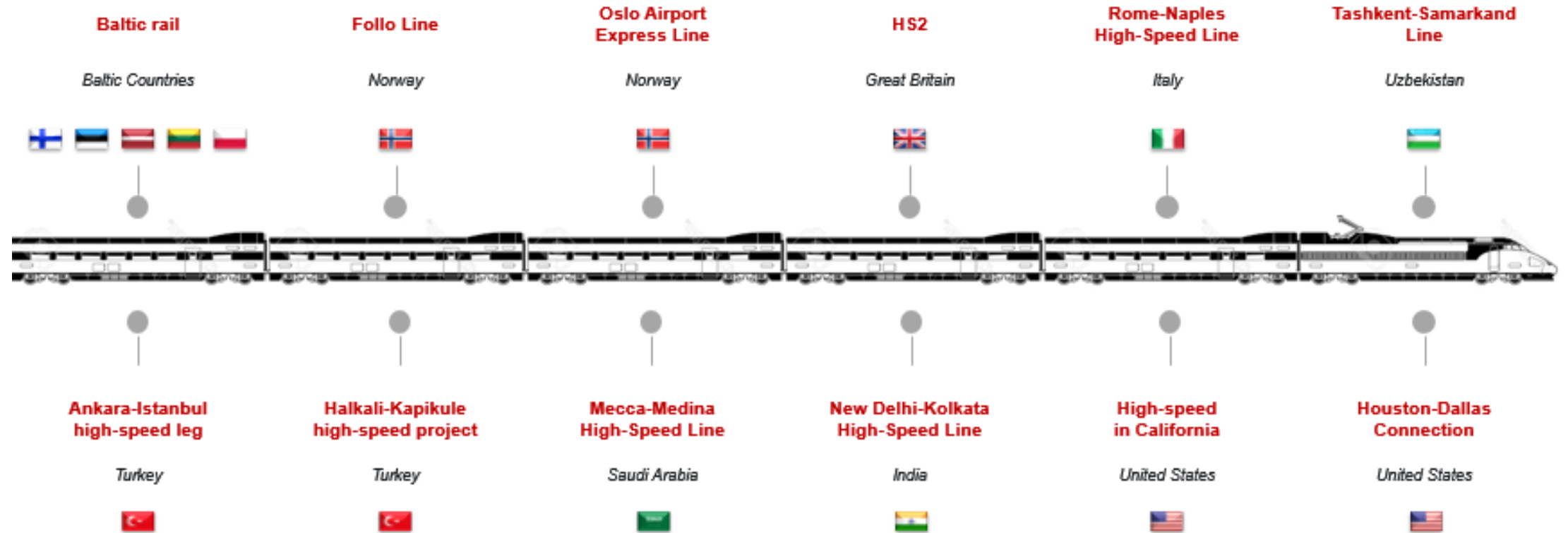
At the forefront of ERTMS signalling with more than 1.900 km

Automated lines



Most extensive automated line in Europe (Barcelona's L9)

High-speed: main Spanish projects in the world



A unique value proposal with comprehensive urban transport solutions

Urban transport



35% of South America's metro networks and more than 25% of European ones have Spanish technology

Longest automated metro line in Europe / Advanced smart operational control centers

Urban transport: main Spanish projects

Urban transport



Engineering and consulting



Acciona Ingeniería

Special focus on solutions for
Transportation (including HS lines)
& industrial engineering designs.



IDOM

Strong history in rail and transit
planning, design and management.
Long experience in rail, urban
transport & metro systems.



INECO

Technological solutions for
sustainable transportation
(aviation, rail, roads and maritime)



TYPESA

Leader in infrastructure, energy,
environmental and city solutions.
Relevant participation in planning,
design and construction supervision
of HS and conventional lines.

Technology: equipment and solutions

Mobility IT equipment & solutions



indra

INDRA

Global technology and consulting company
Leader in proprietary solutions and
in digital transformation and IT.

All Mobility areas:

Railways, engineering, traffic and
infrastructure, urban and interurban mobility,
airports and ports.

Signalling & on-board systems (integral equipment & services Group)



CAF | SIGNALLING

CAF Signalling (CAF Group)

Technological subsidiary of CAF GROUP,
Development, design, manufacture & maintenance
of railway signalling systems.

Integral signalling solutions for
wayside and on-board applications.

(CAF Group integral equipment and services Group)

Rolling Stock



Talgo

Talgo

Rolling stock manufacturer and service provider.
Specialized in high speed, Intercity and cross
border operation.
Innovative solution to the railway market.

Spanish companies

Infrastructure, construction/services



Acciona Construcción

Specialized in sustainable infrastructure solutions.

Leader in transportation infrastructure construction.
Innovation and transition towards a neutral economy



CINTRA (Ferrovial Group)

World leader as global infrastructure operator
Ferrovial Group division for concessions in
Highways, with 21 PPP projects in 10 countries.



COMSA

Specialist in turnkey railway projects
Construction and maintenance of high-speed lines,
tramways, and metropolitan and regional railways.
Also, civil works such as roads, tunnels and
bridges, as well as hydraulic, port and airport
projects, and singular buildings.

Spanish companies

Infrastructure, construction/services



(Energy EPC contractor, Electrification)

ELECNOR promotes, develops, and constructs all manner of infrastructure on all five continents, including concessional projects.



Construction and infrastructure

World leader infrastructure and citizen services group
With strong presence in the Czech Republic through FCC Environment and FCC Aqualia.



Railway systems

Global leader in integration of technical know-how
For the creation and maintenance of competitive and durable railway infrastructures.
(Signaling an auxiliary systems,
Associated civil works, O&M, integral solutions)

Spanish companies

Infrastructure – specific segments

Bridges



Grupo Puentes

Leading European bridge construction company (movable scaffolding system, shoring tower bridge formwork, progressive cantilever method, strut-and-tie and compression strut, cable stayed bridges, precast concrete bridges etc.)

Tunnels



OSSA

Leading company in underground construction, working in four business segments: civil works, energy, mining and services. Involved in underground excavation projects using the drill & blast (NATM), TBM, roadheaders and mechanical techniques.

Ventilation



Zitron

Leader in ventilation systems worldwide, specialized in ventilation for road and railway tunnels, metro lines and mines. Manufacturing both jetfan and axial fans with the most modern technology. .

With the collaboration of:



Railway infrastructure operator



ADIF

Spanish Rail Infrastructure Manager, under the Ministry of Transport and Sustainable Mobility. Responsible for high-speed lines, as well as conventional and commuter lines, stations and main freight terminals.

Incumbent operator



Proyectos
Internacionales

RENFE

Leader in rail transport and a reference in the mobility sector in Spain and Intl. markets+83 year of experience.

Strategic partner of the Czech private operator Leo Express in Central Europe, fostering cooperation in Czech and European projects.

Railway industry association



MAFEX


Spanish Association of the Spanish Railway Ind. Bringing together 113 members, representing the entire value chain and 83% of railway exports in Spain.

Some Spanish solutions to new challenges




Eco railway proposals

- Use of renewable energies in facilities and in commercial operation
- New manufacturing methods for environmentally friendly cement
- Eco-efficient traffic monitoring and driving management systems
- Energy recovery braking systems
- Fast charging at tram stations with battery systems on board
- Catenary-free trams
- Hydrogen train



Digitalization

- Infrastructure digitalization through BIM
- Smart railway stations
- Flexible automatic driving systems
- Automatic protection and operation systems
- Energy Management Systems (EMS) to reduce on-board energy consumption
- Fleet systems to optimize energy consumption management and control
- AI for predictive maintenance
- IoT hardware platforms to integrate all on-board equipment



Intermodality

- Railway connections to ports 4.0
- Systems for the traceability of goods
- Solutions for a connected intermodal transport



Talent attraction

- Wide variety of specialized railway training
- Official Master degrees in railway engineering, BIM and numerous other disciplines
- Career development plans



Health & safety (e.g. Covid)

- Centralized operating and planning systems
- Preventive access control system
- Real-time information on infrastructure and train occupancy
- Intelligent passenger density solutions
- Contactless electronic ticketing and payment methods

Spain: your partner

Thank you

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