



MAFEX INFORMS

Mafex reaches 118 members and continues with its intense agenda of activities.



DESTINATION

8th International Railway Convention
Toledo hosted a new edition from 8th to 10th May.



INNOVATION

Mafex members present their latest developments in innovation



SUSTAINABLE MOBILITY

In an increasingly urbanized world, Stadler's metro, light rail vehicles and trams offer great comfort to passengers and cost-effective customized solutions to operators. Our urban and suburban vehicles set trends in terms of performance, universal accessibility, reliability and safety.
www.stadlerrail.com

STADLER

MAFEX

Summary

05 / EDITORIAL

06 / MAFEX INFORMS

MAFEX EXPANDS ITS NUMBER OF MEMBERS TO 118 AND REPORTS AN INTENSE ACTION PLAN FOR 2023

A summary was also made of the more than 220 actions organised and / or coordinated by Mafex over the past year.

ADIF AND MAFEX WILL DEVELOP NEW LINES OF WORK TO PROMOTE THE COMPETITIVE IMPROVEMENT OF THE SPANISH RAILWAY SECTOR

They will cooperate to consolidate the global positioning of the Spanish railway industry and to promote R + D + i projects that place companies at the forefront of technology.

NEW MAFEX MEMBERS

The Association continues to grow with the addition of eighth new members, and it reaches a total of 118 members.

MAFEX PARTICIPATES IN A NEW EDITION OF THE "GLOBAL PUBLIC TRANSPORT SUMMIT ORGANIZED BY UITP"

It was held in Barcelona from June 4th to 7th.

ÖBB CHALLENGES DAY ORGANISED BY MAFEX TO PROMOTE COLLABORATION IN R+D IN THE RAILWAY FIELD

The Association welcomed in Bilbao the representatives of ÖBB, the state railway operator of Austria in a new "Challenges Day".

THE CIRCULAR ECONOMY AND THE RAILWAY, PROTAGONISTS OF THE THIRD INDUSTRY FORUM OF THE YEAR ORGANISED BY MAFEX

It is necessary to move to an economic model that allows to keep products and materials in use and to redesign industrial processes so that waste and pollution be radically reduced.

MAFEX CELEBRATES ITS FOURTH SESSION OF THE "INTERNATIONAL MARKETS FORUM" DEDICATED TO THE POTENTIAL OF THE PORTUGUESE RAILWAY MARKET

Portugal is a key market for the Spanish railway sector and offers great business opportunities for the industry thanks to the transformation process it is undergoing with the reforms and investments associated with European Union funds.

STARS: HACK&MATCH EVENTS AND TRAINING FOR THE BENEFIT OF BUSINESSES

The STARS project aims to support SMEs in the sector in the implementation of Advanced Technologies,

giving a boost in terms of productive performance and increasing their capacity for innovation.

MAFEX ATTENDS THE GENERAL ASSEMBLY OF UNIFE GENERAL ASSEMBLY IN MADRID

The new edition was held from June 14th to 16th.

MAFEX HAS STRENGTHENED THE COMMUNICATION WITH THE SPANISH RAILWAY SAFETY AGENCY (AESF) ON TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY

During the last few months in Mafex the communication has been strengthened with an entity as key to our sector

18 / MEMBERS NEWS

26 / RAIL LIVE! 2023

Madrid will host the 2023 edition between 29th November and 1st December.

28 / DESTINATION

8TH INTERNATIONAL RAILWAY CONVENTION

Positive balance of the 8th edition of the International Railway Convention. A meeting that has brought together delegates from 30 countries.



36 / IN-DEPTH

THE RAILWAY, THE CORNERSTONE OF EUROPE'S SUSTAINABLE RECOVERY

The European economic recovery plan involves sustainable and digital mobility. Spain is committed to an emission-free economic model where the railway must play a leading role.

58 / SUSTAINABILITY

MAFEX MEMBERS PRESENT THEIR LATEST DEVELOPMENTS IN SUSTAINABILITY

63 / INNOVATION

MAFEX MEMBERS PRESENT THEIR LATEST DEVELOPMENTS IN INNOVATION

72 / MEMBERS GUIDE



TRUST IN MOTION

**WHEN YOU MOVE IN GOOD COMPANY,
THE JOURNEY IS ALWAYS BETTER.**

We are your partner. A company that offers one of the widest range of rail and bus transport solutions on the market. With expert knowledge in implementing modern urban and interurban mobility systems. Contributing to the planet's sustainability and individuals quality of life.

The railway, the basis of sustainable, safe, and efficient recovery in the transport sector



36% of the European railway turnover and where we export railway technology, being present in more than 95 countries.

In addition, the European Commission Continues its historic investment through the "Next-GenerationUE" programme (2021-2026/27), which develops actions linked to the European Recovery and Resilience Facility, and with the operation "Connecting Europe", and where the railway is the one receiving a greater boost as a mode of transport with environmental benefits and its ability to structure Europe.

This is an unprecedented venture, a unique opportunity that opens the door for businesses in the sector to contribute their know-how and their extensive experience in the numerous projects planned for the coming years with the objective focused on the expansion plans of this mode of transport in urban environments, the improvement of the commuter network, the support for intermodality and the completion of the Atlantic and Mediterranean corridors.

All these topics are discussed in issue 36 of the Mafex magazine, which also includes: current news, innovative solutions and sustainability initiatives from more than 35 members and the Association itself.

We are facing a historic moment that opens a range of possibilities for the railway industry to take advantage of the opportunities offered, both at the level of railway passenger and freight transport, as well as the actions in metropolitan areas as one of the largest priorities demanded by sustainable, efficient, safe, and connected mobility.

MANAGEMENT: MAFEX.

MAFEX COMMUNICATION COMMITTEE: Alstom Transporte, ArcelorMittal, Caf, Global Quality Engineering (Grupo Trigo), Icon Multimedia, Idom, Indra Sistemas, Ingeteam, La Farga Yourcoopersolutions, Patentes Talgo, Sice, Siemens Rail Automation, Stadler Rail Valencia, Teltronic, Thales España, TPF Getinsa Euroestudios y Zitron. **ADMINISTRATION:** mafex@mafex.es **ADVERTISING:** mafex@mafex.es **SUBSCRIPTIONS:** mafex@mafex.es. Mafex magazine is not responsible for the opinions, images, texts and works of authors and readers that will be legally responsible for their content. It is understood that the signing authors have given their consent to be included, for which he or she will be responsible. Also, the magazine is not responsible for typographical errors contained in the original documents submitted by the authors.



Mafex expands its number of members to 118 and reports an intense action plan for 2023

THE ASSOCIATION HAS REPORTED THE INCORPORATION OF NEW MEMBERS AND THE DEVELOPMENT OF ACTIVITIES IN 2023 AT THE GENERAL ASSEMBLY OF MEMBERS, HELD AT THE SPANISH CONFEDERATION OF BUSINESS ORGANISATIONS (CEOE) IN MADRID.

A SUMMARY WAS ALSO MADE OF THE MORE THAN 220 ACTIONS ORGANISED AND / OR COORDINATED BY MAFEX OVER THE PAST YEAR.

Mafex held its twenty-first General Assembly on 30th May. The event had a wide participation of its 118 current members. In addition, the public session was attended by institutions such as the Ministry of Transport, Mobility and Urban Agenda, Adif, Renfe, the Spanish Railways Foundation (FFE), the Spanish Railways Technological Platform (PTFE), Metro de Madrid and CDTI. In addition, and in the words of Víctor Ruiz, President of Mafex, it was stressed that "greater support for the Spanish railway industry is required with stable and continuous investments not subject to political changes and that are committed to strengthening the competitiveness and competence of our industry. A culture characterised by innovation, flexibility and digitalisation must also be maintained. For that purpose, we need R + D + i programmes

that include long-term funding schemes. The railway is extremely competitive, but we must work for it to remain that way in the coming decades, promoting a conti-

nuous technological evolution and having the best talent."

During the first part of the event, a summary was made of the more than 220 actions organised and / or coordinated by Mafex over the past year. In addition, there was a highlight of the increase in the number of members, the unmissable events for foreign promotion both in 2022 and 2023 such as InnoTrans, the 8th International




Railway Convention recently held in Toledo and Rail Live! Progress in innovation and talent actions, the implementation of industry forums of international markets, digitalisation, and sustainability for the promotion of networking and other initiatives, forums, and channels in terms of communication, representation, and collaboration.

On the other hand, there was a presentation of the actions that will take place during the second half of the year, among which the fair-congress Rail Live! stands out.

Mafex co-organises again in Madrid the Spanish railway sector reference event with a distinctive international trait and that has the support of the entire sector. It will have the presence of more than 250 companies in the exhibition area, a congress agenda of more than 350 speakers and an

estimated participation of 10,000 people.

It is worth noting that, within the framework of this meeting, some of the new companies that have

joined Mafex in recent times were formally welcomed: Air Rail, Deimos Group, Grupo Ecnor, S.A.E. Ibertest, Job Impulse España, Llalco - Industrial, Salicru, Trafag España and Wabtec Corporation. 



amurrio
ferrocarril y equipos, s.a.



A complete range of switches and crossings for urban layouts

Adif and Mafex will develop new lines of work to promote the competitive improvement of the Spanish railway sector



Adif and the Spanish Railway Industry Association (Mafex) signed on 4th July the renewal of the collaboration protocol with which they will develop new lines of work to promote the competitiveness of the Spanish railway sector, which generates more than 30,000 jobs in Spain.

With this alliance, both parties seek to strengthen the international positioning of the Spanish railway sector and they commit to continue working together in terms of innovation and competitive improvement.

Adif and Mafex will promote activities aimed at encouraging companies in the railway sector to be

THEY WILL COOPERATE TO CONSOLIDATE THE GLOBAL POSITIONING OF THE SPANISH RAILWAY INDUSTRY AND TO PROMOTE R + D + I PROJECTS THAT PLACE COMPANIES AT THE FOREFRONT OF TECHNOLOGY.

more competitive and at the forefront of technology, thus consolidating confidence in the railway transport and the Spanish railway industry.

Some of these lines of work will focus on the joint participation in foreign promotion activities, creation of working groups, promotion of international R + D + i projects, technical visits to facilities and

meetings with international railway entities and actions to attract talent to the railway sector, among others.

The President of Adif and Adif AV, María Luisa Domínguez, has underlined the company's leadership position in the development and management of railway networks and its contribution to the international projection of the sector,

aligned with the objectives of its 2030 Strategic Plan, through the promotion of projects and the participation in discussion forums and groups. "The railway transport has become the centre of the new mobility," - she added-, "collaboration with business associations in the sector in this context is decisive to continue consolidating companies and institutions at the forefront and as leaders in a more sustainable, structuring, safe and intelligent mobility".

The President of Mafex, Víctor Ruiz, has indicated that he values the renewal of the agreement very positively. In order to "seek the maximum support and coordination in the future, it is essential to further promote public-private collaboration, especially involving SMEs". In addition, the Association also emphasizes the idea of collaboration to "promote greater use of public railway transport, which is playing and should play in

the future a key role in facilitating sustainable and safe mobility of people and goods in our country. It is necessary to continue working on strategic aspects such as the digitalisation of the railway as a mode of transport and of the industry itself, as well as on technological solutions and innovations that, in addition to allowing an increase in capacity and optimisation of transport, allow savings and energy efficiency".

Commitment to the sector

This agreement strengthens the bases of cooperation between both entities that have been collaborating in recent years in the development of new business opportunities for companies.

Adif supports the internationalisation of the Spanish railway sector and the improvement of the competitiveness of Spanish companies, through the participation of its experts in projects and visits organi-

sed by companies in the industry with entities from different countries. Adif's collaboration in activities that promote and catalyse the internationalisation of the Spanish industry is one of the objectives reflected in its international strategy.

Mafex, which has been operating since 2004, has as its main objective to serve the Spanish railway industry and to defend the general interest of its current members. All this acting as a facilitating agent through the implementation of initiatives in terms of internationalisation, innovation and talent, strategic monitoring, industry representation and institutional relations, marketing, and communication, thus strengthening the competitiveness and global presence of its members through cooperation and the use of joint capabilities. At present, it consists of 118 members that represent the entire value chain and accumulate 83% of Spanish railway exports. 🚂

SUBSCRIBE TO THE MAGAZINE

Mafex

<http://magazine.mafex.es>

MAFEX Revista corporativa de Mafex
Asociación Ferroviaria Española



New Mafex members

The number of companies joining Mafex continues to increase. There are the 8 new members:

MAFEX CONTINUES TO GROW WITH THE RECENT ADDITION OF ELEVEN NEW MEMBERS. MAFEX HAS WITH THESE ADDITIONS A TOTAL OF 118 COMPANIES AND ENTITIES REPRESENTING ALL THE SUBSECTORS OF A LEADING INDUSTRY THAT IS MAKING ITS WAY AROUND THE WORLD.



AIR RAIL

AIR RAIL is a company specialised in the manufacture and distribution of machinery, working in the airport and railway sector.

Within the railway industry, its activity is divided between the manufacture of its own products and the distribution of important brands in the sector. In terms of manufacturing, AIR RAIL specialises in railway washing systems, bogie washing cabins, water treatment units and blowing booths, among others. In its distribution activities.

it represents Zephir shunters, IME Autolift lifting systems and SAMS re-railing equipment.



EKIDE

Ekide has Ekide SC, a business unit dedicated to engineering and manufacturing of assemblies or subassemblies of parts based on different manufacturing processes for the railroad sector. The activity of this business unit is developed in the following areas: Engineering (Conceptual design + Product development), Mock-ups and prototypes (with a wide range of manufacturing and prototyping processes to check aesthetic and functional aspects prior to mass production), rapid tooling, for the manufacture of prototype injection molds and manufacturing (SMC, infusion, etc.)



CENTUM DIGITAL

CENTUM is a Spanish technology company specialized in Communications, Control and Signal Intelligence, created in 2005, with an international presence (Germany), whose main activity is the design, development and commercialization of products and services for different sectors.

In the most demanding environments, such as Aeronautical, Naval and Railway, we offer services and carry out projects mainly oriented towards Certification, Systems Integration (including critical and non-critical SW development), HW/SW Assurance and Cybersecurity processes. We also offer digital solutions for the Identification, Geolocation and Tracking of assets in the Smart Factory.



MOSDORFER UPRESA RAIL, S.A.U.

Supply of catenary systems for new installations and maintenances of tramway, conventional and high speed contact lines for international and national projects (Spain, Arabia, Israel, Turkey, Ethiopia, Tanzania, Mexico, Peru, Ecuador, Bolivia, Norway, Sweden, Lithuania...).

Installation of the compensated tensioning devices TENSOREX®, TENSOREX® C+ around the world.



SALICRU, S.A.

Its main mission is to guarantee a continuous, clean, economical, reliable and ecological electricity supply to its customers, for which it offers a wide range of products capable of providing solutions for the most sensitive systems and most demanding markets.

SALICRU has the widest national coverage and 10 subsidiaries abroad, selling its products in more than 130 countries, with more than 2,000,000 pieces of equipment in operation. Likewise, SALICRU is certified with ISO-9001, ISO-14001 and ISO-45001 and its products are designed and produced in a way that respects the environment.



SYNEOX RAIL S.L.

Syneox was born from the merger of the railway divisions of three world-renowned companies; Grupo Cobra, Semi and Cymi. We integrate all the technologies and systems involved in a railway line:

Energy. Leader in energy supply to all railway systems.

Signaling and auxiliary systems. Railway technologies worldwide.

Associated civil works. To the installation of railway systems Operation and maintenance. High speed, conventional network, trams and subways.

Solutions. Turnkey solutions. Concessions and Public-Private Associations.



S.A.E. IBERTEST

IBERTEST is a company that has been developing, manufacturing, and supplying mechanical testing systems for materials and components since 1970. We provide our systems for various sectors, including the railway industry, and consistently adhere to the highest standards of quality and technology.

Additionally, we offer turnkey projects for the creation of laboratories and national reference centres for testing, quality control, research and training. Our integrated approach allows us to provide global solutions for research and quality control of a wide variety of materials and components.



VIRLAB, S.A.

VirLab is a reference laboratory for dynamic vibration and shock testing. Created in 1976 and located between San Sebastian and Toulouse and less than one hour from Biarritz airport (France), the laboratory develops accredited tests for equipment that may be subject to earthquakes or other types of vibrations and shocks.

VirLab's laboratory tests electrical, mechanical and instrumentation components, equipment and systems that, due to their use, may be subject to compliance with specific regulations under seismic, vibration or shock conditions.

Mafex participates in a new edition of the Global Public Transport Summit organized by UITP

THE MOST IMPORTANT INTERNATIONAL EXHIBITION FOR PUBLIC TRANSPORT WAS ORGANISED BY THE INTERNATIONAL UNION OF PUBLIC TRANSPORT FROM 4TH TO 7TH JUNE.

Under the slogan "Bright, light of the city light of the city", there was also a Spanish pavilion organized by ICEX España Exportación e Inversiones with the participation of Adif, Ineco, MainRail, Grupo Revenga, Sice, Teltronic, Typsa and Mafex, in

addition to the presence of other companies from the other companies from the Spanish railway sector, such as ABB, Alstom, Caf, Calmell, Comsa, GMV, Hexix Graphics España, Idom, Indra, Ingerop, Sener, Siemens Mobility, Stadler, Teldat, Thales and Renfe. Graphics

España, Idom, Indra, Ingerop, Sener, Siemens Mobility, Stadler, Teldat, Thales y Renfe.

During this edition of the event there was a debate on current trends and challenges facing public transport worldwide, such as the energy crisis, the impact of inflation and talent. There were 280 exhibitors, 300 speakers and 2,500 participants.

ÖBB challenges day organised by Mafex to promote collaboration in R+D in the railway field

On 24th May, Mafex welcomed in Bilbao the representatives of ÖBB, the state railway operator of Austria in a new "Challenges Day" organised by the Association.

Its main objective was to raise awareness of the activity that the Austrian operator carries out in the field of innovation. ÖBB representatives highlighted the priorities and procedure for companies to participate in their tenders. The day focused above all on the search for innovative solutions to the challenges previously identified by ÖBB. The Austrian operator is looking for

ON 24TH MAY, MAFEX WELCOMED IN BILBAO THE REPRESENTATIVES OF ÖBB, THE STATE RAILWAY OPERATOR OF AUSTRIA IN A NEW "CHALLENGES DAY" ORGANISED BY THE ASSOCIATION.

partners in Spain who are ready to offer their solutions.










The participating companies also had the opportunity to present the technological solutions to the previously identified challenges, generating round table discussions that dealt with, among others, solutions for the smart monitoring of infrastructure and rolling stock, smart operation, improvement in the pas-

senger experience, safety, and sustainability of the sector.

In the same way, ÖBB representatives also had the opportunity to visit the facilities of some of the Association's companies during their visit.

This commitment of the sector with R + D + i was reflected in the participation of representatives of more than 20 companies.



-  **Digital Twin and predictive applications**
-  **Cybersecurity of connected objects**
-  **5G for mobility**
-  **Advanced Optimization Algorithms for Transport and Logistics**
-  **Sustainable Development in Railway Business**
-  **A Sustainable and Green Rail System & Green Freight Logistic Chain**
-  **Advanced Materials Usage in Railway Industry**
-  **The mind-boggling challenge of keeping under continuous control the ever-increasing heterogeneous IoT data sources, interfaces and protocols in your industrial processes and applications**
-  **Smart Asset Management/Maintenance of the future and Railways Digital Twin**



STARS: Hack&Match events and training for the benefit of companies

THE STARS PROJECT AIMS TO SUPPORT THE SECTOR'S SMES IN THE IMPLEMENTATION OF ADVANCED TECHNOLOGIES, GIVING A BOOST IN TERMS OF PRODUCTIVE PERFORMANCE AND INCREASING THE CAPACITY OF SMES TO INNOVATE.

After analyzing current developments and trends in the sector and identifying the innovation trends that will be key to future development, STARS has made two tools available to SMEs: Hack&Match events and training courses.

The Hack&Match events have included a Hackathon part and a

matchmaking session between the participating companies. This tool accompanies traditional SMEs in the search for solutions to their challenges.

Five Hack&Match events were organized as part of the project. Challenges dealt with: "Energy efficiency for processes, products and services"; "Big data for railway processes, products and services"; "Blockchain for

railway processes, products and services"; "Digital Twin and Artificial Intelligence for railway processes, products and services" and "Advanced Technologies for Rail Supply Chain Resilience".

Another important pillar of the project is training for organizations in the railway sector. Between March and June 9 training sessions were held with a variety of topics such as 5G in mobility, digital twins and predictive applications, the use of advanced materials or sustainability in the sector. To date, 42 member companies have taken part in training and 173 delegates have benefited from them.

The Circular Economy and the railway, protagonists of the third industry forum of the year organised by Mafex



In the morning of 13th June Aitor Ballester, Head of Business Development and Strategic Intelligence at Mafex, opened the third of the Forums that the Association will launch this year.

On this occasion, the Forum has been focused on sustainability and specifically on "Circular Economy". Ballester has highlighted that "we need to move to an economic model that allows us to keep products and materials in use and redesign processes so that waste and pollution be radically reduced. The transport sector plays a decisive role in this joint fight and the railway positions itself as the backbone of sustaina-

MAFEX HAS HELD THE THIRD OF THE 2023 INDUSTRY FORUMS, WHICH AIM TO SERVE AS KEY MECHANISMS FOR INDUSTRY REVITALISATION AND THAT ARE EMERGING AS A MEETING PLACE AMONG THE ORGANISATIONS THAT MAKE UP THE VALUE CHAIN OF THE RAILWAY SECTOR. ON THIS OCCASION, IT HAS BEEN FOCUSED ON "CIRCULAR ECONOMY".

THIS INTEREST AND COMMITMENT OF THE RAILWAY INDUSTRY HAS BEEN REFLECTED IN THE PARTICIPATION OF MORE THAN 55 REPRESENTATIVES OF COMPANIES IN THE SECTOR, ALSO INCLUDING THE PRESENCE OF ENTITIES SUCH AS ADIF, RENFE, THE SPANISH RAILWAYS FOUNDATION, METRO DE MADRID AND ALAMYS - LATIN AMERICAN ASSOCIATION OF METROS AND SUBWAYS.

ble mobility". His intervention was followed by Cristina Riestra, CEOE's Head of Environment and Climate

Change, who presented the "Spanish Circular Economy Strategy" and the key aspects of the Circular

Economy PERTE. Next, Isabelle De Keyzer, Senior Advisor of Environment and Sustainable Development at UIC - International Union of Railways, presented the organisation's activities in terms of sustainability and circular economy, as well as the projects they are undertaking.

Adif's Infrastructure Manager, as well as Jonathan Sánchez, Deputy Director of Corporate Responsibility, Sustainability and Branding, have shared how they are addressing sustainability at a strategic level and their contribution to the "Spanish Circular Economy Strategy", as well as the initiatives they are carrying out to incorporate the criteria in the field of sustainability. Finally, Santos Nuñez, Corporate Head of Energy and Sustainability at Renfe, pointed out the importance of the role of innovation as a driving force for the incorporation of circularity.

To end the session, a round table was held on "The railway industry and its commitment to the circular economy", which was facilitated by Patricia Lasheras, Mafex

Head of Marketing and Communication, and counted with the participation of four representatives of the association's member companies.

Ana Fernández-Iglesias, Portfolio Director - Sustainable Mining at ArcelorMittal, highlighted that "the steel features make it an essential material in the circular economy where R+D and innovation are essential to position ourselves as leaders in the production of green and smart steels. Our centre in Spain is a global reference for this." Carles Camprubí, Director of Sustainability at La Farga, explained that "the railway sector, positioned as the most sustainable of the means of transport, is prepared at the regulatory, technological and product level for the use of 100% recycled and circular contact wire, and there are already infrastructure managers considering its incorporation".

On behalf of Idom, M^a Concepción Ortega, Global Market Director, stressed that the company is "committed to sustainability and

we introduce the principles of the circular economy in railway designs by rethinking, reducing, reusing, recycling and recovering resources, influencing the entire life cycle, reducing its carbon footprint and increasing the social value of the designed infrastructures".

To conclude the panel, Jesús Torcida, Head of Quality & Environmental Management Systems at Talgo, mentioned the "three key lines of work to ensure that the railway sector remains at the forefront of sustainable mobility: integration and alignment of the entire supply chain, circularity in design thinking about the entire life cycle and reduction of the carbon footprint of operations in the three scopes, in the manufacture, and during the maintenance and operation of trains"

This interest and commitment of the railway industry has been reflected in the participation of more than 55 representatives of companies in the sector, also including the presence of entities such as Adif, Renfe, Spanish Railways Founda-





Mafex holds its fourth session of the "International Markets Forum" dedicated to the potential of the Portuguese railway market

PORTUGAL IS A KEY MARKET FOR THE SPANISH RAILWAY SECTOR AND OFFERS GREAT BUSINESS OPPORTUNITIES FOR THE INDUSTRY THANKS TO THE TRANSFORMATION PROCESS IT IS UNDERGOING WITH THE REFORMS AND INVESTMENTS ASSOCIATED WITH EUROPEAN UNION FUNDS.

THE MAFEX FORUMS AIM TO SERVE AS KEY MECHANISMS FOR INDUSTRY REVITALISATION, AND ARE A MEETING PLACE AMONG THE ORGANISATIONS THAT MAKE UP THE VALUE CHAIN OF THE RAILWAY SECTOR.

The second session of 2023 of the International Markets Forum was held on 28th June in Madrid with a day that has been focused on Portugal and has had the participation of more than 60 attendees. Aitor Ballestero, Head of Business Development and Strategic Intelligence at Mafex, stressed at the meeting that "Portugal is a priority market for the Spanish railway industry due to the investments planned in the short and medium term, as well as our proximity and historical relationship. The important modernisation process that the country is bringing about is reflected in the high volume of invest-

ment foreseen in the 2030 National Investment Programme, which will mobilise more than 10.5 billion euros in the railway sector, which represents 25% of the total investment of the programme".

Benedetto Giuntini, Chargé d'Affaires of the Italian Embassy in Madrid, opened the day contextualising the key elements of the railway sector in Italy.

Subsequently, our collaborator Joan Gasol presented the report "Focus On Italia" and the opportunities that the Italian market offers for Mafex members, while Andrea Giuricin, CEO of TRA Consulting, reviewed

the main keys of the liberalisation process that the railway market is experiencing in Italy.

Next, Massimo Martinelli and Federico Carpita, CEO and Sales Manager of M.A.I. Consulting respectively, delved into the planned investments in railway matters and the tenders expected over the next three years. After their interventions, Roberto Nocella, First Counsellor and Head of the Economic and Commercial Office at the Italian Embassy, and Marina Ruiz de Ojeda, Head of Promotion of Spanish Investment in Italy at the ICE Office in Madrid, presented the keys and incentives to facilitate and promote investments by Spanish companies in Italy.

Finally, Ainara González, Head of Trade Policy and Institutional Relations at Mafex facilitated a round table with Claudio Zamponi, Business Development Manager at CAF, and Giovanni Monni, Stadler's Sales Area Manager, who shared with all the attendees the experience of their companies in the country.

Mafex attends the General Assembly of UNIFE general assembly in Madrid

MAFEX ATTENDED THE UNIFE GENERAL ASSEMBLY OF UNIFE, WHICH THIS OCCASION TOOK PLACE IN MADRID FROM JUNE 14 TO 16, WITH THE AIM OF DISCUSSING THE FUTURE OF THE RAIL SUPPLY INDUSTRY AT A TIME WHEN THE BENEFITS OF THIS MODE OF TRANSPORT ARE MOST NEEDED THROUGHOUT THE EUROPEAN UNION AND AROUND THE WORLD.



Over two days, Unife members were able to meet in various forums and com-

mittees and discuss topics such as Investment and Public Procurement; Digitalization and Innovation; Inte-

roperability and Sustainable Mobility among others.

The meetings allowed for an analysis of the emerging challenges and opportunities presented by rail as a backbone of sustainable mobility. Rail is the safest and most sustainable form of collective transport, it is the clearest option for policy makers who wish to for policymakers wishing to formulate answers to Europe's most pressing concerns: the creation of high-skilled jobs with a technology focus, the fight against climate change and the and the development of economic resilience.

In addition, other topics of interest such as improving mobility with digital solutions, ensuring fairer competition through trade instruments and an update on the main railway developments in Spain, the participants considered the important paths to be followed by the railways in the coming months and years.

Mafex has strengthened the communication with the Spanish Railway Safety Agency (AESF) on technical specifications for interoperability

THE ASSOCIATION HAS STRENGTHENED ITS DIALOGUE WITH THE SPANISH RAIL SAFETY AGENCY (AESF) IN THE FIELD OF TECHNICAL SPECIFICATIONS FOR INTEROPERABILITY.

As representatives of the Spanish rail industry, in Mafex we are aware of the need to have a unique railway space in Europe, and that this depends on the promotion of interoperability and the rapid and effective deployment of all those sys-

tems and equipment that support it, but also on the need for some technical flexibility and of acceptable, reasonable and less burdensome deadlines for all parties involved. Therefore, during the last few months in Mafex the communication has been strengthe-

ned with an entity as key to our sector as the Spanish Railway Safety Agency (AESF). Periodic meetings have been held with AESF's management to address issues as critical to the industry as the review of the TSIs (due to its acronym in English, *Technical Specifications for Interoperability*).

In parallel, a specific working group has also been set up within the Association that will give continuity and greater depth to the work and efforts already carried out in these first nine months of the year.

CAF Signalling makes Uruguay the country with the most ERTMS kilometers in Southamerica

CAF SIGNALLING

Ferrocarril Central of Uruguay is the most ambitious railway project of the last 50 years in the country. The objective is the total reconstruction of half of the trunk line of the railway network, the Montevideo-Paso de los Toros line. The first stage of dynamic testing has been successfully completed on a 20-kilometer section between Florida station, Florida Norte and Apartadero La Cruz.

One of the most noteworthy features of the project is its signalling. Uruguay will become the third country in South America to have the European ERTMS rail traffic manage-



ment system, after Brazil and Chile, which it will surpass in the number of kilometers equipped. In consortium with Revenga Smart Solutions, CAF Signalling is responsible for carrying out the signaling. In addition to the

ERTMS N1 system, 10 electronic interlockings and 20 object controllers, 175 level crossings, local operating stations and a Centralized Traffic Control Center have been installed on the 273 kilometers of track.



Alstom Spain implements security and passenger information systems for the largest metro project in Canada

ALSTOM

Alstom's Security and Network & Telecoms teams based in Madrid are leading the development and implementation of the security, communication and passenger information systems for the new Montreal

automatic metro, Alstom's largest turnkey project in Canada and one of the largest driverless metro systems in the world.

Alstom Spain's Technology Centre in Madrid is responsible for the development of the ISM (Integrated Security Manager) and the other subsystems that make it up. These include infrastructure cybersecurity, the system's network and

telecommunications, CCTV, the passenger information system, the communication system with the security forces, the passenger announcement system and intrusion detection, both on the tracks and in the stations.

The first section of this new network, known as REM (Réseau Express Métropolitain), entered commercial service at the end of July.

The new Panama Metro line will also have the Ineco seal of approval

INECO

Ineco is responsible for the Independent Safety Assessment (ISA) of the railway systems and rolling stock of Line L3 (Phase I) of the Panama Metro for the HPH consortium. These works are part of the engineering services for the design, construction, supply and commissioning of the overall railway system that will connect, through its nearly 26 kilometres and 14 stations, the population centres of the province of West Panama with Panama City, crossing the Panama Canal through a tunnel of more than five kilometres.

Independent Safety Assessments can only be carried out by an accredited assessor and are essential to guarantee that the design and construction of a new line, such as Line 3 of the Panama Metro, have been carried



out in accordance with the applicable safety standards and can enter into commercial service. Ineco is recognised as an inspection entity for the Independent Safety Assessment of Railway Applications valid in the more than 70 countries with which ENAC has mutual recognition agreements, including the European Union, USA, Canada, China, Japan, Australia, Brazil, India, Arab Emirates, Panama, Israel and Mexico, among others. Our company has been carrying out Safety Assessments on the Spanish railway network for more than a de-

cade, a task in which it was a pioneer.

Line L3 of the Panama Metro, one of the most ambitious projects currently being developed in the country, will be a monorail system on an elevated viaduct and will mean great savings in travel times compared to current means of transport.

It will have a yard and workshops on the surface for the rolling stock and will also be more sustainable as it will use electricity as a source of energy and will not emit polluting gases.



Sener, Independent Checker Engineer of the new Montreal light rail (REM)

SENER

Sener is responsible for the independent verification of the contractor's design and compliance with the technical requirements for the design, execution, and regula-

tions of the REM, a new automated and integrated system of 67 km (18.2, on elevated structures). It also checks compliance with local regulation and prepares certificates and a compliance report. CDPQ Infra leads the planning, financing and completion of the REM, a C\$ 6.9 billion project.

Sener has participated in practically all the Canadian railway and transport projects of the last decade, such as the Finch West LRT, Eglinton Crosstown West Extension, Ontario Line Civil South, Scarborough Subway Extension, On-Corridor project (Toronto), Confederation and Trillium Line (Ottawa) or Valley Line (Edmonton).



New caf contracts in Italy
CAF

CAF, one of the main urban mobility solutions suppliers in Europe, continues adding new successes in Italy.

The company has secured an agreement with Ente Autonomo Volturmo - responsible for the re-

gional and metropolitan public transport service in Naples - for the supply of 6 metro units, as well as their corresponding depot parts and comprehensive maintenance of the vehicles for 3 years.

These 6-car trains are equipped with the same features and equi-

pment as the units that CAF also previously supplied for Line 1 of the city's Metro.

On the other hand, CAF is going to supply the trams for the new lines A, B and C of the Palermo tram, contemplating the option of increasing this supply with another 35 additional units.



CETEST support to maintenance machines manufacturers in Spain and Portugal
CETEST

In recent years, CETEST has collaborated in the certification of different maintenance machines both in Spain and in Portugal from the manufacturers MATISA and PLASSER &

THEURER, regular clients of CETEST for tests in other countries. Fundamentally, the support of an accredited laboratory such as CETEST was required to on-track test and verify machines' correct dynamic behavior against the EN14363 standard, as well as its braking performance and, in some of them, the noise qualification.

The different campaigns have been carried out in metric gauge, as well as in Iberian and UIC gauge. CETEST has been in charge of locating the best tracks to carry out the tests and, in some cases, has also coordinated the operation, including requests for track permits, search for a licensed operator, organization of train slots, etc.



COMSA will take part in the maintenance of the La Dorada - Chiriguaná railway corridor in Colombia
COMSA

COMSA's subsidiary in Colombia, as a member of the San Felipe Férreo consortium, has been awarded the contract for the maintenance, con-

servation, and improvement of the La Dorada - Chiriguaná railway corridor in Colombia.

The project, awarded by the Agencia Nacional de Infraestructura (ANI), will provide continuity to the rail freight operation and will lead to greater logistical efficiency, enabling a 26%

reduction in transport costs. The La Dorada - Chiriguaná section is 522 kilometres long and is a railway corridor of great importance as it connects the interior of the country with the Caribbean region, through the departments of Caldas, Antioquia, Santander, Norte de Santander, and Cesar.

Ingérop acquires Leedeo Engineering
INGEROP

Ingérop, an engineering and consulting group, with presence in Spain for more than 20 years, 4 offices in Madrid, Barcelona, Granada and Seville and a team of about 90 employees, has acquired Leedeo Engineering. With offices in Barcelona and Madrid, Leedeo specializes in RAMS engineering (Reliability, Maintainability, Availability, Safety), EMC studies (Electromagnetic Compatibility) and systems engineering in the field of urban and railway transport.

The arrival of Leedeo will enable the Ingérop group to increase its

production capacity in transport systems and in particular in FDMS studies.

These studies, carried out by Leedeo, are an essential component of

almost all transport projects in Europe and worldwide, and ensure their optimal operation as well as risk forecasting in line with the challenges of passenger transport in the XXI century.





SICE is awarded the project for the procurement of goods and services for the Automated Fare Collection System for the High Speed Train Project (Green Line) in Egypt

SICE
SICE is collaborating with Siemens Mobility on the implementation of the Automatic Fare Collection (AFC) system within the project for the construction of a new 2,000 km high-speed rail network in Egypt, worth 8.1 billion euros. This rail network will connect 60

cities across the country, enabling both passengers and freight to travel safely and efficiently, significantly improving the passenger experience and reducing travel time for millions of Egyptian passengers.

The first section will connect the Red Sea town of Ain Sokhna with Marsa Matruh and Alexandria on the Mediterranean coast via 21 stations.

SICE's scope within the project includes the design, supply, supervi-

sion of the installation, commissioning and maintenance of the latest technology sales and validation system in the stations, favouring the accessibility of all passengers to the public transport system.

The system will provide the capacity to manage different users, fares and types of journeys, as well as to reserve the seats assigned to them. SICE has been selected thanks to the great flexibility it offers in the development of the AFC Software, facilitating integrations with the different existing systems.

Contract for the Supervision of the Varanasi Cable Car in India Awarded to Ardanuy Ingenieria

ARDANUY INGENIERIA
Ardanuy Ingenieria will be in charge of the project review and supervision of the works for the Varanasi Cable Car. This city in the Uttar Pradesh region will be the first in the country to use cable car services for public transport.

The planned network will cover an area of five kilometres, running through the city centre. It will be implemented over the next two years. The cable car service will begin with four stations at an interval of 90 seconds between cabins. The starting terminal will be at Cantt train station, while other stations will be at Sajan, Rathyatra and Girjaghar (Godowlia) crossings.

This project is to be completed in 18 months. It is one of the most important transport projects initiated by the government directly supervised

by the Prime Minister of India, Narendra Modi, who visited the start of the construction works on 7 July.

According to the planned schedule, the country's first 'urban cable car' will have the first two stations in operation by 2024 and will be completed by 2025. Its operation will reduce travel times to only 17 minutes between the railway station and Godowalia Chowk, one of the most congested sections.

Ardanuy in India

With this award in the Cable Car sector, Ardanuy Ingenieria reinforces its

track record in India, a priority market for its international business.

Through its subsidiary, the consultancy firm is involved in numerous railway projects in the country. The most important projects include the main metros (Mumbai, Bangalore, New Delhi, etc.), various railway lines, in both freight corridors (east and west) and in intermodal stations such as Varanasi.

The company has more than 100 employees in its Ardanuy India subsidiary and has new offices in the Okhla district, southeast of New Delhi.



Siemens Mobility promotes a new line of production of converters cabinets

SIEMENS MOBILITY
Siemens Mobility promotes a new line of production of converters cabinets for trains at its factory in Cornellá (Barcelona), through the implementation of resources, skills and specialized teams in a significant expansion of processes and associated functions.

This milestone generates growth in the workforce of around 80 employees in direct and indirect roles.

The company's objective is to create a competence center specialized in the design of converters cabinets, looking for savings in both Design to Cost and Design to Manufacturing. This center will provide technical support for audits and



requirements of specific projects at an international level, both internal and external to the company.

With this initiative, the company strengthens its leadership in the railway industry and its commitment

to technological innovation. The production line and the competence center become fundamental pillars to optimize the manufacture of converters cabinets and to offer efficient and high-quality solutions globally.

Revenga Smart Solutions completes systems tests on "ferrocarril central" of Uruguay

REVENGA SMART SOLUTIONS
During this month of August, dynamic tests have been carried out on two sections of the "Ferrocarril Central" line (Uruguay) in which Revenga Smart Solutions has provided key systems for the safety and operation of this important infrastructure. These tests included the circulation of a locomotive on the track with 100% signaling and telecommunications, as if it were a normal circulation and at the maximum speed of the line.

The Revenga Smart Solutions systems involved were the following:

RailRox level crossing protection systems, including all possible types, both in terms of railway signaling (interlocked, affected, affected concatenated, full track and full track concatenated) and in terms of road protection to the road and

crosswalks (semi-barriers, pedestrian and SLAs).

Signaling IP data network, tested both in technical premises and at level crossings, including the fiber optic infrastructure (supply and laying, junction boxes, segregation, distribution frames) as well as the active equipment of the backbone, distribution network and access network. This network will also provide service to other systems re-

lated to railway operation, such as the radio network for communications with the train, the operating telephony and the video system for remote monitoring of the status of certain singular points on the line (trackside, turnouts, etc.).

The result of the tests has been fully satisfactory both for our customer (CCFC) and the end customer and related entities (CFU, MTOP, DNTE, DBCC).



Presentation of Stadler locomotives in Taiwan

STADLER
Taiwan Railways Administration unveiled the first Stadler locomotives on July 10 at the Changhua depot. Taiwanese authorities and representatives of Stadler Valencia attended the event.

The contract for the supply of 34 locomotives was signed in October 2019 and was our company's first order in the Pacific region. The first four 1067 mm gauge locomotives are already in Taiwan undergoing acceptance trials on the country's railway network. They are expected to enter commercial service later this year.

The six-axle locomotives from



Stadler's SALi family are specifically designed for Taiwan's tropical and subtropical climates with 100% humidity, and temperatu-

res of up to 45°C. They achieve 120km/h and are intended to be used for both passenger and freight services.

The engineering group Segula Technologies expands for the third consecutive year its offices at the Railway International Centre Of Excellence In Zaragoza

SEGULA
During the first half of 2023, the headquarters of the Railway Division of "SEGULA Tecnologías Spain" (the Spanish subsidiary of the French group) completed a new process of expansion of its offices in Zaragoza. This is the third expansion in



two years (2021, 2022, and 2023) and once again it is caused by the increasing demand for rolling stock development projects. With this third expansion, "SEGULA Tecnologías" consolidates its stable growth in the railway sector and places the Zaragoza office as one of the largest worldwide of the entire international group.

José Ángel Martín, Executive Director of the Railway Division of SEGULA Spain, remarks that "there is no doubt that the sector is going through a good moment. But the growth of the office has been unstoppable in its almost 20 years of history within the SEGULA group. And this is due to the professionalism of the good team behind each project, which is the reason why our clients keep trusting us".

Today, the Zaragoza Railway Centre of Excellence is capable of carrying out comprehensive projects that cover the entire V-cycle of the projects: from the conceptual phases and the definition of requirements, to the industrialisation of the products. This

is thanks to the transversal structure of the office, organised into different areas that cover practically the whole of railway engineering.

In the words of its director, "the model of the office & project management provides us to have the flexibility to take on several and simultaneous turnkey projects. And this enables us to continue the growth while, at same time, increasing our experience and know-how. Today, we have a large number of employees with more than 10 years of seniority in the company. And this allows us to affirm that we are an expert rolling stock engineering company composed by expert people".

With this third expansion, the Railway Division of SEGULA Spain has a team of more than 200 technical experts in the development of rolling stock projects in the Zaragoza office, to which, adding the staff distributed in its centres in Madrid, Barcelona and the Basque Country, makes a total of 250 people dedicated specifically to the RAIL sector.

Teltronic, acknowledge at the International Critical Communications Awards

TELTRONIC
Teltronic's project "Delhi-Ghaziabad-Meerut corridor, communication over 3GPP MCX technology ready for FRMCS" received the award for the Best use of critical communications in transport at the International Critical Communications Awards, the most prestigious prizes in the field of critical communications at a global level.

Teltronic was responsible for the integration of the on-board equipment, radio dispatchers, smartphones and the control centre solution to provide the MCX (Mission Critical Services) services to the Delhi to Meerut Regional Rapid Transit System.

The work highlights the validity of Teltronic's MCX solutions for voice and data transmission as defined by the 3GPP standard, and aligned

with the development of the FRMCS (Future Rail Mobile Communication System).



Zeleros completes test track in Sagunto and runs first successful tests

ZELEROS
Zeleros has completed its dynamic prototype of the switched reluctance linear motor at the port of Sagunto.

With this technological achievement, Zeleros advances in the va-

lidity of the launching mechanism of hyperloop vehicles and steps up in the commercialization of e-mobility solutions, such as SELF (Sustainable Electric Freight Forwarder), an electric platform for automated container movement.

As a company applying technical innovation, engineering, testing,

and prototyping capabilities to deliver high-performance electric mobility solutions, this is a great milestone that has allowed the company to work in close collaboration with partners such as Acciona or Arcelor Mittal and deepened the dialogue of port logistic challenges and sustainable solutions to accompany them. More at www.zeleros.com



New edition of de Rail Live! from 29th November to 1st December 2023, in Madrid

The new edition of Rail Live! 2023 will be held in Madrid from 29th November to 1st December 2023 at IFEMA, Madrid. For three consecutive days, more than 250 experts from around the world will discuss the challenges and opportunities presented by the railway, as well as the planned investments to continue with its implementation and digital transformation. More than 7,000 people from 40 countries are expected to attend. Rail Live! 2023 is a highly anticipated event by the entire industry, taking place at a pivotal moment of transformation of the sector. The congress programme has a huge relevance in this edition, and under the motto: "Technology, innovation & Strategy for the entire rail supply chain" an agenda full of panels, presentations and round tables will be presented.

The programme covers all current topics for the future development of the industry, such as: Liberalisation, Goods, Megaprojects, Metro, Light Rail, Digital Control of Trains and Telecommunications, Sustainability and Energy, BIM, and Digital Transformation among others. This

MAFEX PARTICIPATES ONCE AGAIN IN THE ORGANISATION OF RAIL LIVE!, WHICH THIS YEAR IS HELD AT IFEMA, MADRID.

edition will also refer to the railway sector as an attractive sector for employment, and the initiatives that are being implemented for the attraction and retention of talent as well as the new profiles that need to be incorporated.

The event also benefits from the presence of the main national and international companies in the sector. The wide national participation stands out, as well as the participation as sponsors of companies such as Grupo CAF, NGRT, Talgo, ABB, ESRI, Stadler and Thales, among others. More than 250 companies are expected to participate and explain their latest innovations and to present their technological developments. There will also be a dedicated area to host more than 100 start-ups.

Rail Live! 2023 once again has the support of Mafex, the Association of the Spanish Railway Industry, in the organisation of the event. The Ministry of Transport, Mobility and Urban Agenda, through Adif and Renfe,

as well as ICEX Spain Trade and Investment, the Spanish Railways Foundation (FFE), and the Spanish Railway Technology Platform (PTFE) collaborate in the development of this event. In addition, this edition will have the collaboration of Comunidad de Madrid (Madrid Autonomous Community), Madrid City Council and Madrid Metro.

More details about the congress, the speakers and the participating companies on the following web page <https://www.terrapiinn.com/conference/rail-live/index.stm>

More than 200 experts from around the world will discuss the challenges facing the railway sector



RAILLIVE!

29 November - 1 December 2023
IFEMA, Madrid

Technology, Innovation & Strategy
For the entire rail supply chain



10,000
ATTENDEES

350
SPEAKERS

250
EXHIBITORS

3 DAYS



ORGANISED BY

SPARK SOMETHING
TERRAPINN

IN PARTNERSHIP WITH

MAFEX
INDUSTRIA FERROVIARIA ESPAÑOLA
SPANISH RAIL INDUSTRY



Get your free tickets
terrapiinn.com/RL23/Mafex

8th International Railway Convention

Toledo hosted Mafex 8th International Railway Convention organised by Mafex with the support of ICEX Spain Trade and Investment. A professional and global meeting that has become a benchmark in the Spanish railway sector. Once again, the industry has welcomed very positively this biennial initiative that has brought together delegates from 30 countries.

The opening ceremony was attended by the President of Mafex, Víctor Ruiz; the CEO of ICEX Spain Trade and Investment, María Peña, the Minister of Development of Castilla-La Mancha, Ignacio Hernando, and the Secretary General of Infrastructures

ONCE AGAIN, THE INDUSTRY HAS WELCOMED VERY POSITIVELY THIS BIENNIAL INITIATIVE THAT HAS BROUGHT TOGETHER DELEGATES FROM 30 COUNTRIES.

of the Ministry of Transport, Mobility and Urban Agenda, Xavier Flores. Adif, Renfe and Metro de Madrid also collaborated in the event.

After welcoming all the participants, Ruiz highlighted the "knowledge, experience, potential and reliability of the Spanish railway industry as a preferred partner when designing, implementing and executing railway projects around the world". Proof

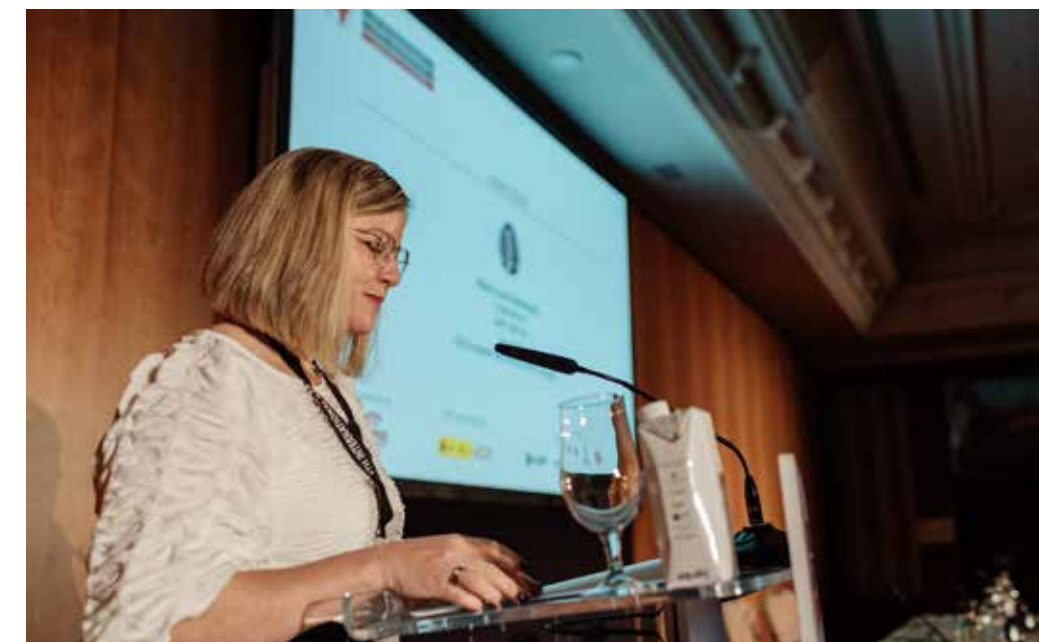
of this is "the extensive network of metros and trams, high-speed and commuter lines that Spain has, which are the best evidence when it comes to positioning ourselves in more than 95 countries".

An extensive programme of technical seminars and congress sessions

As on previous occasions, the convention represented an opportunity to gauge the sector and open new

The convention provided an opportunity to gauge the sector and to open new business opportunities abroad

business opportunities abroad. All this, in a format of technological knowledge that had an extensive programme of technical seminars by some of the participating Spanish railway companies and congress sessions carried out by the international delegates.





All of them gave a good example of the technological developments

achieved by the industry associated with Mafex, as well as its extensive

international implementation as a benchmark in R+D in railway projects of great magnitude and complexity.

Opportunities for internationalisation

Along with the discussion topics that were presented in the technical seminars, Mafex organised a round of about 400 face-to-face meetings (B2B meetings) between the international guests and the Spanish businesses and organisations participating in the convention to study new possibilities of collaboration and to explore business opportunities.

Among the countries that were present at the Toledo Convention were representatives from Germany, Brazil, Colombia, Chile, Ivory Coast, France, India, Ireland, Egypt, the United States, the Netherlands, Poland, Portugal, United Kingdom, Senegal, Serbia, Singapore, Thailand, Tanzania, the Philippines, and Turkey.

BE MOTION.

The energy transition is an unstoppable process. To face this challenge, **The Real Dream Team** is born, a movement based on Heroes and Heroines that just like you do, share the same dream: a world where the energy production is clean. Will you join?



THE
REAL
DREAM
team

BE PART OF
THE ENERGY
TRANSITION.
BE A
HERO.

50 YEARS
ELECTRIFYING
A SUSTAINABLE
FUTURE



The eighth edition of the event had broad support from numerous institutions

On the other hand, in order to raise further awareness of the Spanish progress in transport, Adif organised technical visits to the Atocha station, Renfe's "La Sagra" high-speed train maintenance workshop, and the central offices and Gran Vía station of Metro de Madrid.

Bilateral meetings

In parallel, during the days of the event, more than 400 individual meetings were held between the more than 50 foreign guests and representatives of the participating Spanish businesses and organisations, with the aim of strengthening commercial ties and

exploring cooperation opportunities. The programme also included several technical visits as Atocha station by Adif, "La Sagra" by Renfe and the central offices and station by Metro de Madrid.

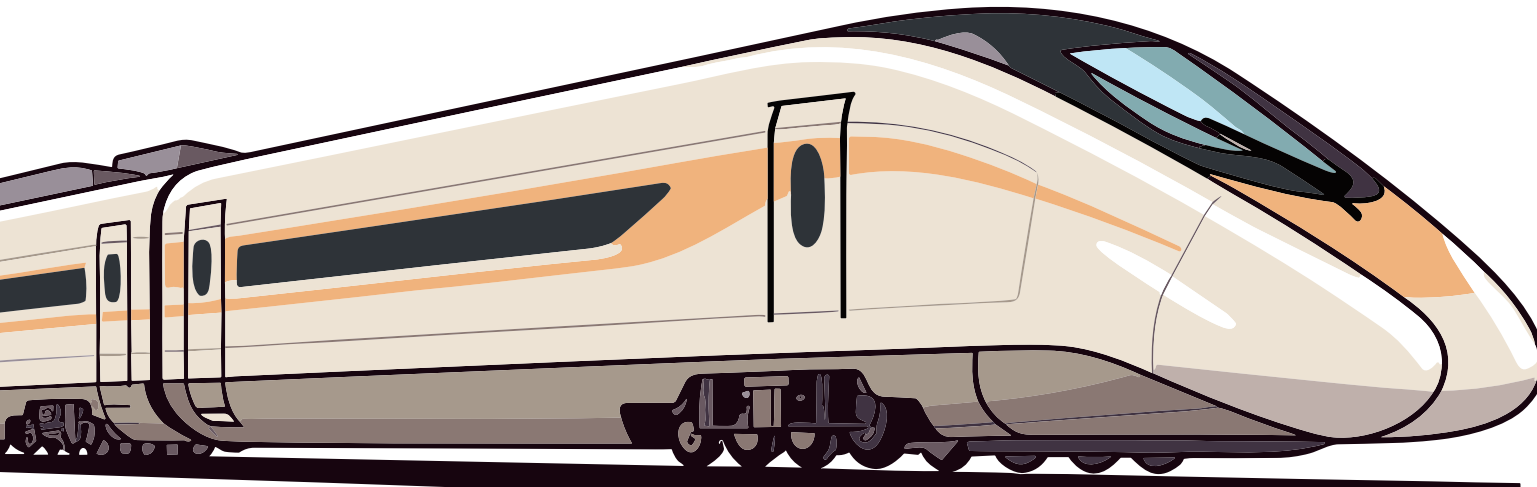
Broad institutional support

The eighth edition of the event had the collaboration of numerous institutions whose support was greatly appreciated by Mafex. Among them, ICEX Spain Trade and Investment, Ministry of Transport, Mobility and Agenda, Adif, Renfe, Ministry of Development of Castilla-La Mancha and Metro de Madrid.



PARTICIPATING INTERNATIONAL AGENCIES		
COUNTRY	COMPANY	POSITION
BRAZIL	Companhia Paulista de Trens Metropolitanos (CPTM)	CEO
BRAZIL	Companhia Paulista de Trens Metropolitanos (CPTM)	Advisor to the Director of Operation & Maintenance
CHILE	Empresa de los Ferrocarriles del Estado (EFE)	President of the Management Board
CHILE	Empresa de los Ferrocarriles del Estado (EFE)	Executive President
COLOMBIA	Metro Bogotá	Executive Manager
COLOMBIA	Metro Bogotá	CEO
COLOMBIA	Metro Medellín	Head of Research, Development & Innovation
EGYPT	The National Authority For Tunnels (NAT)	Director of the AFC Engineering and Ticketing Department
EGYPT	Egyptian National Railways (ENR)	President
EGYPT	Cairo Metro	President
EGYPT	Orascom Construction	Deputy Director- Commercial
FRANCE	Société du Grand Paris	Directeur des Lignes
GERMANY	Kölner Verkehrs-Betriebe AG (Cologne)	Division Manager, Urban Rail Infrastructure
GERMANY	Kölner Verkehrs-Betriebe AG (Cologne)	CTO
INDIA	Delhi Metro Rail Corporation	Director/Electrical
IRELAND	National Transport Authority (NTA)	Head of Public Transport Investment
ITALY	IRVO	CEO Spain
IVORY COAST	African Development Bank	Principal Infrastructure PPP Railway officer
MEXICO	Metrorrey	Director of Operations
MEXICO	Metrorrey	Maintenance Director
MEXICO	SITEUR	Deputy Director of Railway Transportation Maintenance
MEXICO	SITEUR	Technical Maintenance Manager
MEXICO	Tren Maya	Gral. Bgda. Intdte. D.E.M.
MEXICO	Tren Maya	Gral. Bríg. D.E.M.
MEXICO	Tren Maya	Myr. I. I.
MEXICO	Tren Maya	Cap. 1/o. I. I.
NETHERLANDS	Nederlandse Spoorwegen (NS)	Vice director ERTMS
POLAND	Centralny Port Komunikacyjny (CPK)	Member of the Management Board
POLAND	Centralny Port Komunikacyjny (CPK)	Railway Stakeholders Deputy Director
POLAND	Centralny Port Komunikacyjny (CPK)	Attorney-at-law, Director of Procurement Department
POLAND	Centralny Port Komunikacyjny (CPK)	High-speed Rail Expert
POLAND	Centralny Port Komunikacyjny (CPK)	Deputy Office Director, Technical Director Railway Design
POLAND	Centralny Port Komunikacyjny (CPK)	Transport Analysis Team Manager
POLAND	Centralny Port Komunikacyjny (CPK)	Signalling and Rail Control Systems Design Manager
PORTUGAL	Infraestruturas de Portugal	Director of Project Investments
PORTUGAL	Infraestruturas de Portugal	Senior Project Manager
PORTUGAL	Infraestruturas de Portugal	Senior Project Manager
SENEGAL	Chemins de Fer du Sénégal	General Manager
SENEGAL	Chemins de Fer du Sénégal	Technical Director
SERBIA	Ministry of Construction, Transport and Infrastructure	Assistant Minister for Railways and Intermodal Transport
SERBIA	Ministry of Construction, Transport and Infrastructure	Advisor in Department for Railways and Intermodal Transport
SINGAPORE	Sentosa Development Corporation (SDC)	Assistant Chief Executive, Integrated Infrastructure Group
SINGAPORE	Sentosa Development Corporation (SDC)	Divisional Director, Project Development
SINGAPORE	Sentosa Development Corporation (SDC)	Deputy Director, Major Infrastructure
SINGAPORE	Sentosa Development Corporation (SDC)	Senior Assistant Director, Major Infrastructure
SINGAPORE	Sentosa Development Corporation (SDC)	Assistant Director, Service Ambassador & Transport
SINGAPORE	Sentosa Development Corporation (SDC)	Assistant Manager, Fleet Management
SWITZERLAND	Schweizerischen Bundesbahnen (SBB)	Head of Business Unit Vehicle Procurement & Fleet Management
TANZANIA	Tanzania Railway Corporation	Director of Rolling Stock
TANZANIA	Tanzania Railway Corporation	Director of Electrification, Signalling & Telecommunications
THAILAND	Asia Era One	Head of Planning & Performance
THAILAND	Asia Era One	Managing Director
TURKEY	TCDD TAŞIMACILIK	Deputy Head of Rolling Stock Maintenance Division
TURKEY	TÜRASAS Turkish Railway Vehicles Industry Inc.	Head of Locomotive & Freight Wagon Engineering Dept.
U.S.A.	AMTRAK	President
UNITED KINGDOM	HS2	Supply Chain Manager
UNITED KINGDOM	Network Rail	Director, Industry Partnership for Digital Railway

International representatives give their views on the Spanish railway industry



► Sonia Mamic

Advisor in department for railways intermodal transport – Ministry of Construction, Transport and Infrastructure of Republic

SERBIA

"We are very pleased to be here, and we believe that our meetings have been very productive. We used this opportunity, among all, to present the Serbian Railway Sector Modernization Project which is funded by the World Bank and French Development Agency and implemented within the Ministry of Construction, Transport and Infrastructure.

We presented subprojects and activities that are supposed to be tendered under this project in the next period and we hope to see Spanish companies to express their interests in this project.

We have learned a lot about Spanish companies, and we believe that in the railway sector, in particular, Spanish companies have great knowledge and experience that we hope to apply in Serbia.

The Spanish railway industry, being one of the most advanced in the world, offers its services throughout the value chain, which makes it more solid and straightforward to develop a railway project with them."



► General Oscar David Lozano Águila

Tren Maya

MEXICO

"From the first contact through the Technical Committees organized by ALAMYS in Cádiz, Spain, we were able to learn about the Spanish and European railway system and through the exchange of experiences of relevant actors of similar systems in South America, the USA, Saudi Arabia and other countries, we were able to dimension the impact and importance of the Tren

Maya Project not only in Mexico but also in the world.

From that first approach I had the opportunity to see the operation and administration of the Spanish railway system.

This ambitious challenge not only requires the utmost dedication from each of us who are part of the Tren Maya, but also reflects the confidence we have in our abilities and collective capacity to reach new levels of excellence.

This gives us the certainty that we are taking the right steps to make passenger rail transportation in Mexico a success, thanks to the collaboration we are bringing together with Mexico's construction companies and government agencies.

Every action we take on a daily basis becomes a testament to our commitment and determination to achieve our goal of putting the Tren Maya into operation."

► Fatih Kaygisiz

Deputy Head of Rolling Stock Maintenance Department · TCDD Taşımacılık A.

TURKEY

"I am very grateful to be at this convention, it's the third one I've attended. And it's great because Mafex is looking for ways to connect with amazing Spanish companies that we would have never known about if it weren't for this fair. We have already started working with several of them, and because we are both Mediterranean, we can understand each other better, and now we can grow with the relationships we are building.

Among them, leading companies in ATMS, TCMS, hardware, software, and H-back systems. We are also getting to know new companies in this edition that will surely be added to our list of Spanish suppliers."



► Lam Yue Kwai

Divisional Director, Project Development - Sentosa Development Corporation

SINGAPORE

"I am very grateful to be at this convention, it's the third one I've attended. And it's great because Mafex is looking for ways to connect with amazing Spanish companies that we would have never known about if it weren't for this fair. We have already started working with several of them, and because we are both Mediterranean, we can understand each other better, and now we can grow with the relationships we are building. Among them, leading companies in ATMS, TCMS, hardware, software, and H-back systems. We are also getting to know new companies in this edition that will surely be added to our list of Spanish suppliers."

THE EUROPEAN ECONOMIC RECOVERY PLAN INVOLVES SUSTAINABLE AND DIGITAL MOBILITY

The railway, the cornerstone of Europe's sustainable recovery



The situation experienced during the pandemic and its consequences at the social, industrial, and economic level, has influenced the need to find solutions that allow the member countries of the European Union to move faster than expected towards an economic reactivation. Brussels marked its roadmap in the plans to be developed to achieve an ecological, digital, and sustainable transition that would already mark in the year 2030 a decrease in the emission of polluting particles into the atmosphere, and that it would be in the horizon 2050 when neutrality could be reached.

To achieve this new model of fairer, more resilient, and sustainable economy, a strong investment is required. On 21st July 2020, the European Council approved the "Next-GenerationEU" programme, which represents an amount of 750 billion euros for the period 2021-2026.

The implementation of this plan has required the implementation of two financial instruments. On the one hand, the European Recovery and Resilience Facility (RRF), aimed at supporting member countries in their public investments and reforms, with 385 billion euros in the form of loans and the rest in the form of grants. For the period 2021-2026 Spain will receive 140

billion euros, of which 69,513 million will be in the form of grants.

And, on the other hand, the REACT-EU or "Recovery Assistance for Cohesion and the Territories of Europe" initiative. In addition to these two initiatives, NextGenerationEU will provide funding for other programmes such as "InvestEU; Rural Development or the Just Transition Fund."

The transport, protagonist of European aid

Transport is one of the elements on which the European Union places more emphasis in this 2021-2027 period, with the approval of the Connecting Europe plan, which has as its general objective to build, develop, modernise and complete trans-European networks, contributing to the smart, sustainable and inclusive growth of countries, as well as improving territorial, social and economic cohesion.

At present, the Multiannual Financial Framework (MFF) has 34,250 million euros, of which 25,807 million are destined to subsidise the projects proposed by the States for the achievement of a transport network more efficient and less aggressive with the environment. " Some

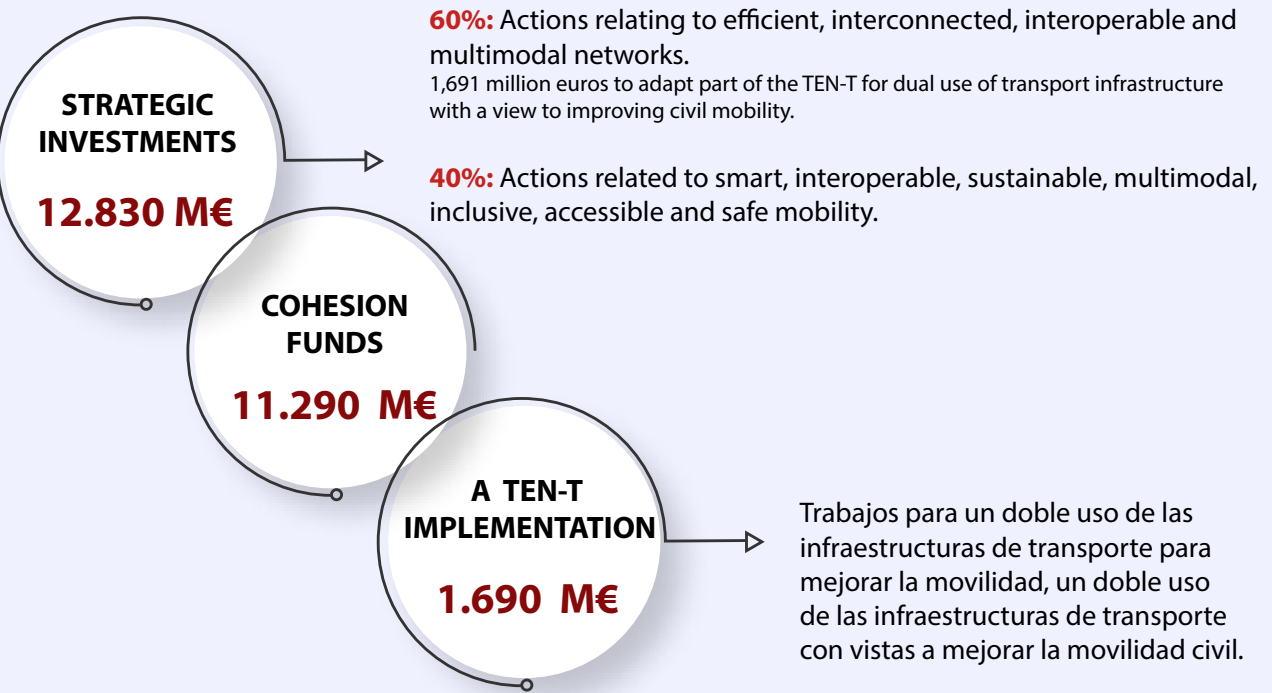
THE PANDEMIC HAS MARKED A BEFORE AND AFTER IN GLOBAL SOCIETY IN GENERAL, AND IN EUROPE IN PARTICULAR, ACCELERATING DECISION-MAKING TO SHORTEN THE TIMES IN THE DESIGN OF A NEW ECONOMIC MODEL THAT RESPECTS THE ENVIRONMENT AND DECARBONISATION.

THE PROCESS REPRESENTS A HISTORIC INVESTMENT FOR THE EUROPEAN UNION WHICH, THROUGH THE "NEXTGENERATIONEU" PROGRAMME, SEEKS A SUSTAINABLE RECOVERY FOR SOCIETY AND JOB CREATION.

A LARGE PART OF THESE FUNDS WILL BE ALLOCATED TO TRANSPORT, ESPECIALLY TO THE RAILWAY, FOR BOTH PASSENGER AND FREIGHT SERVICES, CONSIDERED A PRIORITY IN THE SEARCH TO ACHIEVE CLIMATE NEUTRALITY BY 2050.

The European economic recovery plan involves sustainable and digital mobility

CONNECTING EUROPE FACILITY 2021-2027: INVESTMENTS IN TRANSPORT



Source: European Commission.

5.84 billion for energy; and 2.6 billion for digitalisation.

The allocation for transport includes 12.83 billion euros to support strategic investments, and 60 per cent of it is destined to actions related to efficient, interconnected, interoperable and multimodal networks. A budget of 1.56 billion euros has been incorporated here

to complete the main cross-border railway links.

The remaining 40 per cent is allocated to actions related to smart, interoperable, sustainable, multimodal, inclusive, accessible, and safe mobility. There are also a further 11.29 billion euros transferred from the Cohesion Fund and 1.69 billion euros to adapt part of the Trans-Eu-

ropean Transport Network (TEN-T) to the dual use of infrastructure to improve civil and military mobility.

Studies carried out by Brussels have revealed that the railway is underused as a means of passenger transport, and it amounts to around 18 per cent of the traffic created by the transport of goods across the roads in the countries where it has



... LA SEGURIDAD ES EL FACTOR DECISIVO EN LA ELABORACIÓN Y EVALUACIÓN DE TODA IDEA DE DESARROLLO SOSTENIBLE
... SECURITY IS DECISIVE FACTOR IN THE ELABORATION AND EVALUATION OF ANY IDEA OF SUSTAINABLE DEVELOPMENT

i + de + a

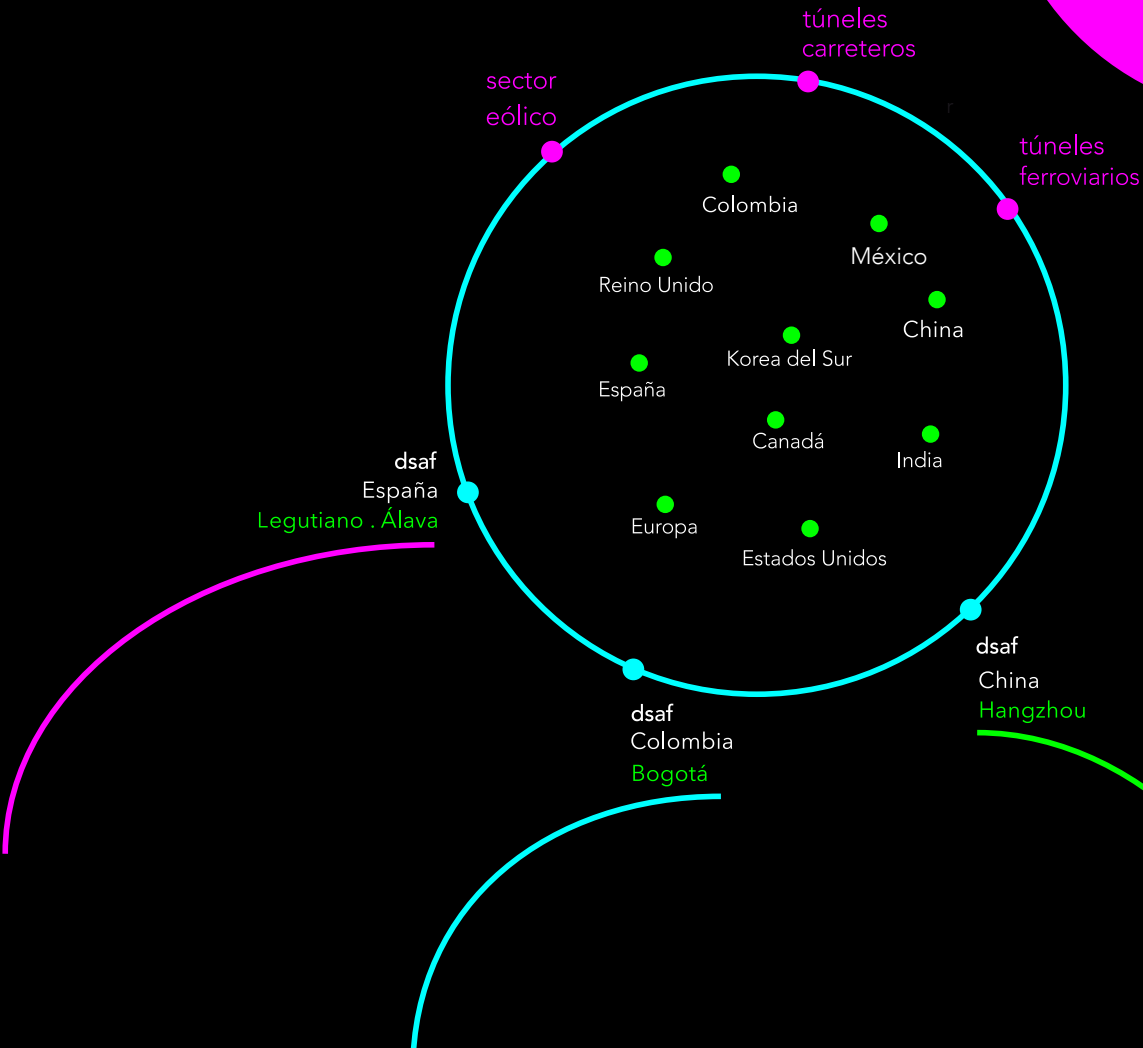
El conocimiento acumulado a lo largo de dieciocho años de actividad empresarial en proyectos de seguridad para el movimiento de personas en situaciones de riesgo, quedan recogidos en el acrónimo IDEA: Investigación + Desarrollo + Aplicación de productos y sistemas de seguridad para Torres Eólicas y Nacelles, Túneles Carreteros y Túneles Ferroviarios.

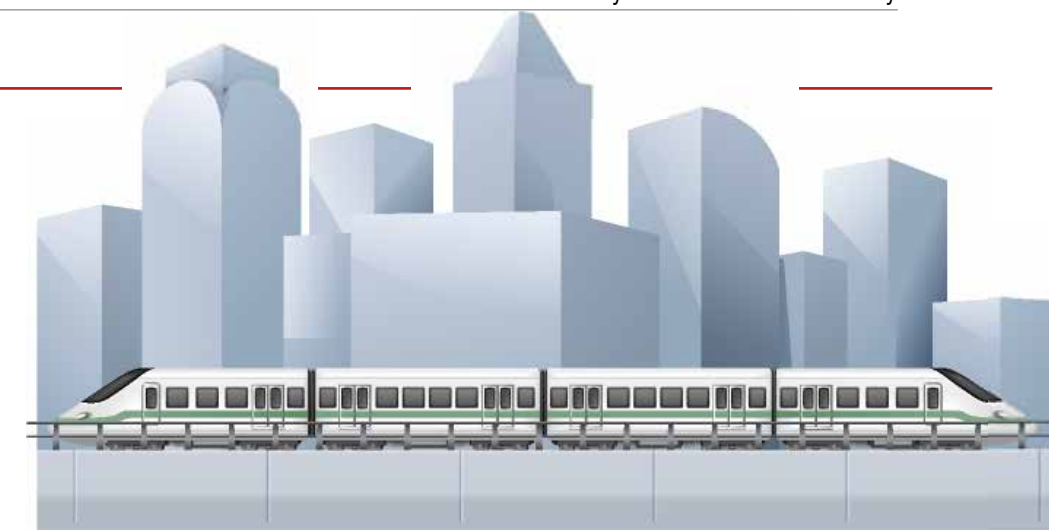
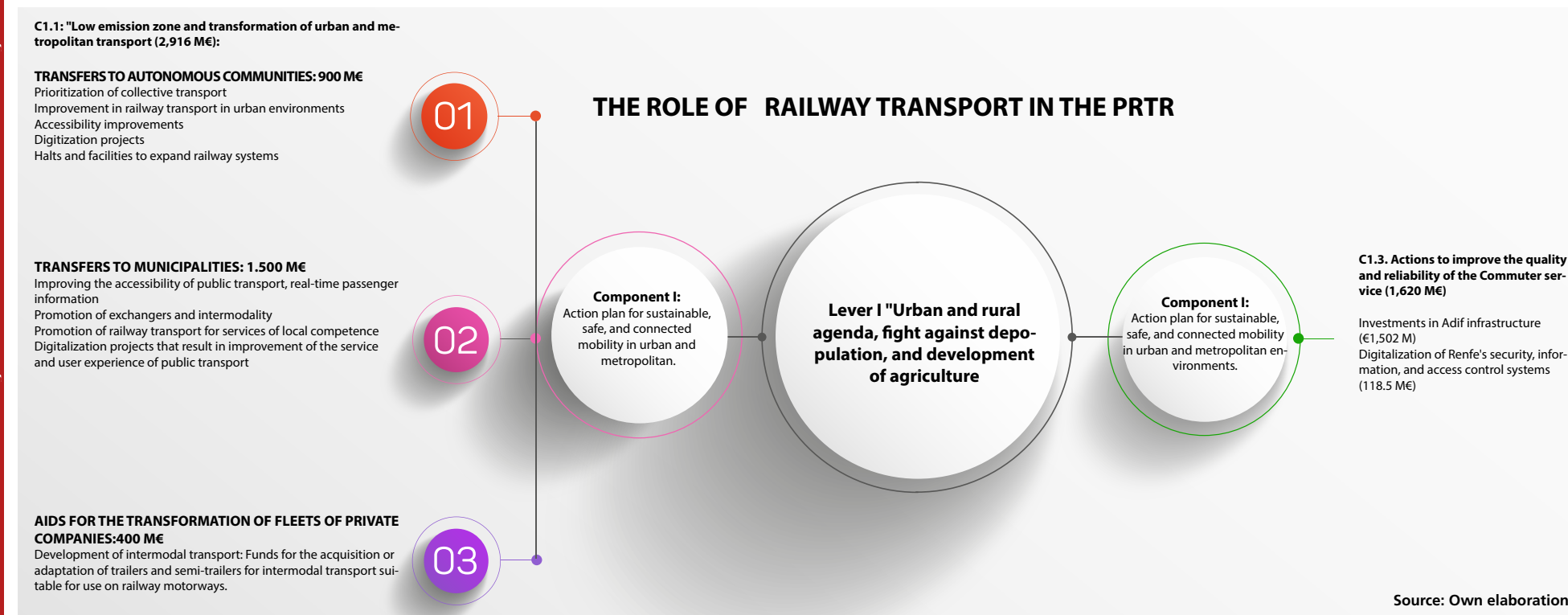
The knowledge accumulated over fifteen years of business activity in security projects in the movement of people in risk situations has made it possible for dsaf developments to be included in the acronym IDEA: Research + Development + Application of security products and systems for Wind Towers, Road Tunnels and Railway Tunnels.



DINÁMICAS DE SEGURIDAD. S.L.

www.dsaf.es





for action, since it is considered that about 70 per cent of the population of the European Union resides in urban centres, an amount that is expected to increase in the coming years.

And in this regard, Brussels has considered nine areas of action: strengthening the role of cities and their areas of influence in the TEN-T; strengthening mobility ma-

nagement plans; monitoring the progress of plans through urban mobility indicators; increasing the attractiveness of public transport through digitalisation and multi-modality; developing the potential of active mobility; urban logistics and last-mile delivery of zero emissions; digitalisation, innovation and new mobility services; moving towards climate-neutral cities; awareness-raising, and skills development.

Europe is moving towards a new model of economic activity that is based on three main pillars: sustainability, digitalisation, and connectivity. And transport will be the sector receiving the highest investment for the green transformation

the greatest impact. For example, in the Spanish case, it only reaches 4 per cent. This is why given the situation of the search for zero emission in 2050, the mobility through the trans-European railway networks,

both for people and goods, is one of the priority objectives of the development of the Connecting Europe programme.

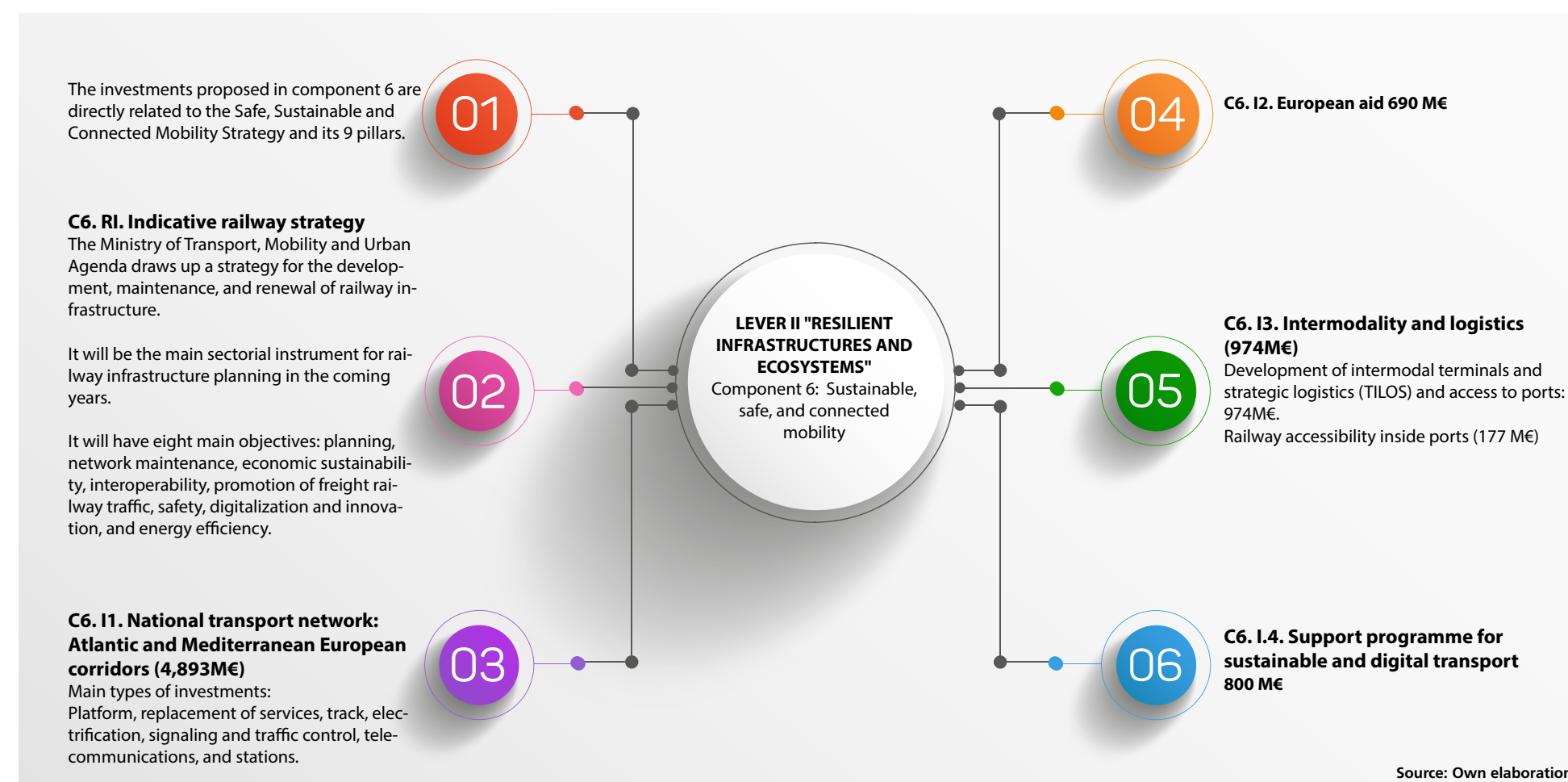
Transport seeks a sustainable and smart mobility

One of the main objectives of European investment focuses on improving the mobility of citizens of the member countries, their safety, lower emission of polluting materials into the environment, and greater and better efficiency. To this end, the ITS Directive (Intelligent Transport Systems) has been updated, with a series of changes included in the "European Smart and Sustainable Mobility Strategy", aimed at achieving the 2030 and 2050 objectives of zero emissions and automated and intermodal mobility.

In this context, the railway remains at the heart of policies to make mobility in the EU more sustainable, and for it to be more used not only within countries, but also through cross-border and long-distance connections. There is a clear objective with all these initiatives, that of

doubling railway traffic in 2030 and tripling it in 2050, both for the use of passengers and for the transport of goods.

It also emphasises the new situation presented by urban mobility, which requires a new framework



The railway, protagonist of the transport investments of the Spanish recovery plan



In the case of Spain, "The Recovery, Transformation and Resilience Plan" (PRTR), includes the series of investments and structural reforms that must be carried out to make a greener, more digital, cohesive and egalitarian country, as marked by the 2030 Agenda approved by the Government, and that places mobility as one of the fields with a greater budgetary allocation with investments of about 13,203 million euros, which represent 19 per cent of the 70 billion euros of non-reimbursable European aid granted for economic recovery and job creation. The Plan also includes the

AT MAFEX WE ARE COMMITTED TO THE RAILWAY AS THE BACKBONE OF THE SUSTAINABLE AND CONNECTED MOBILITY OF THE FUTURE. BUT OUR COMMITMENT AS AN INDUSTRY GOES FURTHER, AND WE ARE AWARE OF THE BRAND AND COUNTRY IMAGE THAT WE GENERATE, IT IS IMPORTANT TO REMEMBER THAT WE HAVE A SECTOR WITH A GREAT INTERNATIONAL TRAJECTORY. OUR BUSINESS FABRIC IS WELL ESTABLISHED IN THE FIVE CONTINENTS AND ENJOYS AN ENORMOUS AMOUNT OF TRUST DUE TO ITS NUMEROUS TECHNOLOGICAL DEVELOPMENTS, ITS KNOW-HOW AND INVOLVEMENT IN EACH PROJECT.

transfers to the Autonomous Communities, as well as the calls for aid to companies and municipalities, and the programmes managed by the Ministry of Ecological Transition and Demographic Challenge. The crash plan for sustainable, safe, and connected mobility has a budget of 5,863 million euros, and for urban and metropolitan environments the figure exceeds 1.7 billion euros. In addition, this ministry maintains an

The railway takes 85% of the investments destined to the new model of decarbonised, digital, connected and more sustainable transport

endowment of about 2 billion euros for mobility through electric energy and hydrogen batteries.

On the other hand, the Ministry of Transport, Mobility and Urban Agenda (MITMA) manages 11,303 million euros within the Recovery, Transformation and Resilience Plan (PRTR) to decarbonise and digitalise mobility and to promote the sustainable transformation of transport.

Of this figure, the MITMA will directly invest 7,603 million euros, among other operations, in completing and improving the railway infrastructure, in enhancing the reliability and punctuality of commuter trains, and promoting the transport of goods by train.

The transport of goods and passengers, through the different means of transport, accounts for 29 per cent of the CO2 emissions generated, more than industry (20 per cent) and electricity production (13 per cent), which indicates the need to accelerate the sustainable transformation of the sector and prioritise the use of the railway over the road and public transport over private.

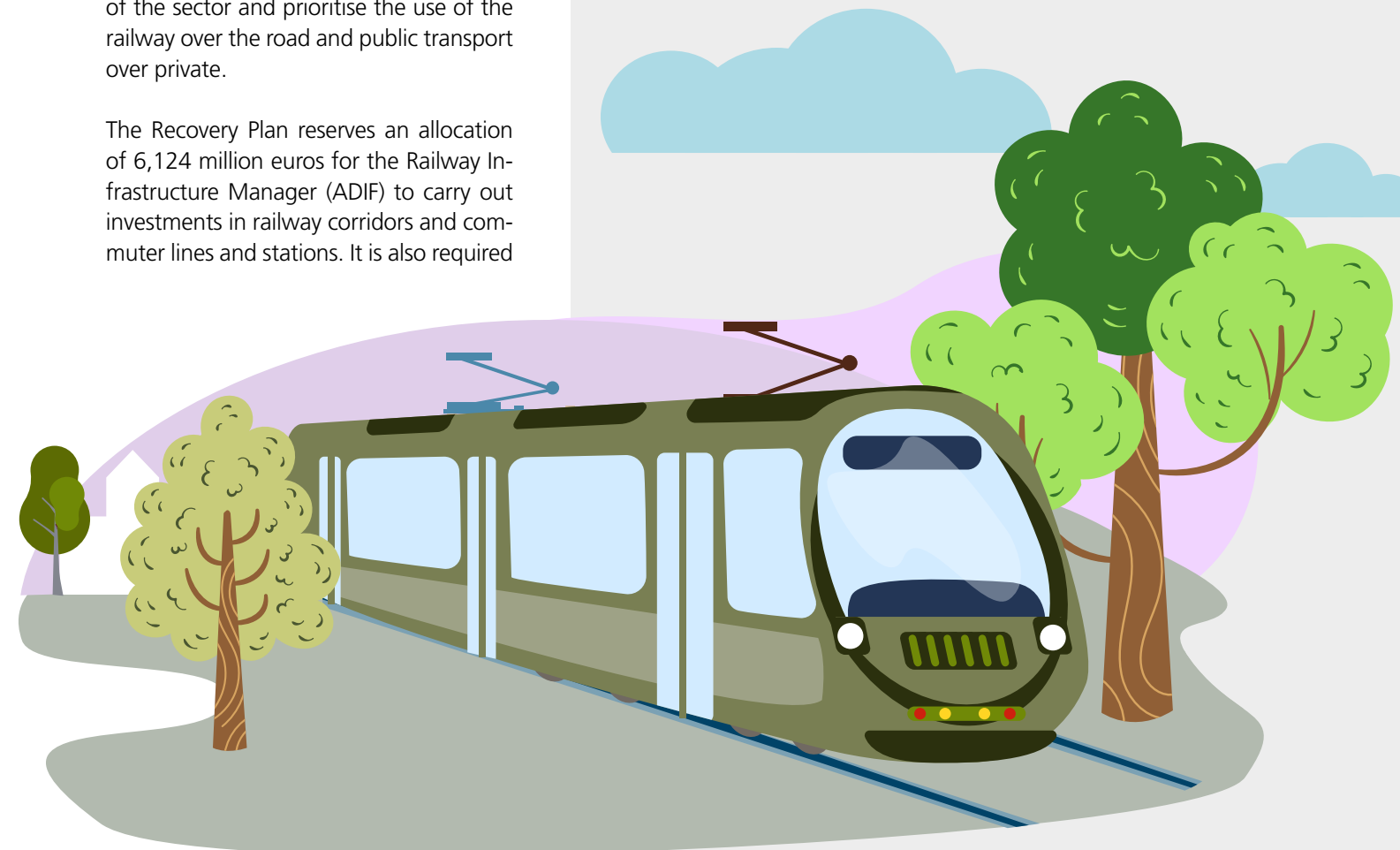
The Recovery Plan reserves an allocation of 6,124 million euros for the Railway Infrastructure Manager (ADIF) to carry out investments in railway corridors and commuter lines and stations. It is also required

Low-emission public transport needs more funding

The forecasts of the European Union and the World Bank are that by 2045, 50 per cent of the population will live in cities, and in the case of Spain, it is pointed out that already in 2030 it will be 40 per cent that will reside in localities of more than 50,000 inhabitants. For this reason, it is necessary to develop an intense policy of decarbonisation of the economy and an environmental improvement with the transformation of the public transport network in cities and metropolitan areas.

Therefore, the Spanish Government forecasts that a good part of the European funds allocated by Europe will be destined to help the Autonomous Communities and local entities to become low emission zones (LEZs).

Precisely, component 1 of the first lever of the PRTR, focuses on the transformation of urban environments, and to the objectives of decarbonisation and improvement of air quality in cities, aspects which entail changing the current transport model. Measures to facilitate less polluting travel, with a greater penetration of electronic mobility and other alternative energies to those derived from fossil waste.



To achieve low-emission urban areas and transform transport, the PRTR includes an investment of € 2,916 million

to strengthen railway-port connections and the development of inter-modal logistics terminals.

The ultimate goal is for railway corridors and intermodality to create some 130,000 jobs by 2030, contributing more than 10 billion euros to GDP.

Public and private initiative in investments

Improving the quality of life in cities with the implementation of Low Emission Zones (LEZ) in Spanish towns with more than 50,000 inhabitants, through initiatives and investments in transport infrastructures, mainly railways, requires the participation in them of all Spanish administrations, as well as the private initiative. It is also necessary to employ the necessary mechanisms to obtain the funds required for this transformation.

Its objective is to design a reliable public transport system that is attractive to citizens, accessible, safe, and affordable. To achieve this, the basis rests in the incorporation of new concepts presented by technological development, such as smart mobility, automation and the incorporation of propellers powered by other alternative energies to gasoline less harmful to the environment.

The component presented in the PRTR has a contribution of 72.5 per cent to the ecological transition and 2 per cent to the digitalisation of transport, and a total allocation of 9,336 million euros, of which 6,523 correspond to the Recovery and Resilience

Facility and is expected to last until 2026.

But the most important thing in this urban aspect is the entry into force of the "Law on Climate Change and Energy Transition", which forces municipalities with a population of more than 50,000 inhabitants, to establish a Low Emissions Zone (LEZ), that is, to adopt the appropriate measures, with restrictions in access, circulation, and vehicles parking..., in order to improve air quality and mitigate greenhouse gas emissions.

Since its enactment, the Government has been assigning aid to the different municipalities that present their development plans. For example, 500 million euros have recently been released to help 120 municipalities.

The amount of financial aid included in the Recovery and Resilience Facility to support to the Autonomous Communities, municipalities and both public and private transport service companies, consists of 2,916 million euros. Its objective is to achieve by the end of 2025, for more than two hundred urban areas to have benefited from these aids and for CO2 emissions to have been reduced.

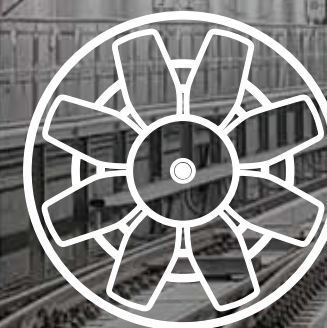
The Autonomous Communities have an endowment of 900 million euros of which according to the "III Report on the Implementation of the Recovery Plan", more than 15 per cent of these have already been executed. As for the municipalities, the expenditure percentage from the allocation of the 1,500 million is higher than anticipated. Here the actions in railway transport are considered key, as well as in the improvement of fleets. And on this last aspect, the PRTR provides 400 million euros to replace current vehicles powered by fossil energies, by less polluting ones that incorporate alternative, electric fuels, hydrogen cell, GLS, biofuels ...



Zitrón

SOLUTIONS FOR TUNNEL VENTILATION

Innovation and technology for underground ventilation systems



High efficiency designs



Operation and control



Turnkey solutions

A plan with 4 axes, 10 lever policies and 30 components

European funds are being distributed in Spain through four transversal axes: ecological transition, digital transformation, social and territorial cohesion, and gender equality, which have ten lever policies granting great ability to promote the process of economic and social transformation, increase productivity and improve the Spanish situation in the future.

The ten levers embody around thirty components that articulate the reform projects. Most of them have a horizontal character for the economy as a whole, but there are some of them that are specific and that include direct actions in transport in general, and in the railway in particular, such as those reflected in component 1, of the three that the first lever has, and component 6, a

THE TRANSPORT, ONE OF THE PRIORITY AXES FOR THE ECONOMIC RE-ACTIVATION IN SPAIN, PLACES THE RAILWAY AS THE MODE OF GREATEST GROWTH.

specific one, included in the second lever.

The first lever - that focuses on the "Urban and rural agenda, the fight against depopulation and the development of agriculture" develops in its first component called "Shock plan for sustainable and connected mobility in urban and metropolitan environments" - a series of measures aimed at promoting sustainable public transport and railway, focusing with regards to the latter, on promoting the commuter network with a specific allocation of 1.62 billion euros.

As for the second lever, "Resilient infrastructures and ecosystems", a direct component 6 on "sustainable, safe and connected mobility" is included. It focuses on the strategy designed to achieve decarbonisation, the development of railway corridors, a programme to support the achievement of emission-free and digital transport, as well as to improve the efficiency of the transport and freight distribution system.

"Component 6 has a budget of 6,667 million euros to achieve the decarbonisation of transport and its digitalisation"

The development of the Recovery, Transformation and Resilience Plan under these levers and specific components will allow the construction in the medium term of a new model of transport that is safer, more sustainable, connected, and digital, where the railway takes advantage of the opportunity to become the

The challenge is no other than accelerating the modal shift in transport to achieve a new emission-free concept that takes advantage of all technological developments.

4 transversal pillars

10 policy levers

30 components

Source: Own elaboration.

RECOVERY, TRANSFORMATION AND RESILIENCE PLAN (PRTR)

true protagonist of change in the European horizon 2050.

What should be the strategy to accelerate this modal shift shaped by component 6? To develop the initiatives highlighted by the so-called "Safe, Sustainable and Connected Mobility Strategy 2030", a document that defines nine strategic axes, which make up more than 40 lines of actions with more than 150 concrete measures, for the next ten years.

The objective is no other than to decarbonise the economy and respond to climate change, the emergence of new technologies and the challenges created by the increasing concentration of population in large cities. For

this reason, the special attention to the strengthening of the railway stands out, which has a "specific strategy".

"The Indicative Railway Strategy", is an instrument to plan the development, maintenance, and renewal in the coming years, aimed at promoting the railway transport of passengers and freight.

The challenge is therefore to achieve a new modal split where the balance is tilted towards more sustainable ways to reduce emissions associated with transport. To improve connections with logistics centres and to complete European corridors in Spain, the Atlantic and the Mediterranean.

IN THIS CONTEXT, MAFEX RESTORED THE ACTIVE ROLE OF THE RAILWAY INDUSTRY (WHICH REPRESENTS MORE THAN 8% OF INDUSTRIAL GDP) IN THE COUNTRY'S ECONOMIC RECOVERY, AND THE NEED TO INVEST IN SUSTAINABLE AND EFFICIENT PUBLIC TRANSPORT INFRASTRUCTURES. PROOF OF THIS WAS THE PARTICIPATION IN THE DRAFTING OF THE 21 STRATEGIC INITIATIVES THAT WILL GOVERN THE SPANISH PLAN IN CONSTANT DIALOGUE WITH THE RELEVANT MINISTRIES AND AGENCIES.



The experience of an operator for the benefit of your mobility projects

metrotenerife

Consultancy services in Operation and Maintenance. Experience on 4 continents

More info



The ticketing system that works via a smartphone without need of physical infrastructure

Advanced Driver Assistance System designed to monitor operations and to avoid accidents due to over speeding

SIMOVE FOR RAILWAYS

REMOVABLE INSULATING CHAMBER

Designed and patented by:

metrotenerife



Chambered system designed to improve the maintenance of the railway track

Commercialised by:

ArcelorMittal

rails.specialsections@arcelormittal.com

Technical data

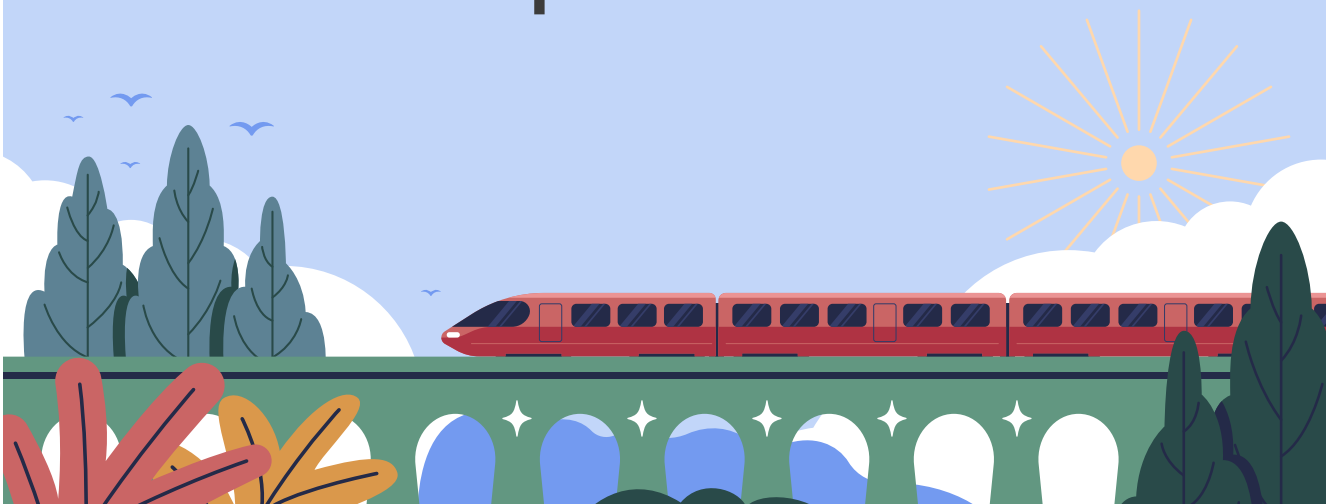


www.metrotenerife.com

contact@metrotenerife.com

Commuter trains (Cercanías), at the core of sustainable urban transport

ONE OF THE MAIN PRIORITIES THAT ARE PRESENTED AS AN OBJECTIVE OF THE PRTR AT THE URBAN AND METROPOLITAN LEVEL, IS THE IMPROVEMENT OF THE COMMUTER NETWORK IN THE COMMUNITIES WHERE THIS TYPE OF RAILWAY CONNECTION OPERATES. THE COMMITMENT IS CLEAR, TO MAXIMISE THE USE OF THIS PUBLIC TRANSPORT.



The contribution of the railway to sustainable recovery

The commuter network is called to play a fundamental role in the mobility of citizens in the coming years, not only because of the more than 400 million passengers that it usually carries on an annual basis, but because it presents a zero-emission card, and total electrification.

The planned actions will focus on five priority lines. Improving punctuality, reliability, and real-time information systems; in addition, investment will be made to expand the network and make its infrastructures accessible implementing the latest technologies.

An investment of 1.5 billion euros for improvement works in the network

Nueve Comunidades Autónomas Nine Autonomous Communities offer this service, Andalusia, Asturias, the Balearic Islands (Mallorca), Cantabria, Catalonia, Valencian Community, Galicia, Madrid and the Basque Country, with twelve hubs. According to the railway sector report pre-

pared by the National Commission of Markets and Competition (CNMC), a total of 372.9 million passengers were carried in 2022. This figure represents 84.75% of the use of the entire railway offer as a passenger transport.

The Plan foresees an investment of 1.5 billion euros for ADIF - the rai-

lway infrastructure management entity - to undertake different actions to improve lines and stations including rehabilitation and expansion works, and to build new stations featuring more accessible facilities. The III PRTR Performance Report issued last February, indicates that 1 billion euros of those provided for have already been executed.

► PASSENGERS CARRIED BY COMMUTER RAILWAYS IN 2022

COMMUNITY/PROVINCE	NUMBER OF PASSENGERS (millions)
Madrid	205.069.772
Barcelona	100.483.319
Valencia	14.602.454
Málaga	11.267.000
Sevilla	6.522.000
San Sebastián	6.333.500
Asturias	5.100.000
Cantabria	3.400.000
Resto	20.147.420
TOTAL	372.925.465

Source: CNMC e INE



SIEMENS MOBILITY

Moving beyond – Soluciones de transporte impulsadas por nuestra pasión por la movilidad.

El futuro de la movilidad en nuestro mundo globalmente interconectado exige soluciones de transporte fluidas, sostenibles, fiables y seguras. Aprovechamos las ventajas de la digitalización, la excelencia en ingeniería y nuestro espíritu emprendedor para superar este reto. Con la confianza de nuestros socios somos pioneros en el transporte, trasladando a las personas de manera sostenible y fluida desde la primera hasta la última milla. Y siempre vamos más allá para ayudar a los operadores de transporte de todo el mundo a superar sus expectativas.

[siemens.es/mobility](https://www.siemens.es/mobility)

SIEMENS

Improving intermodality to grow in the sustainable freight transport

Increasing the freight railway transport is an objective that the European Union has in light of more than 80 per cent of this service being carried out by road. This means a greater emission of CO₂ into the atmosphere, and it goes against the plan to reach a neutral emission in 2050. Brussels has therefore advised the Member States to take appropriate measures to improve the situation of the freight railway transport.

Decarbonisation in freight transport is one of the greatest challenges that Europe plans to tackle in the short and medium term, and that is where the railway takes centre stage given its better performance when it comes to reducing the impact on the environment. "Taking trucks off the road" is presented, almost, as an obligation. It should be borne

THE INVESTMENT PLANS ADDRESS THE OPTIMISATION OF THE FREIGHT RAILWAY TRANSPORT, WITH THE NECESSARY IMPROVEMENTS TO CARRY OUT A MORE EFFICIENT AND SUSTAINABLE INTERMODALITY.

THE GOVERNMENT HAS LAUNCHED THE "MERCANCIAS 30" INITIATIVE IN ORDER TO PROMOTE FREIGHT RAILWAY TRANSPORT AS THE BACKBONE OF THE LOGISTICS CHAINS.

in mind that the European average of the freight train compared to the road is 18 percent, while in the case of Spain it reaches more than 90 per cent.

For this reason, axis 6 of the "Safe, Sustainable and Connected Mobility Strategy" includes a series of actions to support the renovation for better loading docks and the construction of those deemed necessary, improvement of intermodal terminals, whether in the train-road connec-

tion, or in the connection of the train with port facilities. Therefore, there are three major areas of work planned that are reflected in the chapter dedicated to "Intermodality and logistics", which summarises it: the development of intermodal and logistics terminals; the improvement of external railway access to ports and the development of the "Green Ports" Plan.

The new situation of intermodal strategy of freight transport has led

to a series of works being carried out in the improvements of the infrastructures of four railway logistics nodes considered priorities, both at the level of national connections, and of their participation in European structuring through the two corridors of the Connecting Europe programme of the EU, of which Spain, the Atlantic and the Mediterranean are part. These four terminals, which this year are in the completion of some of their works, and which are expected to be operational in the next two or three years, and that allow operating with mixed gauge tracks and for convoys of up to 750 metres in length, are those located in the Madrid town of Vicálvaro, in which Adif plans to invest around 300 million euros; Fuente de San Luis (Valencia) with an investment of 240 million euros; La Llagostera (Barcelona), which has a budget of 90 million euros; and Jódiz (Álava), with 38 million euros. The financing is supported by the NexGenerationUE funds, and the Recovery, Transformation and Resilience Facility plans to invest a total of 974.5 million euros in these terminals and in the other actions in this section. On the other hand, the Ministry of Transport, Mobility and Urban Agenda provides 217 million for works in these terminals.

There are also going to be improvements made in other smaller terminals for their adaptation, such as those in Can Tunis (Barcelona); Orduña (Biscay); Lezo (Guipúzcoa); Muriedas (Santander) and Escombreras (Murcia), at a cost of 45 million euros. And with regards to the external and internal access to the port facilities, there is an investment forecast of 407 million euros, with a special focus on the construction of the railway access to the sidings of the ports of Coruña and Castellón. Public-private collaboration is considered in all cases, offering freight transport companies the possibility of using the different terminals, with an investment that will be carried out through different service tenders.

But it is not only important in this infrastructure improvement action to encourage the future development of freight transport by railway, but in order to advance on the path of achieving its greater sustainability, it must be implemented with the application of the most technologically advanced developments.

This aspect is reflected in the "Support Programme for Sustainable and Digital Transport" included in com-

ponent 6 of the PRTR, which has an allocation of 800 million euros, where it marks six lines of action, three of which refer mainly to the railway and its mission to increase the weight of its percentage in the supply chain, such as interoperability in freight railway transport; the promotion of intermodal transport; the modernisation of the freight railway equipment, and a fourth one to the digitalisation of transport.

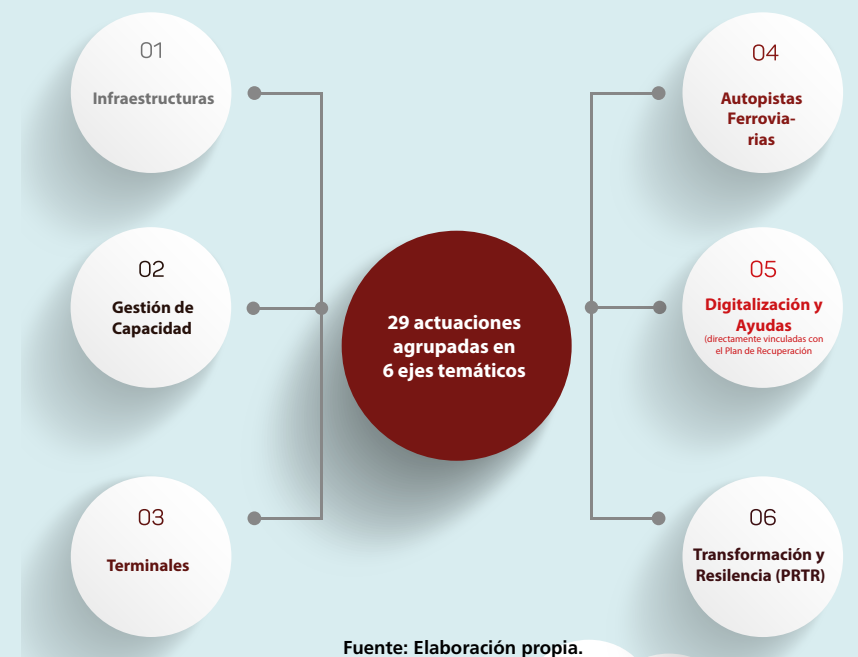
This financial support establishes co-financing percentages ranging from 30 to 50 per cent, which are intended to attract private investment. It is open to public and private companies, although the former ones are only eligible for this line of aid under a competitive market regime.

The aid in competitive tendering has an endowment of 460 million euros; the simple tendering, which is based on incentives for saving external costs generated by railway and maritime transport compared to road transport, has EUR 120 million for subsidies. And for the digitalisation projects of transport services at the regional and local level, the Autonomous Communities have an amount of 220 million euros, of which 110 are intended to encourage the actions of companies and the self-employed; and the other 110 are aimed for the digitalisation of regional and provincial administrations.

The Autonomous Communities have a subsidy of 220 million euros for the digitalisation of both passenger and freight services at the regional and local level.

The railway, protagonist of a less polluting network intermodality

The interoperability and intermodality of the network are two of the projects to be promoted, especially with a view to the operability of the international connections with Europe



through the Atlantic and Mediterranean Corridors. A situation in which the implementation of ERTMS systems (Port Traffic Management) is important, allowing the elimination of interoperability barriers that make the whole network more efficient and sustainable. There is a budget of 45 million euros for that purpose.

In that less polluting network, it is essential to transfer freight transport from the road to the railway, one of the objectives of reducing CO2 release into the atmosphere and achieving a reduction of more than 50 per cent in 2030, reaching practically zero in 2050. The railway is predestined to be one of the main protagonists, even the main one, in the modal change of transport, for that purpose there is a budget of 195 million euros destined to invest in the construction of loading docks, improving the existing ones, as well as acting in the modal terminals and in the connections in the access to the ports.

And within this drive to improve the climate change situation, there is also an amount of 125 million euros to aid the improvement and modernisation of the rolling stock fleet of freight railway transport. It is necessary to include the necessary changes for the operability on railway motorways; as well as the development of new alternative fuels to the solid ones, such as liquefied gas, electricity or hydrogen, among others.

There is one more support that has been defined as "eco incentive" and that acts on supply and demand, in such a way that the services with the greatest impact on environmental costs are rewarded. In the case of the railway, these direct subsidies will be allocated based on the supply and will therefore go to

the companies that provide market transport services.

Firm commitment by the government to the "Mercancías 30" initiative

The Ministry of Transport, Mobility and Urban Agenda (MITMA) progressed in its commitment to the Safe, Sustainable and Connected Mobility Strategy 2030 with the launch, at the end of 2021, of the "Mercancías 30", initiative, an ambitious plan with which it is intended to promote freight railway transport as the backbone of multimodal logistics chains, and the achievement of the objectives of decarbonisation and sustainability in transport.

This action is also supported by the guidelines of the European Union, which seeks to achieve a more competitive and sustainable transport system, transferring 30 per cent of road freight transport to the railway and river navigation by 2030, to reach more than 50 per cent in 2050. According to data from the European Commission, currently the average for freight railway transport barely reaches 17-18 per cent of the total; while in the case of Spain this percentage is well below that average, with 4-6 percent, the rest dominated by the road.

It seeks to offer an efficient and competitive railway network involving all agents linked to the freight transport; to improve management ability by eliminating bottlenecks, encouraging the operability of longer trains; to support with economic and financial resources the evolutionary trend towards socio-environmental benefits; to increase the facilities of railway terminals, connections to the ports... with the participation of the private initiative in their management; to promote

multimodality and interoperability through the launch of, for example, the Railway Motorways; to promote research associated with logistics chains, especially with digitalisation processes; and, to generate certainty in private companies so that they can jointly undertake investments with the public initiative.

The scope of the "Mercancías 30" initiative consists of the railway network on which freight traffic currently circulates or may circulate in the future, especially in the "General Interest Railway Network" (RFIG) and privately owned loading docks.

The objective, according to MITMA, is, therefore, to increase the modal share of freight railway transport, and for this purpose a series of actions and measures to be carried out in the short and medium term are identified, and to be implemented, in some cases before 2030. For this purpose, 29 actions have been grouped into 6 thematic axes: Infrastructures, Capability Management, Terminals, Railway Motorways, Digitalisation and Aid (directly linked to the Recovery, Transformation and Resilience Plan (PRTR).

For this purpose, MITMA plans an investment of around 8,442.3 million euros, which is shared between infrastructures, 5,068 million; 200,000 euros for capability management; a budget of 2,070 million for terminals; 3,843.3 million for railway motorways; 16.9 million for digitalisation; and 903 million for aid.

The Atlantic and Mediterranean corridors, key to sustainable recovery

The development of the Trans-European Transport Network (TEN-T), with the policy of "Connecting Europe", considers nine key Corridors

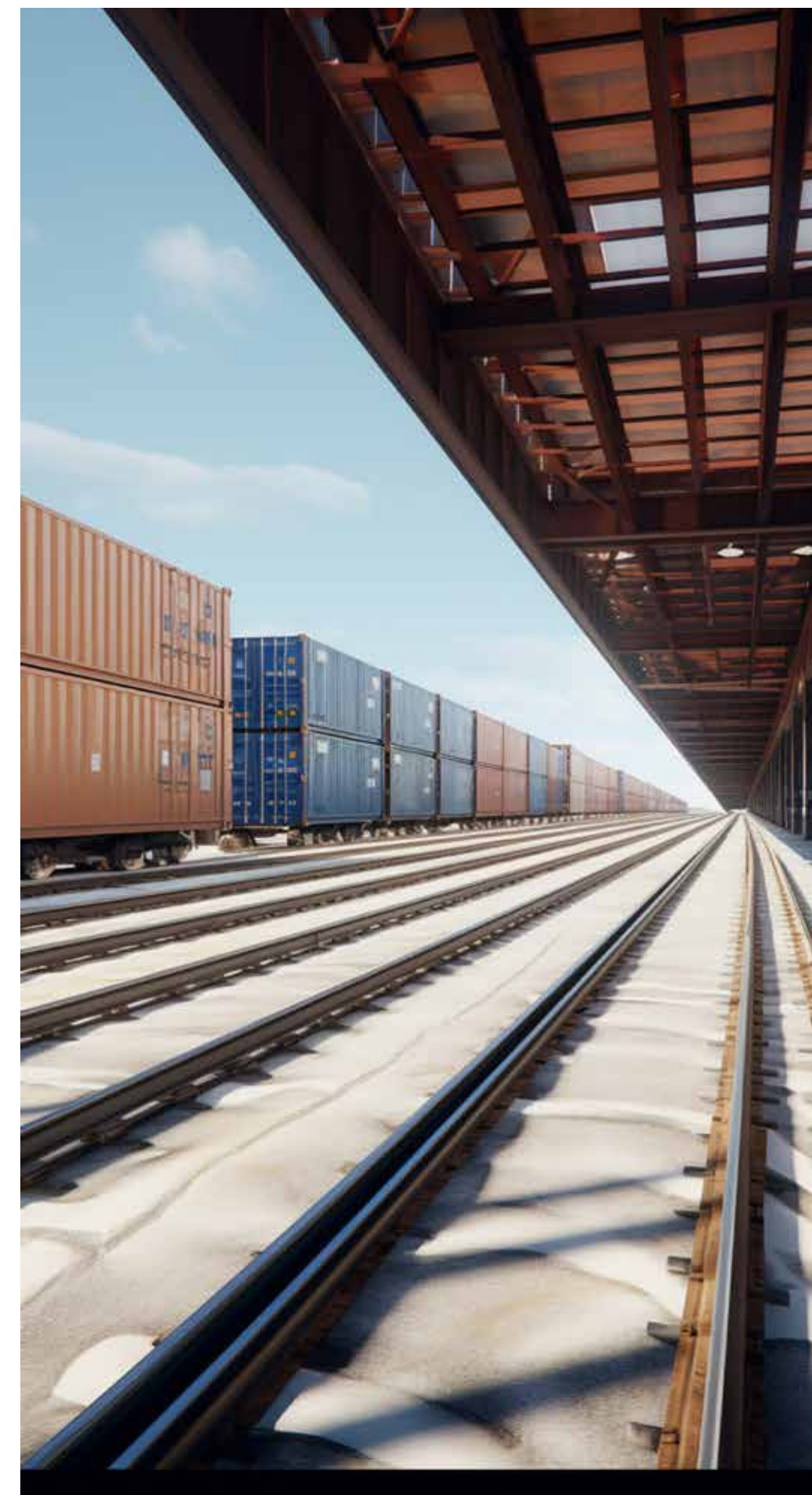
for the development of optimal freight traffic through the member States. Two of these are managed by Adif in Spain, such as 4, the Atlantic Corridor, and 6, the Mediterranean Corridor.

Its main mission is to strengthen cooperation between the Infrastructure Managers of the different European countries in key aspects such as the allocation of paths through an easily accessible one-stop shop system where customers can request and receive the dedicated offerings of the corridor along the networks, as well as in the deployment of interoperable systems and the coordinated management of cross-border connections. In the Spanish case, Adif is responsible for this control.

To carry out the necessary works within the country with which to cover the needs demanded by this great infrastructure, a series of initial investments have been incorporated within component 6 of the Recovery, Transformation and Resilience Plan. The completion of this internal network is necessary to meet the milestones set by the new European mobility strategy. Railway traffic must be doubled by 2030 and tripled by 2050.

Both corridors are essential for sustainable economic recovery, and are considered key to the Safe, Sustainable and Connected Mobility Strategy. The funds intended for both corridors in the Recovery Plan amount to 2,988 million euros, although the investment is much higher than this figure.

Two of the most important railway projects of the ten-t for Spain, are the Atlantic and Mediterranean corridors, which are the backbone of part of the country with exit to Europe through France.



ATLANTIC CORRIDOR

It is one of the most significant railway projects of the Trans-European Transport Network (TEN-T). It is an intermodal infrastructure, which is dedicated to both, the transport of goods and people. The main objective is to increase freight traffic by railway and make it much more competitive with the road to achieve sustainable mobility and make progress in the reduction of emissions associated with transport.

The European Union is confident that most of the 64,572 kilometres of the core network will be completed and operational by 2030/31; and in the following years, the 119,078 kilometres of the global network. This is the fourth of the nine corridors approved by the European Commission and it runs through Portugal, Spain, France, Germany and Ireland.

In the Spanish case, and after the expansion requested by the Government in 2019 - and accepted and consolidated in 2021 via the Brussels Multiannual Financial Framework (MFF) – this means 5,300 kilometres of network with an impact on more than 11 Autonomous Communities whose economies account for 63.7 per cent of GDP.

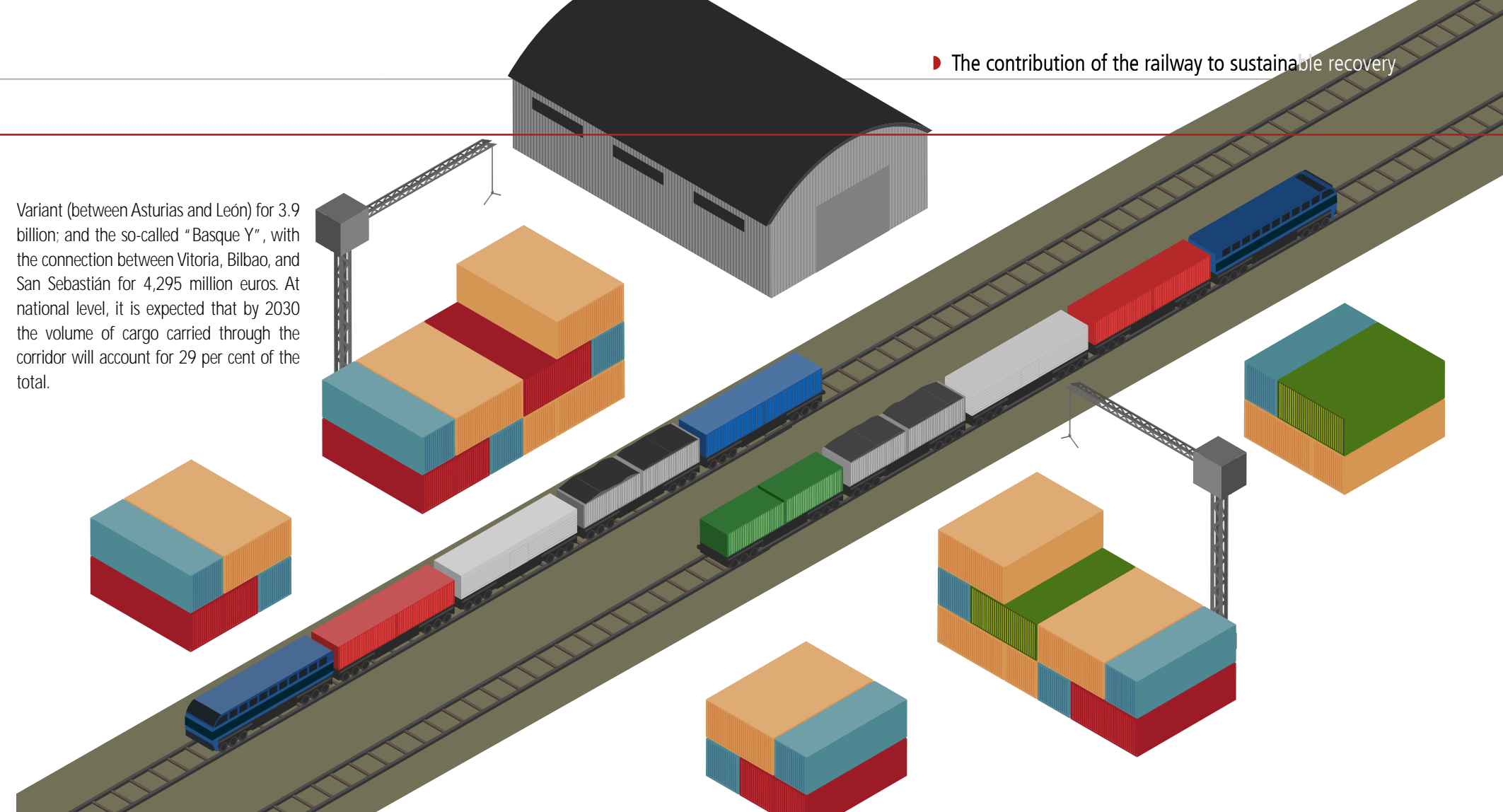
This expansion has integrated the communities of Galicia, Asturias, Navarra, La Rioja, the Balearic Islands, and the Canary Islands, as well as the provinces of León, Teruel, and Huelva. It includes four broad operational axes: Gijón-León-Valladolid; Coruña-Vigo-Orense-León; Zaragoza-Pamplona-Logroño-Bilbao; and Tenerife-Gran Canaria-Huelva-San Lucas de Barrameda-Sevilla-Córdoba.

According to MITMA, the Corridor has an investment forecast of 49,406 million euros, of which at the beginning of 2023, 33,325 million have already been executed, with 16,080 million pending execution. Of the latter, 3,910 million are investments for renovations and 12,168 million for new construction.

On the other hand, the 2023 National Budget has offered it an endowment of 1,648 million through ADIF; and the Recovery Plan subsidises 2,478 million euros, of which 1,473 million are exclusively for the Atlantic Corridor, and 1,005 for common sections.

The main actions include the expansion of high-speed lines in Galicia, with an investment of 7,075 million euros; the Pajares

Variant (between Asturias and León) for 3.9 billion; and the so-called "Basque Y", with the connection between Vitoria, Bilbao, and San Sebastián for 4,295 million euros. At national level, it is expected that by 2030 the volume of cargo carried through the corridor will account for 29 per cent of the total.



MEDITERRANEAN CORRIDOR

It is the second initiative for the development of TEN-T, as the sixth of the nine initiatives drawn up by the Commission. Starting from Algeciras and crossing the entire Mediterranean coast, it links with the rest of Europe through France reaching Hungary. It has an extension of 8,611 kilometres of railway, exceeding 1,500 kilometres in Spain.

This Corridor is very important for the country being a fundamental axis for intermodal connections between the railway and the ports. It enables to "remove" a good number of trucks from the roads, facilitating decarbonisation, sustainability, and greater efficiency in the freight transport. In addition, it must be taken into account that this route, which departs from Algeciras to cross the entire Mediterranean coast,

is one of the largest routes for the export of products, mainly horticultural, and that serves 47 per cent of the population.

The planned initial investment is around 21 billion euros. According to MITMA, until the beginning of 2023, nearly 9 billion euros have been awarded between bids adjudicated and contracts offered, about. In particular, 5,417.839 million euros have been tendered throughout the route (Algeciras to the French border); and, at the level of actions during the same period, 3,902.11 million euros have been granted throughout the Mediterranean arc.

Although the pace of work is much slower compared with works in the Atlantic corridor, there have been some initiatives by en-

trepreneurs in the area with the campaign called "Quiero Corredor". The Government has highlighted that since 2016, 100 per cent of the infrastructure is at least under study. In addition, they claim that the sections under construction at the beginning of 2023 are already at 75 per cent; and the sections in project are at 85 per cent. All this means that 34 per cent of the infrastructure has been made available.

Among the most important works of this corridor are the adaptation of the mixed gauge in the Valencian Community; the access to the ports of Sagunto and Castellón; the link the French border from Barcelona-Tarragona-Vandellós; or the Sagunto-Teruel-Zaragoza connection.

THE RAILWAY MOTORWAYS (RM) A COMPLEMENTARY SERVICE OF THE CORRIDORS

The search for synergies between modes of freight transport - which contribute to a greater development of integral logistics services with intermodal solutions - is contemplated within the Safe, Sustainable and Connected Mobility Strategy 2030 defined by the MITMA. This strategy aims at promoting the so-called Railway Highways whose coordination depends on the Railway Infrastructure Manager (Adif).

A railway motorway must be considered as a factor, not only of promotion, but of competitiveness in the freight transport. They are railway services that load road trailers or semi-trailers using specialised wagons. They are a combined rail-road transport segment in addition to the maritime containers and swap bodies. It therefore collaborates with the road improving long-distance transport using the truck for radial and capital distribution.

This initiative is included within the fra-

mework "Mercancías 30", which not only defines what are and what should be in the future the corridors destined for railway motorway services, but it has also created a support and advisory office for the implementation of this type of service. It is also responsible for the one-stop shop service that coordinates and gives support to the specific projects planned by logistics operators.

The studies on the development of "Mercancías 30", carried out by the Ministry of Transport, Mobility and Urban Agenda through Adif, show a certain optimism about the viability of the services offered by the railway motorways based on existing traffic. Distances of more than 500 kilometres, as well as the international traffic to France and Central Europe from the Basque Country and the Mediterranean Corridor, are seen as very profitable services. This could be viewed as a complement to the Atlantic and Mediterranean Corri-

dors, taking advantage of the synergies to save operational and external costs, as well as the lower emission of gases into the atmosphere.

Last June MITMA published the second call for aid of the railway incentive for 25 million euros, to promote railway transport through the Railway Motorways, as well as the development of 26 actions that mainly serve to reinforce the terminals and to open new possibilities to the railway motorways.

In fact, there are already two transport companies that have announced that they will put in 2024 the first mixed railway motorway (maritime-railway) that will link a connection between Valencia and Madrid. In turn, the Xunta de Galicia and the Galician Logistics Function Cluster have agreed to collaborate to promote the development of links of this type that connect with the Atlantic Corridor.

SOME MAFEX MEMBERS WITH

SUSTAINABLE PROJECTS



Alstom reveals the future design of the new high-capacity trains for Renfe

► **ALSTOM**
Alstom has unveiled the future design of the 201 Coradia Stream high-capacity trains ordered by Renfe for suburban services in large urban areas. The new trains, with 6 cars each (4 low-

floor cars and 2 double-deck cars), will have capacity for more than 900 passengers. The 12 doors on each side will improve station dwell time by speeding up passenger flow. In addition, the future trains, fully accessible for people with reduced mobility, will have spaces for PRM chairs, and multifunctional spaces for bicycles, suitcases, baby prams and more.

Technically, the new vehicles will be equipped with state-of-the-art equipment to improve reliability and punctuality. In addition, technology implemented will allow for thousands of data per second to be collected from the entire fleet. This real-time information ensures more efficient operational decision-making, which will result in a better service for commuters.

Segula, rolling stock retrofitting engineering for a more sustainable sector

► **SEGULA**
According to Europe's goals of reducing emissions and achieving climate neutrality, the railway sector (the most sustainable means of transport) continues its unstoppable growth. This has led to a very high number of orders for new rolling stock. In recent years, however, a different trend is beginning to emerge: refurbishing and transforming existing units to make them more sustainable or to extend the service life of vehicles.

In this line, for some years now, SEGULA Technologies, from its Railway Centre of Excellence in Zaragoza, has been working on comprehensive retrofit projects of various kinds, developing all the necessary engineering for the transformation of complete series of vehicles with the main goal of extending their useful life. In these cases, the concept of the projects is based on completely dismantling the vehicle (to the point of leaving practically the metal structure), and refitting it with new systems, elements and materials, designed in accordance with current and more sustainable requirements.

hicles. However, it is worth highlighting the importance of this fact in terms of sustainability since, instead of RECYCLING the aluminium or steel (with the energy cost that this entails), the old material is REUSED the old material, giving it a second useful life, which is one of the premises of eco-design and is also very much in line with the circular economy criteria that we see in today's society".

In this type of rolling stock remodelling projects, SEGULA is currently involved in projects of vehicle types as metro, regional/commuter train, and even locomotive. And, in the words of José Ángel Martín, "the experience acquired with these projects has meant an increase in technical skills given that, contrary to what one tends to think, this type of project is more complex at an engineering level than the development of a new vehicle due to the need to analyse and make compatible requirements and designs from several years ago with current ones, including the demanding regulations & standards in force".

José Ángel Martín, Executive Director of the Railway Division of SEGULA Spain, remarks that "this is a type of project that is on the rise. Of course, one of the main motivations for opting for a remodelling project instead of a completely new design is economic, due to - in general - it allows to save the cost of manufacturing the structural car body of the ve-

Siemens Mobility works on the development of solutions aimed at reducing the environmental impact and generating employment

► **SIEMENS MOBILITY**
Siemens Mobility works on the development of solutions aimed at reducing the environmental impact and generating employment. An example of this is the creation of its Sustainable Mobility Technological Center in Valencia, as part of its growth and internationalization strategy. For its development the have been created more than 60 jobs, hoping to reach 150. The teams will work on projects of railway signalling, both nationally and internationally. The company's goal is to get closer to its customers and meet the demands of the industry to promote the railway as a pillar of sustainable mobility.



In another relevant event and also oriented towards job creation and emission reduction, Siemens Mobility Spain and Ferrocarrils de la Generalitat de Catalunya have implemented the first digital interlocking in the cloud in southwestern Europe at Sant Boi de Llobregat station, Barcelona. This innovative technology, WESTRACE@DS3,

developed at the R+D+i Competence Center in Madrid, allows the hosting of digital signaling systems, increasing the capacity of the infrastructure and meeting high safety standards and reducing costs. This milestone represents a crucial step towards the mobility of the future, improving the efficiency and safety of rail transport.

CAF supports RENFE for the decarbonization of transport

► **CAF**
RENFE once again places its trust in the CAF Group to address the decarbonization of passenger transport thanks to its zero-emission mobility solutions. Last June, the Spanish operator confirmed its decision to award CAF the supply of 32 electric trains for medium-distance services.

The new trains will be equipped with batteries to run autonomously on sections of the network where there is no catenary

or when required when a power cut occurs. The units will have an operating speed of up to 200 km/h.



This new contract is added to the initial contract for the supply of 28 electric trains. RENFE thus seeks the incorporation of more technologically efficient and environmentally friendly units.

By offering innovative, green and long-lasting transport solutions, Stadler contributes to the sustainable mobility

► **STADLER**
By offering innovative, green and long-lasting transport solutions, Stadler contributes to the sustainable mobility. As an example, the new Renfe commuter trains. By combining double-deck and single-deck cars in the same train, we manage to increase transport capacity without compromising its accessibility, facilitating barrier-free mobility.

shift from road to rail. The EURO locomotive family was designed as a response to the new European trends and demands trends such as decarbonisation of transport, digitalisation, the lengthening of freight trains.

These locomotives boost energy efficiency, performance and reliability resulting in an optimal LCC and long-term profitability of rail operations.



Cellnex among the world’s leading telecommunications **companies in sustainability**

Cellnex, the main European operator of wireless communications infrastructure, continues to make strides in its commitment to environmental, social and good governance (ESG) matters. According to its Integrated Annual Report, during 2022 the operator met the objectives set in its ESG Master Plan for 2021-2025, whose level of performance was 100% progress in planning and 93% progress in implementation of the actions defined for 2022.

Cellnex is constantly improving its rating in the sustainability indices. In 2022, it has positioned itself as one of the five leading global telecommunications companies in sustainability, ranking fifth in the

CELLNEX MAINTAINS A CONSTANT IMPROVEMENT IN THE SCORES OBTAINED IN THE SUSTAINABILITY RATINGS.

Sustainalytics – ESG Risk Rating and positioning itself as one of the companies with the lowest global ESG risk in its sector. The company is also part of the main sustainability ratings and indices, such as CDP, FTSE4Good, MSCI, and in the S&P Global Corporate Sustainability Assessment, in which it was recognised as an “Industry Mover” in the Sustainability Yearbook 2023.

Cellnex continues to consolidate its decarbonisation plan in order to become carbon-neutral by 2035 and to reach the net zero emissions target by 2050. To achieve this, it performs a periodic analysis and monitoring of the approved science-based targets (SBT) for reduction, achieving a very satisfactory degree of compliance. Carbon footprint reduction (scope 1, 2 and 3) currently stands at almost 50%.



New **health and safety** measures in the renovation work on L4 of Barcelona Metro

OMSA Corporación has implemented new preventive health and safety measures in the comprehensive track and drainage renovation works on the Barceloneta-Verdaguer section of L4 of the Barcelona Metro. With the aim of minimising the exposure of workers to silica dust particles and diesel fumes - typical elements of the railway environment - the company has applied several initiatives, including the following:

- Design and implementation of an in-house ventilation strategy during the execution of the works, including windbreaks, water mist systems and additional portable ventilation systems.

- Continuous watering of the ballast to minimise dust generation.
- Implementation of changing rooms with double lockers so that workers have one locker for clean clothes and another for dirty clothes.
- Daily industrial cleaning service for work clothes and facilities.
- Use of long-sleeved work clothes and FFP3 protective masks.

In addition, during the development of the works, measurements of both silica dust and diesel fumes have been carried out periodically at different work points and facilities.



An aerial photograph showing the construction of the Fehmarnbelt tunnel, with a long bridge-like structure extending over a body of water, connecting two landmasses.

100 years at the forefront of mobility
**ENHANCING CONNECTIVITY,
COMMITTED TO
SUSTAINABLE MOBILITY**

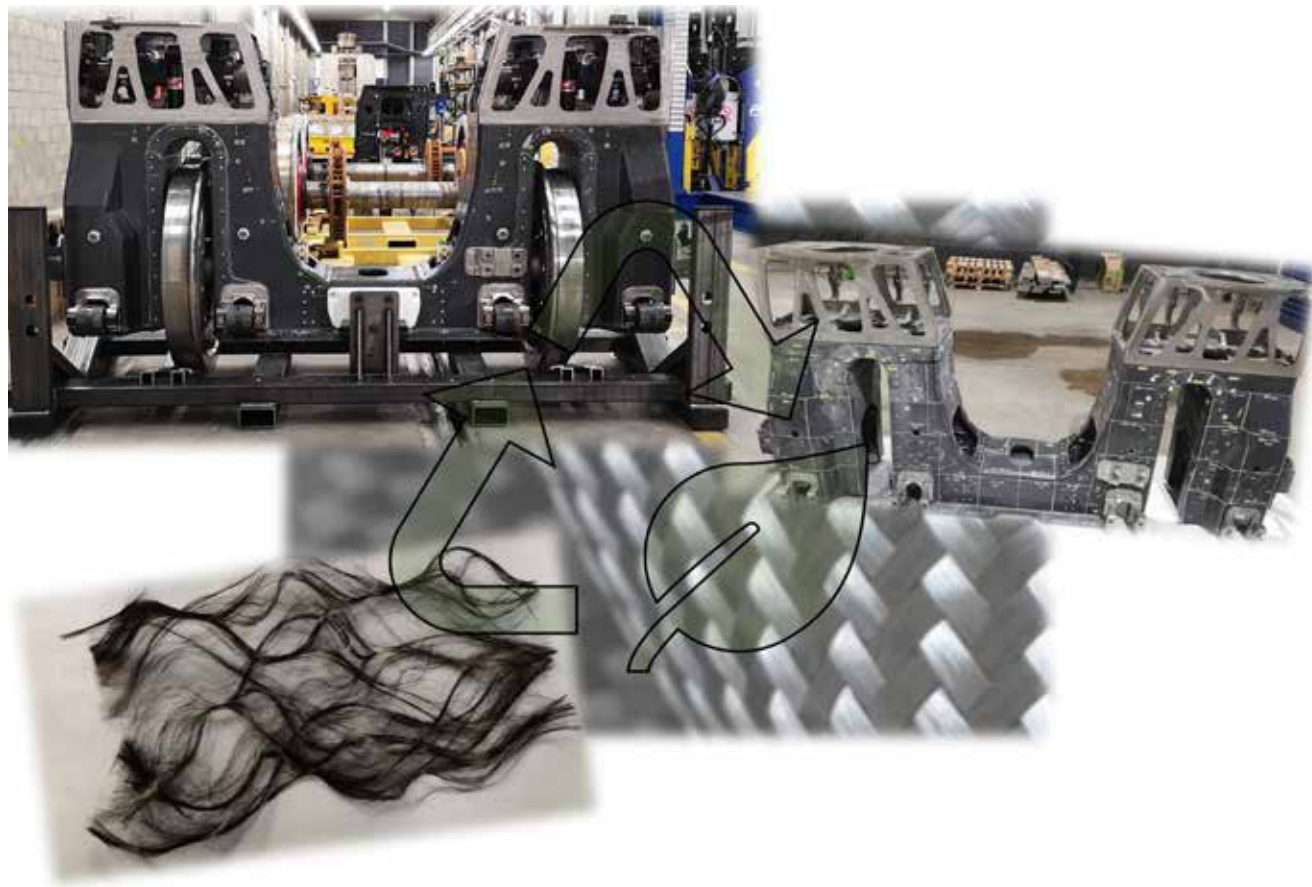
Thanks to the Fehmarnbelt tunnel, international trains will save a 160 km detour, reducing travel times and CO2 emissions.

With 18 kilometers of rail and road submerged tunnel, Denmark and Germany will become better connected by an infrastructure conforming to the most advanced technological and environmental standards.

www.sice.com/en

SICE | TECHNOLOGY FOR PROGRESS

TALGO develops lighter and more sustainable primary train structures.



The new concepts of light-weight structures involve the replacement of conventional materials with new high-performance materials that continue to be required to have characteristics such as sustainability, even for composite materials.

TALGO has manufactured two prototypes, a carbody and single-axle bogie frame ("rodal"), using mainly carbon fibre, with a significant reduction in weight, resulting in greater energy efficiency and a lower impact on railway infrastructures.

These were presented at the JEC World fair (Paris) and at Innotrans (Berlin), where they were very well received and had the opportunity

FUNCTIONALLY VALIDATED, THE PROTOTYPES HAVE BEEN USED TO RESPOND TO NEW ENVIRONMENTAL CHALLENGES, FOCUSING ON SUSTAINABILITY AND GENERATING A NEW CHALLENGE: COMPOSITE MATERIALS RECYCLING.

to disseminate the projects within the European's initiative Shift2Rail.

Functionally validated, the prototypes have been used to respond to new environmental requirements, focusing on sustainability and generating a new challenge: recycling of composite materials.

A process has been developed that combines different recycling techniques, obtaining clean recycled fibre, both carbon fibre and glass

fibre, with minimal loss of properties.

Another challenge arises at the end of life of the structures, where the materials present can be reused to manufacture second - generation components, which must be appropriately characterised within the new European initiative, Europe's Rail, the successor to Shift2Rail. TALGO's aim is to manufacture with eco-design in mind.

Green spaces for Valencia

Ineco has been commissioned to draw up the projects and coordinate the works for the integration of the railway in the city of Valencia, which will be executed in phases over the next few years. Thanks to the burying of the tracks, Valencia will have new green and leisure spaces in the city, transforming the urban environment.

The works include the construction of a new 1,200-metre-long tunnel, the assembly of the track, the adaptation of the overhead contact line and the civil works necessary to house security and communications installations.

In parallel, and due to the expected increase in passenger demand following the liberalisation of the railway sector and the development of the Mediterranean Corridor, the

THE ACTIONS INCLUDE THE CONSTRUCTION OF A NEW TUNNEL OF ABOUT 1,200 METRES IN LENGTH, THE TRACK ASSEMBLY, THE ADAPTATION OF THE OVERHEAD CONTACT LINE, AND THE CIVIL WORKS REQUIRED TO HOUSE SAFETY AND COMMUNICATIONS FACILITIES.

Joaquín Sorolla station will be enlarged, both in terms of tracks and

platforms as well as the building, car park and accesses.



MAFEX Spanish Railway Association

2023

FIND OUT MORE ABOUT ALL ACTIVITIES AND SERVICES WE HAVE PREPARED FOR 2022 REGARDING INTERNATIONALISATION AND COMPETITIVENESS AND INNOVATION

Alstom announces **major solar** Power Purchase Agreement in Spain

Alstom, global leader in smart and sustainable mobility, and Schneider Electric, the global leader in the digital transformation of energy management and automation, have announced a significant new Power Purchase Agreement (PPA) focused on solar development in Spain. The 160 GWh/year solar farm project will cover approximately the equivalent of 80% of Alstom's electricity consumption in Europe. The solar farm is expected to begin operations beginning 2025, with the contract lasting 10 years.

The announcement comes soon after Alstom had its near-term emissions reduction targets validated by the Science Based Targets initiative (SBTi) as consistent with levels required to meet the goals of the Paris

THE ANNOUNCEMENT COMES SHORTLY AFTER THE SCIENCE BASED TARGETS INITIATIVE (SBTi) VALIDATED ALSTOM'S SHORT-TERM EMISSIONS REDUCTION TARGETS AS CONSISTENT WITH THE LEVELS REQUIRED TO MEET THE OBJECTIVES OF THE PARIS AGREEMENT.

Agreement. The SBTi has validated the corporate greenhouse gas emissions reduction targets submitted by Alstom and confirmed that Alstom's scope 1 and 2 target ambition is in line with a 1.5°C trajectory.

Schneider Electric supported Alstom and its developer in the identification, negotiations and procurement of renewable energy project in Spain. Alstom and its developer also benefit from an attractive structure, under Schneider's advisory of the project, managing the

strategy, and other ongoing negotiations throughout the total VPPA process.

This collaboration between Alstom and Schneider Electric will further efforts to deliver on Alstom's goal to accelerate decarbonisation related to energy consumption of Alstom facilities and sites in Europe. The agreement expands Schneider's continued commitment to the development of power purchase agreements within Europe, as the leading advisor in PPAs.



New 3D 360° brush system to improve washing in the booth coupling area

Traditionally, the overhanging coupling area in train cabins meant a problem for washing as it was not possible to reach them with traditional brushes.

Aquafrisch has developed a new design for horizontal brushes for front/rear washing, which up to now have been limited by the height of the coupling between rolling units. With a 360° turn of the vertical axis, it is possible to overcome this coupling and brush both sides, which significantly improves the quality of the wash.

NEW 3D 360° BRUSH SYSTEM TO IMPROVE WASHING IN THE DOCKING AREA OF THE CABINS.



Intelligent and integrated rail asset management

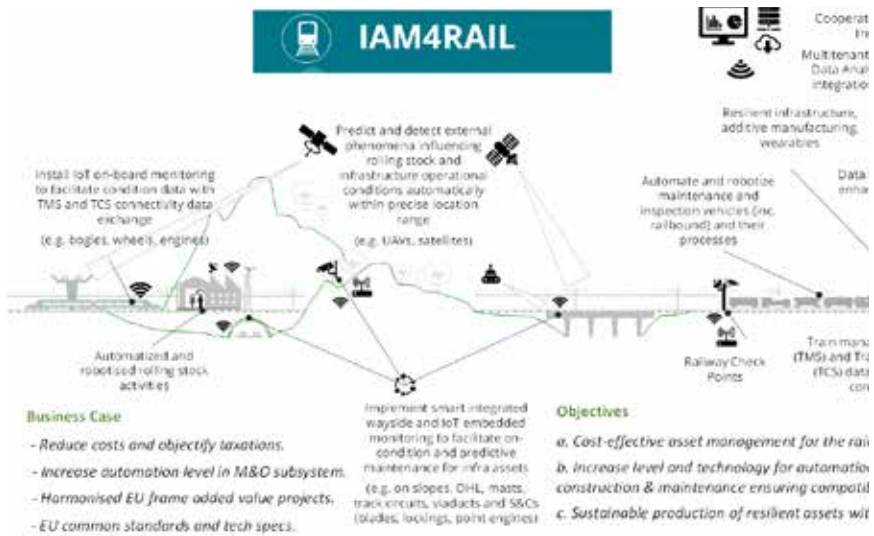
COMSA Corporación, as a partner of eSGR European Smart Green Rail, participates in IAM4RAIL, one of the six projects funded by the first call issued by Europe's Rail Joint Undertaking, the research company that succeeds the European Union's Shift2Rail initiative.

IAM4RAIL focuses on seven integrated demonstrators for rail assets that are key to research and innovation (R&I) in the sector. The project will smooth the integration of asset condition information obtained through advanced monitoring and into the traffic management system (TMS), combining available data with artificial intelligence (AI) and digital twins.

Thus, it aims to strengthen the next generation of Intelligent and Integrated Rail Asset Management by providing innovative solutions covering both fixed assets and rolling

ITS OBJECTIVE IS TO STRENGTHEN THE NEXT GENERATION OF SMART AND INTEGRATED RAILWAY ASSET MANAGEMENT BY PROVIDING INNOVATIVE SOLUTIONS COVERING BOTH FIXED ASSETS AND ROLLING STOCK.

stock, minimising asset maintenance costs and extending its lifespan, while improving the performance and reliability, as well as meeting the safety requirements of the railway system.



Alstom develops in Spain a pioneering ERTMS project for low-density lines



Alstom will develop for Adif a new ERTMS (European Traffic Management System) system application designed explicitly for low density lines. The project includes the installation and testing on a pilot line of the General Interest Railway Network.

This R&D&I project, managed by Alstom's railway safety and signalling technology centre in Madrid, aims to develop a new application of the ERTMS standard for low density local and regional lines by introducing satellite technology -among others- and public telecommunications networks. The initiative proposes using novel train positioning systems (such as sensors hybridisation, including satellite sensors) or public communication networks instead of GSM-R networks.

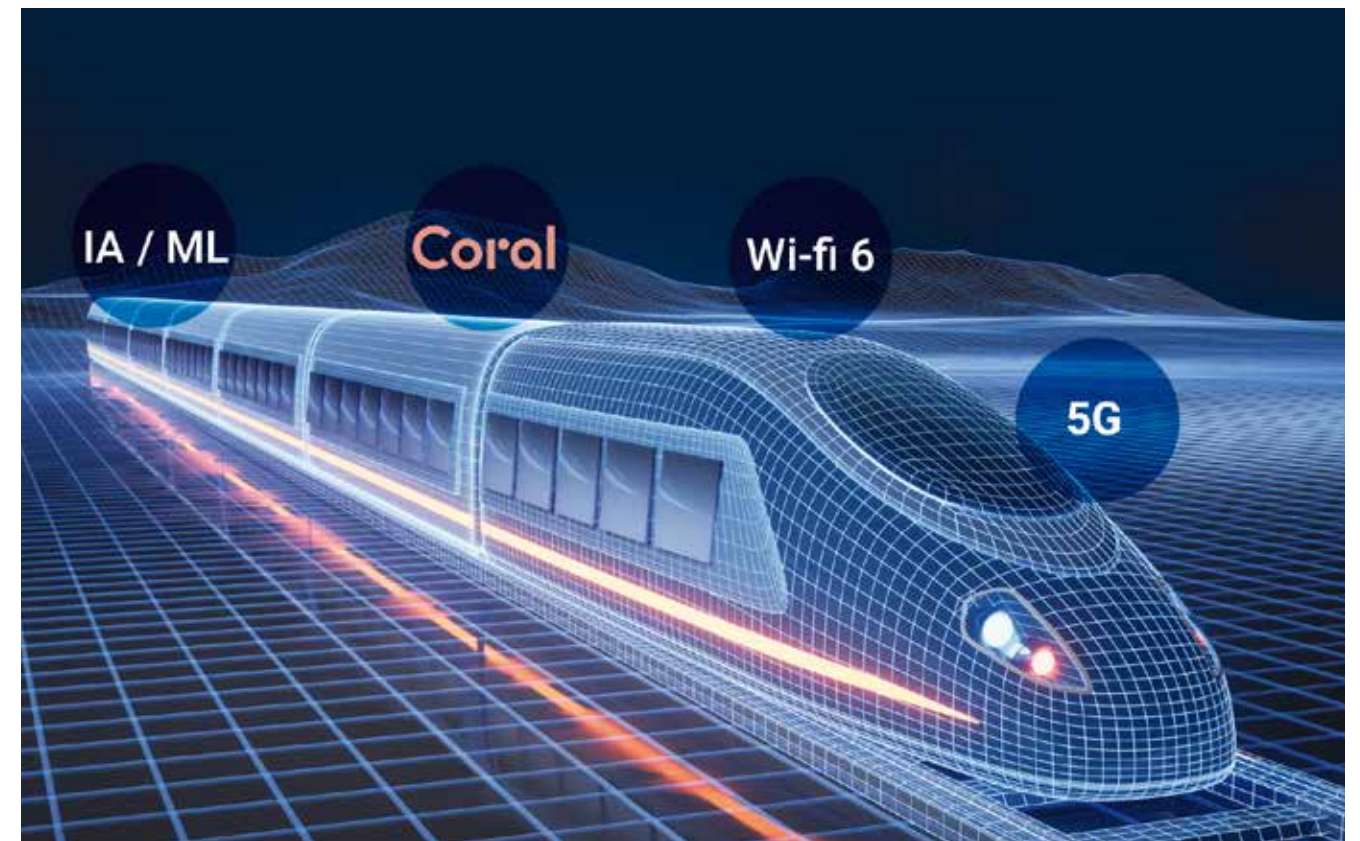
The European Traffic Management System is the most advanced tra-

THE INITIATIVE, A PIONEER IN SPAIN, PROPOSES THE USE OF IN-NOVATIVE TRAIN POSITIONING SYSTEMS (THROUGH THE USE OF SENSOR HYBRIDISATION, INCLUDING THE SATELLITE-BASED ONES) OR THE USE OF COMMUNICATIONS NETWORKS NOT BASED ON THE GSM-R STANDARD.

in command and control system adopted by the European Union for signalling and communications between the track and onboard equipment. The development and dissemination of this European system has contributed in recent decades to safe and interoperable railway operation. However, its adoption out of the mainline has been more limited due to its high cost and difficulty ensuring compatibility with the installed equipment.

This new system, which is now being developed with the innovation project, distinguishes itself by

having less on-track equipment, while matching the safety performance of the ERTMS usually implemented on high-speed lines. Moreover, it is interoperable and homogeneous with the existing solutions. Secondary railway lines will benefit from the advantages and functionalities of the European standard: ERTMS significantly improves the quality of the service and its performance and conditions of reliability, quality and efficiency. In addition, it increases the system's transport capacity by reducing the intervals between running trains and lowering operating costs.



Google Coral AI in onboard equipment

TEL DAT HAS DEVELOPED NEW COMMUNICATION PLATFORMS FOR RAILWAY ENVIRONMENTS, MULTI-SERVICE EQUIPMENT WITH 5G TECHNOLOGY, WIFI 6, ESIM AND A NEW GENERATION EMBEDDED CYBERSECURITY SOLUTION.

The use of AI is having an impact on all areas of business and within the railway sector it is of vital importance in the operational efficiency of transport operators. For better decision making, Teldat applies AI to control IT infrastructure thanks to data processing and visualization.

Teldat has developed new communication platforms for railway environments, multi-service equipment equipped with 5G technology, WIFI 6, eSIM and a new generation em-

bedded cybersecurity solution. This evolution allows, among other things, to process network traffic and apply rules to block potentially dangerous traffic. It also adds AI algorithms to identify and correct actions by dynamically reconfiguring the network.

Google technology is present in Teldat equipment. They have a TPU (tensor processing unit) configuration that optimizes and accelerates machine learning models, expanding the variety of onboard applica-

tions, such as artificial vision, facial and voice recognition, and predictive maintenance.

Having these Google TPU processors in Teldat's rolling stock routers complement the need for communications and security in passenger comfort and wifi networks. It improves the use of real-time applications, fast execution of algorithms and local data processing, which results in low latency and low power consumption.

This development of Teldat onboard solutions is introduced as a response to the current needs of operators, train manufacturers and integrators to converge on a Train-to-Ground communications reliable platform, secured and equipped with an AI engine in a single solution.



Electric Conversion: the Challenge of the Ferrolinera

The adaptation of high catenary voltages to three-phase low voltage for powering electric vehicle chargers must be high power, up to 500 kW, with galvanic isolation six times the working voltage (18.5 kV), and high efficiency, as it will be commercialized with the energy.

Salicru's first prototype will be tested in early 2024 at the Madrid-Atocha station, an infrastructure that already contains digitalized thyristor rectifiers from Salicru's DC POWER-L series. It is an innovative solution based on a parallelizable converter of 250 kW with five levels (9 levels phase to phase) and a high efficiency of around 96% at a switching frequency of 7 kHz, reducing acoustic noise. Both of these characteristics are unusual for con-

ADIF WISHES TO CAPITALISE THE HIGH-POWER RAILWAY ELECTRIFICATION INFRASTRUCTURE UNDERUSED IN ENERGY AND TO TAKE ADVANTAGE OF THE TRAIN BRAKING, INSTALLING ELECTRIC VEHICLE CHARGING POINTS IN ITS THOUSAND AND A HALF STATIONS OF THE RAILWAY NETWORK. SALICRU IS WORKING ON A SOLUTION TO EXTEND THIS NETWORK AS SOON AS POSSIBLE.

verters at these voltages and power levels.

Salicru goes further, considering powering isolated points in the railway infrastructure, and has also developed a 125 kW model with similar performance but a switching frequency of 10 kHz, with very little acoustic noise. Both parallelizable modular designs allow for grid

connection and bidirectionality, in addition to reactive power management and harmonic compensation, completing the proposal.

For high-speed lines like the AVE, whose high voltage is 25 kV AC, Salicru provides low-voltage converters, single-phase to three-phase, for the same functionality.

Transparent Display Technology: New Formats That Expands Its Adaptability

THE TECHNOLOGY USES ADVANCED MATERIALS AND PROJECTION TECHNIQUES, GENERATING CLEAR AND SHARP IMAGES WITHOUT IMPACTING ON THE BACKGROUND VISUALISATION.

numerous advantages to both operators and passengers. Operators can display real-time ads and information, enhancing communication, while passengers have access to data, news, and personalized entertainment.

Transparent display technology is a promising trend. This technology, offered by Screensor, which was previously available in 35 and 55 inches, has been updated to offer two new sizes: 30 and 77 inches. The 77-inch screen also comes with an extra novelty, as it features what its developers call META technology, a set of microlenses that greatly enhance the brightness of an OLED.

Features:

The technology utilizes advanced materials and projection techniques, generating clear and sharp images without affecting background visibility. Moreover, it is bright enough to ensure optimal visibility both during the day and at night.

Integrating transparent screens in spaces such as train windows offers

Conclusions:

The new sizes of transparent screens integrated into train windows represent a technological innovation in the field of transportation. With their new sizes and a focus on image quality and the brightness of the 77-inch screen, Screensor's solutions based on this technology have the potential to transform the way we interact with public transportation and enhance our travel experience.



Advancements in BIM Technology: Rail Baltica Project Named Finalist in the 2023 Going Digital Awards

We are proud to announce that our project "Value Engineering Stage for Detailed Design and Detailed Design Supervision of the Rail Baltica Project" (3787-RL) has been selected as a FINALIST in the Rail and Transit category of the prestigious Going Digital 2023 Awards, sponsored by Bentley Systems.

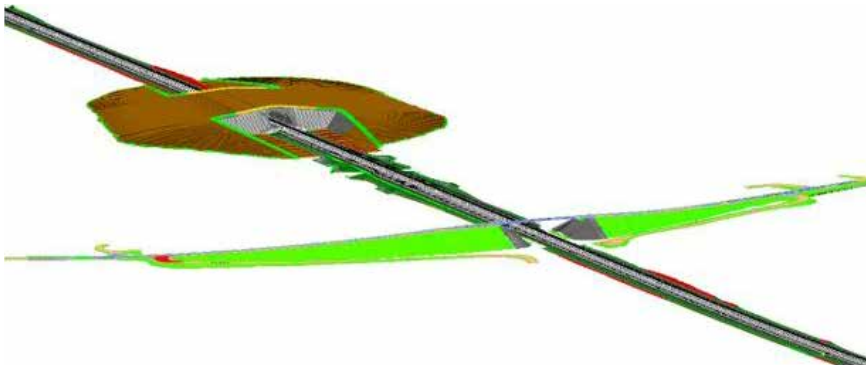
This exciting recognition not only demonstrates the success of our project, but also our strong commitment to innovation and BIM working practices.

The Going Digital Awards in Infrastructure are a global showcase that celebrates excellence in the implementation of digital technologies in the infrastructure industry.

In addition to efficiency and accuracy, BIM development technology has also brought advantages in terms of sustainability. The ability to perform advanced simulations and analysis using BIM models has made it possible to anticipate challenges and take timely corrective action, minimizing environmental impact and ensuring sustainable construction practices.

In this way, IDOM, with its expert professional teams and extensive value engineering knowledge, is actively promoting the use of IFC open standards for multi-disciplinary collaboration in the design of the 389 km railway corridor linking Estonia, Latvia and Lithuania, the largest and most ambitious digitalization project in the sector.

"VALUE ENGINEERING STAGE FOR DETAILED DESIGN AND DETAILED DESIGN SUPERVISION OF THE RAIL BALTICA PROJECT" (3787-RL) HAS BEEN SELECTED AS A FINALIST IN THE RAIL AND TRANSIT CATEGORY OF THE PRESTIGIOUS GOING DIGITAL 2023 AWARDS, SPONSORED BY BENTLEY SYSTEMS.



Waterproofing of a railway gallery with resin injections



In this railway gallery, located in the town of Benevento (Italy), water had leaked through both the vault and the side walls. To solve the problem, a waterproofing solution was chosen for the gallery, using Uretek Water Barrier® technology.

The gallery had a single lane, with a

length of about 340m and a height of 4.5/5m, built with preformed stone blocks joined with cement mortar.

Leaks from the vault posed a problem with the overhead power line. Previous attempts had been made to block them with osmotic mor-

tars, but the problem could not be solved.

Thanks to Uretek's leak detection solution, the problem was solved quickly, safely, economically and minimally invasively. The intervention was planned with the objective of reducing the leaks in the vault by about 3/3.2m, with a total linear development of 100m. A total vault area of 315m² was treated in 24 days. The work was carried out exclusively at night, so as not to interrupt rail traffic.

Uretek's Water Barrier technology was used, which combines the expansive resin with a saturating gel. The resin seals the larger cavities, while the gel provides complete saturation.



We are CERTIFER A global presence

For 25 years, CERTIFER provides certification, inspection, Audit and support in testing services in railway, guided transportation and beyond.

21
locations

50+
countries with projects undertaken

25 years
of expertise in railway testing, inspection and certification

650+
experts from all railway sectors

220+
employees worldwide

20
languages spoken



Testing
Inspection
Certification

Railway Transportation
Urban Mobilities
Hoisting, Piling & Lifting Equipment

Application of the "Methodology for the Integration of the Human Factor in Risk Analysis" in The Medellín Metro

Ineco continues to supervise the modernisation work that will give 42 Medellín Metro trains more than 20 years of useful life. Thanks to this project, they will have improvements such as changing the traction chain, migrating to the latest DC/AC technology; replacing the current auxiliary power supply system and the air production system with new, more energy-efficient equipment; as well as adapting the design of the units to a more modern and up-to-date image, among others.

On the other hand, since last year, Ineco has also been collaborating with Metro de Medellín in the development of a pilot project for the application of the "Methodology for the Integration of the Human Factor in Risk Analysis". This methodology is presented as a new way of analysing the influence of

THIS METHODOLOGY IS PRESENTED AS A NEW WAY OF ANALYSING THE INFLUENCE OF THE HUMAN FACTOR IN INFRASTRUCTURE MANAGEMENT.



the human factor in infrastructure management and has been specifically applied to the analysis of certain manoeuvres carried out in the Bello Yard of the Medellín Metro.

The methodology has been developed over the last few years through

internal innovation programmes and received the CANSO "Global Safety Achievement Award 2019", demonstrating the company's commitment to research, development and innovation.



MoySEST, boosting the digital transformation of the railway sector

Teltronic, in cooperation with Kenmei Technologies, Nemergent Solutions and S2 Grupo, has launched the MoySEST (Mission Critical Services and Transport Systems) – Innovation in 5G for transport corridors project which, through a broadband train-to-ground critical communication solution based on 5G technology, aims to boost and accelerate the digital transformation of the railway sector in Spain.

The current demands of transport operators, such as real-time video surveillance services, preventive maintenance or full autonomous driving, are not achievable with the technologies currently in use, some of which, such as GSM-R, are very close to obsolescence.

THE PROJECT AIMS TO ELIMINATE THESE TECHNOLOGICAL AND FUNCTIONAL BARRIERS THROUGH A SOLUTION THAT, ON 5G RADIO TECHNOLOGY, DEVELOPS CRITICAL TRAIN-GROUND COMMUNICATION SERVICES BASED ON STATE-OF-THE-ART STANDARDS SPECIFICALLY DESIGNED UNDER THE FRMCS UMBRELLA.

The MoySEST project is launched with the ambition of eliminating these technological and functional barriers through a solution that, based on 5G radio technology, develops critical train-to-ground communication services based on latest-generation standards specifically designed under the framework of FRMCS.

Different lines of work will address the functional suitability of 5G technology for the support of mission-critical services, real-time supervision mechanisms of the system's cyber-

security framework or the provision of specific and interoperable services through FRMCS, among many others.

MoySEST, one of the initiatives selected in the 2022 call of UNICO Sectorial 5G, is expected to be developed over 36 months, incorporating a final stage of validation of the results obtained in the form of a pilot in a controlled environment, and aspires to international dissemination with the creation of a model that can be replicated in other countries.



MEMBERS DIRECTORY

ENGINEERING, CONSULTANCY AND CERTIFICATION

Projects and infrastructure technical assistances, superstructure, signalling, communications and ticketing

- ACYGS Sales Management, S.L.
- Aimen Centro Tecnológico
- Air Rail
- Ardanuy Ingeniería, S.A.
- Asea Brown Boveri, S.A.
- Barbara IoT, S.L.
- Caf Signalling, S.L.
- Caf Turnkey & Engineering, S.L.
- Calmell, S.A.
- CEIT
- Centum Digital
- Create Human Resources
- Citef (Fundación para el fomento de la innovación industrial)
- Dsaf-Dinámicas De Seguridad, S.L.
- Elecnor Deimos
- Mieres Rail, S.A.
- Endavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- HaslerRail (Secheron Hasler Group)
- Ibérica Tecnología en Sistemas de Seguridad Ferroviarios, S.L. (ITSS)
- ICF - Ingeniería y Control Ferroviario
- Idom-Engineering, Consulting, Architecture
- Ikusi, S.L.U.
- Indra Sistemas, S.A.
- Ineco-Ingeniería y Economía del Transporte, S.A.
- Ingerop T3 S.L.U.
- Inse Rail, S.L.
- Luznor Desarrollos Electrónicos, S.L.
- Segula Technologies España, S.A.U.
- Sener Ingeniería y Sistemas, S.A.
- SGS Group Spain
- Tecnival, S.A.
- Teldat, S.A.
- Teltronic
- Tekniker
- Thales España Grp, S.A.U.
- TPF Getinsa Euroestudios, S.L.
- Trigo Group
- Typsa - Técnica Y Proyectos, S.A.
- Screensor Tech
- Syneox Rail S.L
- Vicomtech
- WSP Spain-Apia, S.A.

Systems, environmental, financial management and IT consulting

- Aimen Centro Tecnológico
- Aquafrisch, S.L.
- Ardanuy Ingeniería, S.A.
- Asea Brown Boveri, S.A.
- Citef (Fundación para el fomento de la innovación industrial)
- Elecnor Deimos
- Idom-Engineering, Consulting, Architecture
- Ineco-Ingeniería y Economía del Transporte, S.A.
- Ingerop T3 S.L.U.
- Mainrail, S.L.
- Segula Technologies España, S.A.U.
- Sener Ingeniería y Sistemas, S.A.
- SGS Group Spain
- SQS (Software Quality Systems, S.A.)
- TPF Getinsa Euroestudios, S.L
- Vicomtech
- WSP Spain-Apia, S.A.

Technical Specifications Drafting and supervision of rolling stock manufacturing

- Aimen Centro Tecnológico
- Ardanuy Ingeniería, S.A.
- Asea Brown Boveri, S.A.

- Bureau Veritas Inspección y Testing (Grupo Bureau Veritas)
- Caf Turnkey & Engineering, S.L.
- Hispacold, S.A.
- Idom-Engineering, Consulting, Architecture
- Ineco-Ingeniería y Economía del Transporte, S.A.
- Ingerop T3 S.L.U.
- Segula Technologies España, S.A.U.
- Sener Ingeniería y Sistemas, S.A.
- SGS Group Spain
- Trigo Group
- WSP Spain-Apia, S.A.

Work supervision

- Aimen Centro Tecnológico
- Ardanuy Ingeniería, S.A.
- Asea Brown Boveri, S.A.
- Caf Turnkey & Engineering, S.L.
- Idom-Engineering, Consulting, Architecture
- Indra Sistemas, S.A.
- Ineco-Ingeniería y Economía del Transporte, S.A.
- Ingerop T3 S.L.U.
- Inse Rail, S.L.
- Job Impulse España
- Segula Technologies España, S.A.U.
- Sener Ingeniería y Sistemas, S.A.
- SGS Group Spain
- Sice Tecnología y Sistemas
- Syneox Rail S.L
- Tpf Getinsa Euroestudios, S.L
- Typsa - Técnica y Proyectos, S.A.
- WSP Spain-Apia, S.A.

Product and process certifications

- ACYGS Sales Management, S.L.
- Aimen Centro Tecnológico
- Applus+ Laboratories
- Ardanuy Ingeniería, S.A.
- Bureau Veritas Inspección y Testing (Grupo Bureau Veritas)
- Certifer Belgorail, S.A. Sucursal en España
- Cetest, S.L.
- Citef (Fundación para el fomento de la innovación industrial)
- Dsaf-Dinámicas De Seguridad, S.L.
- Idom-Engineering, Consulting, Architecture
- Ineco-Ingeniería y Economía del Transporte, S.A.
- S.A.E. Ibertest
- Sener Ingeniería y Sistemas, S.A.
- SGS Group Spain
- SQS (Software Quality Systems, S.A.)
- Trigo Group
- Virlab
- WSP Spain-Apia, S.A.

Drafting of operation and maintenance (O&M) plans and transport and demand studies

- ACYGS Sales Management, S.L.
- Aimen Centro Tecnológico
- Ardanuy Ingeniería, S.A.
- Caf Turnkey & Engineering, S.L.
- Citef (Fundación para el fomento de la innovación industrial)
- Mieres Rail, S.A.
- Idom-Engineering, Consulting, Architecture
- Ineco-Ingeniería y Economía del Transporte, S.A.
- Ingerop T3 S.L.U.
- Segula Technologies España, S.A.U.
- SGS Group Spain
- Syneox Rail S.L
- Tekniker
- Tpf Getinsa Euroestudios, S.L.
- Typsa - Técnica y Proyectos, S.A.

Training and simulations tools

- Aimen Centro Tecnológico
- Applus+ Laboratories
- Asea Brown Boveri, S.A.

- Create Human Resources
- HaslerRail (Secheron Hasler Group)
- Ingerop T3 S.L.U.
- Job Impulse España
- Lander
- S.A.E. Ibertest
- Segula Technologies España, S.A.U.
- Syneox Rail S.L
- Tekniker
- WSP Spain-Apia, S.A.

INFRASTRUCTURE AND SUPERSTRUCTURE

Civil works (platforms,stations, depots)

- Aimen Centro Tecnológico
- Azvi, S.A
- Barbara IoT, S.L.
- Caf Turnkey & Engineering, S.L.
- Comsa Corporación
- Elecnor SyP
- Funor, S.A.
- ICF - Ingeniería y Control Ferroviario
- Imathia Construcción, S.L.
- Inse Rail, S.L.
- Lantania
- Luznor Desarrollos Electrónicos, S.L.
- Sener Ingeniería y Sistemas, S.A.
- Uretrek Soluciones Innovadoras, S.L.U.

Electrification

- Alstom Transporte, S.A.
- Azvi, S.A.
- Asea Brown Boveri, S.A.
- Caf Turnkey & Engineering, S.L.
- Comsa Corporación
- Cunext
- Elecnor SyP
- HaslerRail (Secheron Hasler Group)
- ICF - Ingeniería y Control Ferroviario
- Ingeteam Power Technology, S.A.
- Inse Rail, S.L.
- La Farga Yourcoppersolutions, S.A.
- Lantania
- Mosdorfer Upresa Rail, S.A.U.
- Syneox Rail S.L
- Telice, S.A.
- Valdepinto, S.L.

Infrastructure and superstructure equipment and components

- Aimen Centro Tecnológico
- Air Rail
- Alstom Transporte, S.A.
- Amurrio Ferrocarril y Equipos, S.A.
- Applus+ Laboratories
- Arcelormittal España, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Asea Brown Boveri, S.A.
- Azvi, S.A.
- Cables de Comunicaciones Zaragoza, S.L.
- Caf Turnkey & Engineering, S.L.
- CEIT
- Comsa Corporación
- Create Human Resources
- Cunext
- Dsaf-Dinámicas De Seguridad, S.L.
- Elecnor Deimos
- ICF - Ingeniería y Control Ferroviario
- Mieres Rail, S.A.
- Flexix, S.A.
- Funor, S.A.

MEMBERS DIRECTORY

- Ikusi, S.L.U.
- Inse Rail, S.L.
- Ladicim
- Lantania
- Llallo
- Mosdorfer Upresa Rail, S.A.U.
- Precon - Prefabricaciones y Contratas, S.A.U.
- Pretensados del Norte, S.L.
- S.A.E. Ibertest
- Salicru, S.A.
- Screensor Tech
- Syneox Rail S.L
- Talleres Alegría, S.A.
- Talleres Zitón
- Tecnival, S.A.
- Telice, S.A.

Track assembly

- Alstom Transporte, S.A.
- Amurrio Ferrocarril y Equipos, S.A.
- Azvi, S.A.
- Caf Turnkey & Engineering, S.L.
- Comsa Corporación
- Create Human Resources
- ICF - Ingeniería y Control Ferroviario
- Imathia Construcción SL
- Inse Rail, S.L..
- Lantania
- Pretensados del Norte, S.L.
- Talleres Alegría, S.A.
- voestalpine Railway Systems JEZ, S..L.

TRAFFIC CONTROL AND SIGNALLING SYSTEMS, COMMUNICATION, PASSENGER INFORMATION AND TICKETING

Traffic control and signalling (safety)

- Alstom Transporte, S.A
- Cables de Comunicaciones Zaragoza, S.L.
- Caf Signalling, S.L.
- Caf Turnkey & Engineering, S.L.
- CEIT
- Create Human Resources
- Endavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- Electrans, S.A.
- HaslerRail (Secheron Hasler Group)
- ICF - Ingeniería y Control Ferroviario
- Ikusi, S.L.U.
- Indra Sistemas, S.A.
- Inse Rail, S.L..
- Luznor Desarrollos Electrónicos, S.L.
- Revenga Ingenieros, S.A.
- S.A.E. Ibertest
- Salicru, S.A.
- Segula Technologies España, S.A.U.
- Sice Tecnología y Sistemas
- Siemens Rail Automation, S.A.U.
- Tecnival S.A
- Teltronic, S.A.
- Telice, S.A.
- Thales España Grp, S.A.U.
- voestalpine Railway Systems JEZ SL

Protection (security) and infrastructure monitoring

- Alstom Transporte, S.A.
- Azvi, S.A.
- Asea Brown Boveri, S.A.
- Barbara IoT, S.L.
- Caf Turnkey & Engineering, S.L.
- Comsa Corporación

- Create Human Resources
- Dsaf-Dinámicas De Seguridad, S.L.
- HaslerRail (Secheron Hasler Group)
- ICF - Ingeniería y Control Ferroviario
- Indra Sistemas, S.A.
- Inse Rail, S.L..
- Mainrail, S.L.
- Salicru, S.A.
- Segula Technologies España, S.A.U.
- Siemens Rail Automation, S.A.U.
- Telice, S.A.
- Thales España Grp, S.A.U.
- Vicomtech

Systems and equipment for collection, ticketing and access control

- Asea Brown Boveri, S.A.
- Caf Turnkey & Engineering, S.L.
- Calmell, S.A.
- Comsa Corporación
- Gmv Sistemas, S.A.U.
- Ikusi, S.L.U
- Indra Sistemas, S.A.
- Inse Rail, S.L.
- Revenga Ingenieros S.A
- Salicru, S.A.
- Sener Ingeniería y Sistemas, S.A.
- Sice Tecnología y Sistemas
- Siemens Rail Automation, S.A.U.
- Telice, S.A.
- Vicomtech

Communications

- Azvi, S.A.
- Cables de Comunicaciones Zaragoza, S.L.
- Caf Turnkey & Engineering, S.L.
- CEIT
- Cellnex Telecom, S.A.
- Comsa Corporación
- Elecnor SyP
- Endavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- Gmv Sistemas, S.A.U.
- HaslerRail (Secheron Hasler Group)
- ICF - Ingeniería y Control Ferroviario
- Ikusi, S.L.U
- Indra Sistemas, S.A.
- Inse Rail, S.L.
- Revenga Ingenieros S.A.
- Salicru, S.A.
- Screensor Tech
- Sener Ingeniería y Sistemas, S.A.
- Sice Tecnología y Sistemas
- Siemens Rail Automation, S.A.U.
- Teldat, S.A.
- Teltronic, S.A.U.
- Telice, S.A.
- Thales España Grp, S.A.U.
- Vicomtech

Passenger information and on-board entertainment systems

- Alstom Transporte, S.A.
- Caf Turnkey & Engineering, S.L.
- Elecnor Deimos
- Elecnor SyP
- Gmv Sistemas, S.A.U.
- Icon Multimedia, S.L.
- Indra Sistemas, S.A.
- Inse Rail, S.L.
- Ikusi, S.L.U
- Revenga Ingenieros, S.A.

- Salicru, S.A.
- Screensor Tech
- Sice Tecnología y Sistemas, S.A.
- Siemens Rail Automation, S.A.U.
- Tecnival, S.A.
- Teldat, S.A.
- Telice, S.A.
- Vicomtech

ROLLING STOCK MANUFACTURERS

High Speed trains (over than 250km/H) M.R para tráfico de pasajeros alta velocidad (más de 250km/H)

- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Zeleros

Long distance and regional passengers trains (up to 250km/H)

- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Stadler Rail Valencia, S.A.U.

Urban and suburban trains

- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Stadler Rail Valencia, S.A.U.

Freight wagons and Locomotives

- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Stadler Rail Valencia, S.A.U.
- Talleres Alegría, S.A.
- Zeleros

Vehicles for infrastructure maintenance

- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Talleres Alegría, S.A.

MANUFACTURERS OF VEHICLE COMPONENTS, AUXILIARY EQUIPMENT AND SYSTEMS

Traction and propulsion components

- Aimen Centro Tecnológico
- Alstom Transporte, S.A.
- Ariño Douglass, S.A..
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Asea Brown Boveri, S.A.
- Caf Power & Automation, S.L.U.
- Flexix, S.A.
- Forging Steel Products, S.L.
- HaslerRail (Secheron Hasler Group)
- Ingeniería Viesca, S.L.
- Ingeteam Power Technology, S.A.
- Mgn Transformaciones del Caucho, S.A.
- Siemens Rail Automation, S.A.U.
- Trafag España, S.L.
- Zeleros

Control, auxiliary and diagnostic systems

- Aimen Centro Tecnológico

MEMBERS DIRECTORY

- Alstom Transporte, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Asea Brown Boveri, S.A.
- Barbara IoT, S.L.
- Caf Power & Automation, S.L.U.
- CEIT
- Enclavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- Faiveley Transport Iberica (Wabtec Corporation)
- Gmv Sistemas, S.A.U.
- HaslerRail (Secheron Hasler Group)
- Hispacold S.A.
- Ibérica Tecnología en Sistemas de Seguridad Ferroviarios, S.L. (ITSS)
- Indra Sistemas, S.A.
- Ingeniería Viesca, S.L.
- Ingeteam Power Technology, S.A.
- NGRT, S.L.
- NRF España, S.A.
- Stadler Rail Valencia, S.A.U.
- Teldat, S.A.
- Trafag España, S.L.
- Zeleros

Assembly equipment

- Agui, S.A.
- Aimen Centro Tecnológico
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Asea Brown Boveri, S.A.
- Barbara IoT, S.L.
- Danobat, S. COOP.
- Faiveley Transport Iberica (Wabtec Corporation)
- Forging Steel Products, S.L.
- Fundiciones del Estanda, S.A.
- Funor, S.A.
- Gurutzpe Turning Solutions S.L.
- Trafag España, S.L.

Mechanical components

- Agui, S.A.
- Alstom Transporte, S.A.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Faiveley Transport Iberica (Wabtec Corporation)
- Flexix, S.A.
- Forging Steel Products, S.L.
- Funor, S.A.
- Fundiciones del Estanda, S.A.
- Hispacold, S.A.
- Metalocauchos, S.L.
- Mgn Transformaciones del Caucho, S.A.
- Stadler Rail Valencia, S.A.U.
- Talleres Alegría, S.A.
- Trafag España, S.L.
- ULMA Forja S. Coop.
- Vogelsang, S.L.U.
- Zeleros

Interiors

- Agui, S.A.
- Ariño Duglass, S.A.
- Colway Ferroviaria, S.L.
- Ekide, S.L.
- Flexix, S.A.
- Hexis Graphics España
- Satys Interiors Railway Spain, S.A.
- Screensor Tech
- Trafag España, S.L.

Safety

- Agui, S.A.
- Alstom Transporte, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Barbara IoT, S.L.
- Dsaf - Dinamicas de Seguridad, S.L.

- Enclavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- Faiveley Transport Iberica (Wabtec Corporation)
- HaslerRail (Secheron Hasler Group)
- Hexis Graphics España
- Indra Sistemas, S.A.
- Luznor Desarrollos Electrónicos, S.L.
- Trafag España, S.L.

MAINTENANCE: EQUIPMENT,
MAINTENANCE SERVICES AND
REFURBISHMENTInfrastructure and superstructure
maintenance

- Aimen Centro Tecnológico
- Alstom Transporte, S.A.
- Amurrio Ferrocarril y Equipos, S.A.
- Azvi, S.A.
- Barbara IoT, S.L.
- Caf Turnkey & Engineering, S.L.
- Caucho Industrial Verdú, S.L.
- CEIT
- Comsa Corporación
- Create Human Resources
- Elecnor SyP
- ICF - Ingeniería y Control Ferroviario
- Imathia Construcción, S.L.
- Mainrail, S.L.
- Mieres Rail, S.A.
- Inse Rail, S.L.
- Job Impulse España
- Ladicim
- Smart Motors
- Trafag España, S.L.
- Uretek Soluciones Innovadoras, S.L.U.

Rolling Stock maintenance

- Aimen Centro Tecnológico
- Alstom Transporte, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Azvi, S.A.
- Barbara IoT, S.L.
- Caf - Construcciones y Auxiliar de Ferrocarriles, S.A.
- Caf Turnkey & Engineering, S.L.
- Comsa Corporación
- Create Human Resources
- Gurutzpe Turning Solutions S.L.
- Grupo Trigo
- Hexis Graphics España
- Hispacold, S.A.
- Job Impulse España
- Patentes Talgo, S.L.
- Siemens Rail Automation, S.A.U.
- Stadler Rail Valencia, S.A.U.
- Talleres Alegría, S.A.
- Talleres Zitrón
- Vogelsang, S.L.U.
- Trafag España, S.L.

Maintenance of traffic control and
signalling, communications, passenger
information and ticketing systems

- Aimen Centro Tecnológico
- Alstom Transporte, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Azvi, S.A.
- Barbara IoT, S.L.
- Caf Signalling, S.L.
- Caf Turnkey & Engineering, S.L.
- Dsaf-Dinámicas de Seguridad, S.L.
- Electrans, S.A.
- Elecnor Deimos

- Elecnor SyP
- Gmv Sistemas, S.A.U.
- ICF - Ingeniería y Control Ferroviario
- Ibérica Tecnología en Sistemas de Seguridad Ferroviarios, S.L. (ITSS)
- Ikusi, S.L.U.
- Indra Sistemas, S.A.
- Inse Rail, S.L.
- Job Impulse España
- Luznor Desarrollos Electrónicos, S.L.
- Patentes Talgo, S.L.
- Salicru, S.A.
- Screensor Tech
- Sice Tecnología y Sistemas, S.A.
- Siemens Rail Automation, S.A.U.
- Smart Motors
- Telice, S.A.
- voestalpine Railway Systems JEZ, S.L.
- Vogelsang, S.L.U.

Maintenance of traffic control and
signalling, communications, passenger
information and ticketing systems

- Aimen Centro Tecnológico
- Alstom Transporte, S.A.
- Artech (Electrotécnica Artech Smart Grid, S.L.)
- Barbara IoT, S.L.
- Caf-Construcciones y Auxiliar de Ferrocarriles, S.A.
- Caf Power & Automation, S.L.U.
- Caf Turnkey & Engineering, S.L.
- Enclavamientos y Señalización Ferroviaria ENYSE, S.A.U.
- Faiveley Transport Iberica (Wabtec Corporation)
- Gmv Sistemas, S.A.U.
- Géminis Lathes
- Grupo Trigo
- HaslerRail (Secheron Hasler Group)
- Hexis Graphics España
- Hispacold, S.A.
- ICF - Ingeniería y Control Ferroviario
- Indra Sistemas, S.A.
- Ingeteam Power Technology, S.A.
- Job Impulse España
- Mgn Transformaciones del Caucho, S.A.
- NGRT, S.L.
- NRF España, S.A.
- Patentes Talgo, S.L.
- Satys Interiors Railway Spain, S.A.
- Screensor Tech
- Sice Tecnología y Sistemas
- Smart Motors
- Stadler Rail Valencia, S.A.U.
- Trafag España, S.L.
- Vogelsang, S.L.U.

Maintenance of systems, equipment
and vehicles components

- Aimen Centro Tecnológico
- Air Rail
- Alstom Transporte, S.A.
- Aquafirsch, S.L.
- Danobat, S. COOP.
- Electrans, S.A.
- Faiveley Transport Iberica (Wabtec Corporation)
- ICF - Ingeniería y Control Ferroviario
- Ingeniería Viesca, S.L.
- Mosdorfer Upresa Rail, S.A.U.
- Newtek Solidos, S.L.
- Patentes Talgo, S.L.
- Tecnival, S.A.
- Trafag
- Vogelsang, S.L.U.



ASEA BROWN BOVERI, S.A.

Rail is being rediscovered as a sustainable and energy-efficient form of transport. We understand the importance and implications of running these railway networks.

We provide complete solutions that protect your infrastructure, and meet the expectations of users and transport stakeholders for all key applications. These include infrastructure, passenger stations, control and signaling units, tunnels and rolling stock.

📍 C/ SAN ROMUALDO, 13 - 28037 (MADRID)

☎ +34 915 81 93 93



✉ contact.center@es.abb.com



🌐 new.abb.com/railway/abb-solutions-for-transportation-rail-and-infrastructure



AIMEN CENTRO TECNOLÓGICO

We are an innovation & technology Centre specialized in materials and in advanced manufacturing technologies, especially joining technologies and laser technologies applied to materials processing and robotics. We develop R&D&I in collaboration with companies in the field of the technologies for industry 4.0, and we offer technological services to industry in the field of welding and corrosion engineering, manufacturing engineering, design and simulation and mechatronics; developing customized and integral technological solutions which respond to the needs of our clients and associated companies. Our accredited laboratories provide analysis and testing services, especially failure analysis and in-service behavior of industrial components.

📍 C/ Relva 27 A - Torneiros | 36410 O Porriño (PONTEVEDRA)

☎ +34 662 489 181



✉ aimen@aimen.es



🌐 www.aimen.es



ACYGS SALES MANAGEMENT, S.L.

ACYGS is an engineering services consulting company dedicated exclusively to the railway sector and specialized in all the consulting and engineering services associated with a rolling stock maintenance workshop. We offer a personalized railway engineering service for each client, adapting to the needs of each workshop and project, developing its activity at an international level carrying out projects in the 5 continents, providing global solutions backed by the experience of more than 20 years in the rolling stock maintenance sector of the professionals who are part of Acygs.

📍 C/ Loeches , 65 - Oficina 7 Madrid (MADRID)

☎ +34 914 85 52 88



✉ jleon@acygs.com



🌐 www.acygs.com



AIR RAIL

AIR RAIL is a company specialised in the manufacture and distribution of machinery, working in the airport and railway sector. Within the railway industry, its activity is divided between the manufacture of its own products and the distribution of important brands in the sector. In terms of manufacturing, AIR RAIL specialises in railway washing systems, bogie washing cabins, water treatment units and blowing booths, among others. In its distribution activities, it represents Zephir shunters, IME Autolift lifting systems and SAMS re-railing equipment.

📍 C/ Alsasua 16, 1º Izda. 28023, Madrid, España

☎ +34 913 234 629



✉ mmartinez@air-rail.org



🌐 www.air-rail.org



AGUI, S.A.

AGUI is a B2B subcontractor expert in the manufacturing of electro-mechanical assemblies for OEMs. We collaborate with the client in the design of the product, contributing with our knowledge in process engineering and welding, and once the product is defined, we industrialize and manufacture it according to the takt time. AGUI is certified in ISO-3834 and EN-15085, which positions us as a reference supplier for welded assemblies.

📍 Pol. Ind. Lintzirin-Gaina. Parcela B-1. 20180 Oiartzun - (GIPUZKOA)

☎ +34 943 335 811 / 663 775 753



✉ +34 943 552 066



✉ sac@agui.com



🌐 www.agui.com



ALSTOM SPAIN

As a promoter of sustainable mobility, Alstom offers a complete range of solutions (from high-speed trains to metros, tramways and e-buses), passenger solutions, customized services (maintenance, modernization), infrastructure, signalling and digital mobility solutions. The company recorded sales of €8,2 billion in the 2017/18 fiscal year. Alstom is present in over 60 countries and employs 38,900 people. In Spain Alstom employs around 2,000 people on 18 sites, including a rolling stock manufacturing site and 4 innovation centres where it runs R&D programmes for rolling stock and railway signalling, safety, security, digital mobility and services.

📍 Martinez Villergas, 49 - Edificio V - 28027 Madrid (MADRID)

☎ +34 91 334 58 00



✉ +34 91 334 58 01



✉ www.alstom.com



AMURRIO FERROCARRIL Y EQUIPOS, S.A.

Design, production, installation of turnouts, track devices, crossings. For all type of purpose. Metro, tram, regional, conventional, high speed, heavy haul, ports and industrial.

Maskuribai, 10 01470 Amurrio (ARABA/ÁLAVA)
+34 945 891 600
+34 945 892 480
comercial@amufer.es
www.amufer.es



APPLUS+ LABORATORIES

Applus+ Laboratories a division of the Applus+ Group, provides testing, certification and development engineering services for a wide range of industries. In the railway sector, Applus+ Laboratories conducts operational stress measurements; electromagnetic compatibility (EMC) testing; environmental testing for onboard electronic components; the characterization of rolling stock; and fire reaction and resistance testing.

From bogies, complete railcars and onboard electronics; to seats and bulkheads, they provide support to ensure that all railway components meet the highest quality and safety standards.

Campus UAB- Ronda de la Font del Carme s/n 08193 Bellaterra (BARCELONA)
+34 93 567 20 00
info@appluslaboratories.com
www.appluslaboratories.com



AQUAFRISCH, S.L.

More than 25 years of experience in the railway sector endorse Aquafrisch as a manufacturer of train washing systems, bogies washing cabins, WC extraction systems (CET) and other products for the maintenance of rolling stock in railway workshops.

Our equipment is installed in more than 30 countries on 5 continents. Aquafrisch is also a leader in industrial water treatment and purification. Aquafrisch takes care of the design, manufacture, installation, commissioning, training and maintenance of the machines according to the customer's needs. Aquafrisch is certified ISO9001:2015, ISO14001:2015 and ISO 45001:2018.

Margarita Salas 7, 28521 Rivas-Vaciamadrid (MADRID)
+34 91 380 03 33
+34 91 7780 60 02
aquafrisch@aquafrisch.com
www.aquafrisch.com



ARTECHE

The Arteche Group is focused on offering equipment and solutions for the electricity and railway business worldwide. The expertise of more than 70 years manufacturing instrument transformers and electromechanical relays gives the client the assurance of a technological leader. With projects over more than 40 countries, our dedicated range of railway relays are designed to meet the highest standard requirements of the sector and its reliability and durability allow them to be used not only as general purpose relays, but also in all kind of safety functions, both for on-board and signalling applications making them suitable to be used in circuits requiring up to SIL-4 safety integrity level.

Derio Bidea, 28 48100 Mungia (BIZKAIA)
+34 946 011 200
+34 946 155 628
marketing@arteche.com
www.arteche.com



AZVI

Azvi is the company which undertakes construction within Grupo Azvi. For over 100 years, Azvi has carried out a significant number of large scale civil engineering and building projects. Azvi has extended its activity to all construction areas in Europe, America and the Middle East, without losing sight of its origins and railway background. By applying principles of responsibility to the whole business sphere, seeking the creation of value, maintaining a strong commitment to all its stakeholders in all countries where it is present and investing in R&D Azvi continues constructing a company capable of facing the new challenges of an increasingly globalised market.

Almendralejo, 5. 41019 (SEVILLA) / Maudes, 51, 2º. 28003 (MADRID)
+34 954 999 320 / +34 91 553 28 00
+34 926 88 47 06
azvicentro@azvi.es
www.azvi.es



BARBARA

Barbara is the Cybersecure Industrial Edge Platform, designed to implement automated decision-making within critical industrial processes. It connects, deploys and orchestrates AI and ML based applications at the Edge.

Barbara's architecture, distributed across thousands of computing nodes, allows companies to communicate and virtualize any industrial element and then operate it through real-time Artificial Intelligence applications. Developed with cybersecurity by design, is compatible with Edge applications to optimise industrial processes and asset management, it is the perfect enabler to address the industry's biggest challenges and accelerate industrial intelligence.

Calle Vivero 5 - 28040 Madrid (MADRID)
+34 910 74 03 11
info@barbaraiot.com sergio.liedo@barbaraiot.com
www.barbaraiot.com



ARCELOMITTAL

ArcelorMittal, as the steel industry leader in product and process innovation, is fully geared to meet the future requirements of the rail industry. With rail production facilities in Spain, Poland, Luxembourg and USA offers a wide portfolio of rails for subways, trains, trams, light rails, crane rails, crossings and rail accessories. We area specialist in rail for high-speed net, with over 1 million tons produced, and presence in infrastructure of over 30 countries, the high technologic quality allows participating in the more demanding tenders all over the world. ArcelorMittal has its own R&D Rail Excellence Centre for developing new products and processes.

ArcelorMittal. Edif. de Energías, 2 pl. 33691 Gijón (ASTURIAS)
+34 985 187 750
rails.specialsections@arcelormittal.com
https://rails.arcelormittal.com/



ARCELOMITTAL

ArcelorMittal, as the steel industry leader in product and process innovation, is fully geared to meet the future requirements of the rail industry. With rail production facilities in Spain, Poland, Luxembourg and USA offers a wide portfolio of rails for subways, trains, trams, light rails, crane rails, crossings and rail accessories. We area specialist in rail for high-speed net, with over 1 million tons produced, and presence in infrastructure of over 30 countries, the high technologic quality allows participating in the more demanding tenders all over the world. ArcelorMittal has its own R&D Rail Excellence Centre for developing new products and processes.

Avda. Europa, 34 28023 Madrid (MADRID)
+34 91 799 45 00
+34 91 799 45 01
madrid@ardanuy.com
www.ardanuy.com



ARIÑO DUGLASS, S.A.

50 years' experience behind us as a company specialised in glass for architecture and railway. An extensive presence in the Spanish, European and world markets has enabled us to obtain the knowledge and know-how in order to offer the most technologically advanced products of high quality.

It is in our DNA to continuously research and develop technology that allows us to adopt the very latest manufacturing methods, resulting in business excellence and ongoing innovations. In partnership with a number of organisations and institutions, we collaborate, cooperate and lead different research projects.

Pol. Ind. Royales Bajos, S/N, 50171 La Puebla de Alfindén (ZARAGOZA)
+34 634 860 681
+34 976 455 085
felix.fernandez@duglass.com
www.duglass.com



BUREAU VERITAS INSPECCIÓN Y TESTING (GRUPO BUREAU VERITAS)

BUREAU VERITAS INSPECCIÓN Y TESTING is a Bureau Veritas company based in Madrid, Spain. BUREAU VERITAS INSPECCIÓN Y TESTING is a world leader in conformity assessment services as Notified Body (NoBo) and Designated Body (DeBo), as well as Inspection Body to perform Independent Safety Assessment (ISA) and Risk Assessment (AsBo).

Bureau Veritas has an extensive experience in the rail sector, with presence in more than 140 countries, more than 75,000 employees worldwide, and a network of 1400 offices and laboratories. Bureau Veritas is in a unique position to offer a global solution to its customers in the railway sector.

C/Valportillo Primera 22-24, 28108 Alcobendas (MADRID)
+34 91 270 22 00
infoesp@bureauveritas.com
https://www.bureauveritas.es/nuestros-mercados/automocion-y-transporte/ferroviario



CABLES DE COMUNICACIONES ZARAGOZA, S.L.

Cables de Comunicaciones is one of the main European companies dedicated to the design, manufacturing and commercialisation of telecommunication, signalling and optic fibre cables. Ever since its foundation in 1971, it has contributed to the development and extent of the telecommunications infrastructures. Railway companies from the main European countries entrust us with the manufacture of their cables. Among them, they stand out: Adif, SNCF, NetworkRail, Infrabel etc. Cablescom undertakes its activity in Zaragoza, in the Malpica industrial park, over a surface of 77,000 m2, which includes a production plant, offices and warehouses.

Polígono de Malpica, C/D, 83 50016 Zaragoza (ZARAGOZA)
+34 976 729 900
j.alzorriz@cablescom.com
www.cablescom.com



CAF - CONSTRUCCIONES Y AUXILIAR DE FERROCARRILES, S.A.

CAF is one of the world leaders in the design and implementation of comprehensive transit systems. CAF provides comprehensive project and engineering management throughout all stages of the project including feasibility analysis and investigations, system design, civil work, signalling, electrification and other electromechanical systems, rolling stock supply and system operation and maintenance.

In terms of rolling stock, CAF supplies and maintains high speed trains, regional and commuter trains, locomotives, metro units, tramways and buses.

J.M. Iturrioz, 26 20200 Beasain (GIPUZKOA)
+34 943 880 100
+34 943 881 420
caf@caf.net
www.caf.net



CAF POWER & AUTOMATION

CAF Power & Automation designs and develops electric traction systems, energy storage systems and control & communication, which guarantee adaptable reliable and committed solutions with transport. Our systems are modular and flexible and can be integrated both in new vehicles and in those in service or that need refurbishment. Traction systems; Energy Storage (GREENTECH) and Control & Communication (COSMOS). Railway systems modernisation and refurbishment: Equipment and components, system integration, installation, maintenance and guarantee. Railway system maintenance: Technical support, spare parts, training courses, test benches.

🚩 Mikeletegi, 58 - 2, Parque Tecnológico de San Sebastián (GIPUZKOA)
 ☎ +34 943 309 251
 📧 info@cafpower.com
 🌐 www.cafpower.com



CAF SIGNALLING, S.L

CAF Signalling, the technological subsidiary of the CAF Group, designs and provides Integral Signalling Solutions, both in Spain and abroad. The company has its own advanced technology products, both for on-board and wayside applications that make up the core of its integral solutions. As a result of a significant and growing effort in R&D&I, particularly in the area of critical safety systems, CAF Signalling promotes continuous innovation and customer focus. CAF Signalling, boasts the Company's own in house engineering and expertise to take on "turn-key" railway signalling projects.

🚩 Avda. de la Industria, 51 28108 Alcobendas (MADRID)
 ☎ +34 91 789 27 50
 ☎ +34 91 661 37 51
 📧 cabsignalling@cafsignalling.com
 🌐 www.cabsignalling.com



CAF TURNKEY & ENGINEERING

CAF Turnkey & Engineering was created in 2007 with its head office in the Technological and Scientific Park of Biscay (Zamudio). It began its business in Integrated Engineering of Transport Services and in 2015, after merging with the company CMFS (Mexico), it increased its portfolio of services with the inclusion of EPC projects for both civil works and subsystems. Following solid and constant growth, the company currently has a workforce of 200 with offices in Zamudio, Madrid and Mexico, providing service to both companies within the CAF Group and national and international private and

🚩 Parque Científico y Tecnológico de Bizkaia, Laida Bidea, Ed. 205. 48170 Zamudio (BIZKAIA)
 ☎ 0034946819550
 ☎ +34 94 623 29 29
 📧 info@cafte.com
 🌐 www.cafte.com



CELLNEX TELECOM, S.A.

Cellnex manages a portfolio of more than 130,000 sites – including forecast roll-outs up to 2030 – in Spain, Italy, the Netherlands, France, Switzerland, the United Kingdom, Ireland, Portugal, Austria, Denmark, Sweden and Poland. Cellnex's business is structured in four major areas: telecommunications infrastructure services; audio-visual broadcasting networks, security and emergency service networks and solutions for smart urban infrastructure and services management (Smart cities and the "Internet of Things" [IoT]).

🚩 Passeig de la Zona Franca, 105, 08038 Barcelona (BARCELONA)
 ☎ +34 935 03 10 00
 📧 global.bids@cellnextelecom.com
 🌐 www.cellnextelecom.com



CENTUM DIGITAL

CENTUM is a Spanish technology company specialized in Communications, Control and Signal Intelligence, created in 2005, with an international presence (Germany), whose main activity is the design, development and commercialization of products and services for different sectors. In the most demanding environments, such as Aeronautical, Naval and Railway, we offer services and carry out projects mainly oriented towards Certification, Systems Integration (including critical and non-critical SW development), HW/SW Assurance and Cybersecurity processes. We also offer digital solutions for the Identification, Geolocation and Tracking of assets in the Smart Factory.

🚩 Avda.rita Levi Montalcini, 3, 28906 Getafe (MADRID)
 ☎ +34 914 918 171
 📧 info@centum.com
 🌐 https://centum.com/



CERTIFER BELGORAIL SA SUCURSAL EN ESPAÑA

Certifer Belgorail SA is a certification, inspection and safety evaluation entity for the guided transport sector, both conventional railways and subways and trams. We are an accredited body for the certification of interoperability (NoBo), national regulations (DeBo), safety evaluations under CENELEC standards (ISA) and under CE Regulations (AsBo). We are part of the Certifer Group, with a presence, in addition to Spain, in Belgium, France, the Netherlands, Germany, Austria, Italy, Sweden, Turkey, Algeria, Brazil, Australia, Vietnam, the United Arab Emirates and China.

🚩 Pº de la Castellana, 127 M 2 º A 28046 Madrid (MADRID)
 ☎ +34 91 764 72 21 / 626 683 435
 ☎ +34 91 770 88 67
 📧 info.spain@certifer.eu
 🌐 www.certifer.eu



CALMELL, S.A.

The Calmell Group is the leader in access control and identification, through its companies Calmell S.A., Affix S.L., Idoneum S.A., which are respectively engaged in producing the supports (tickets, cards, ...), developing specific software and hardware, personalization and security.

In the public transport sector it works for integrators and operators supplying any kind of support for ticketing and reader/writer systems.

With a strong international presence through its network of representatives and distributors, the Calmell Group is able to satisfy your needs on a global level.

🚩 Pol. Ind. Pla d'en Coll C/ Fresser, 12 C 08110 Montcada i Reixac (BARCELONA)
 ☎ +34 93 564 14 00
 📧 dsala@calmell.net
 🌐 www.calmell.net



CAUCHO INDUSTRIAL VERDÚ, S.L.

Caucho Industrial Verdú is a company with more than 50 years of experience in the rubber market. We produce a wide range of products in rubber and rubber-metal, and we are focused in the infrastructure sector. We design and manufacture elastomeric bearings, pot bearings and expansion joints for bridges and other structures. In addition, we manufacture resilient elements for railway applications, as underballast mats (UBM), slab track mats (STM) and undersleeper pads (USP). All these products are manufactures using recycled rubber (90%) from used tyres. Our technical staff can design and advice about the best solution for the client's needs, always based on the standards EN, DIN, ASSHT

🚩 Fila Benimerins, 32, Alcoy (ALICANTE)
 ☎ +34 965 520 950
 📧 miguel.belda@gruposolidad.net
 🌐 www.cauchoverdu.com



CEIT

We are a basque Technology Center founded by the University of Navarra, whose main objective is to develop applied R+D+i projects with companies to improve their competitiveness. We are part of BRTA (Basque Research & Technology Alliance), which includes 16 agents that constitute the Basque Network of Science, Technology and Innovation (RVCTI). We also participate in Shift2Rail Joint Undertaking as associated members. We focus our R+D+i activity within the railway sector in the following topics: energy efficiency, maintenance, railway dynamics, component design and characterisation, embedded systems (SIL4), positioning, data intelligence.

🚩 Paseo Manuel Lardizábal 15, 200018 Donostia-San Sebastián (GIPUZKOA)
 ☎ +34 943 212 800
 ☎ +34 943 213 076
 📧 ualvarado@ceit.es
 🌐 www.ceit.es



CETEST, S.L. Centro de Ensayos y Análisis

Fully accredited ISO17025, CETEST is an experienced laboratory in railway vehicles and components testing. Its offering covers a wide variety of component test benches at their facilities as well as portable ones. CETEST provides a global on-track measurement deployment capacity. From validation and verification test in the development phase to product homologation and failure detection / root cause analysis in the after-sales operation, CETEST can assist you during the full lifecycle of your product. Their customers include passenger, freight and special track maintenance vehicle manufacturers, component suppliers, as well as Notified Bodies, engineering firms and authorities.

🚩 Lazkaibar, s/n Edif. CETEST 20200 Beasain (GIPUZKOA)
 ☎ +34 943 028 690
 📧 emartinez@cetestgroup.com
 🌐 www.cetestgroup.com



CITEF (FUNDACIÓN PARA EL FOMENTO DE LA INNOVACION INDUSTRIAL)

CITEF (Railway Technology Research Centre) was created in 1997 as part of F2I2 (the Foundation for the Development of Industrial Innovation) for research, innovation, experimentation, study and teaching purposes within the railway knowledge area. It is a non-profit organisation pursuing aims of general interest within any rail transport technology sector.

🚩 José Gutierrez Abascal, 2, 28006 Madrid (MADRID)
 ☎ +34 91 336 32 12
 📧 citef@etsii.upm.es
 🌐 www.citef.es



COLWAY FERROVIARIA, S.L.

COLWAY FERROVIARIA S.L., a company belonging to the COLWAY Group, is specialized in the design, engineering, manufacture, installation and commissioning of turnkey railway interiors and toilet modules projects. Revamping of seats and floors for a significant improvement of the coaches, with a controlled investment, is included among its capabilities. Through the integrated management of modular supplies & systems, based on experience, research and innovation, satisfaction and expectations of railway constructors and Public Administrations are achieved. Its work is based on the application of strong values: commitment, professionalism, ethics and agility.

🚩 Botánica, 149-151, 08908, Hospitalet de Llobregat (BARCELONA)
 ☎ +34 93 414 65 12
 ☎ +34 93 639 86 10
 📧 jlperalta@colway-08.com
 🌐 http://colway-08.com/site/es

**COMSA**

COMSA is the company of COMSA Corporación specialised in railway infrastructures. Founded in 1891, the company provides a comprehensive service in the field of construction, maintenance, electrification and control and communication systems for high-speed and conventional lines, metros and tramways. In this business activity, it is leader in Spain, where has been involved in the carrying out of all high-speed lines, and has permanent operations in Argentina, Brazil, Croatia, Denmark, Mexico, Poland, Portugal and Uruguay. It has also taken part in a large number of projects in other markets such as Italy, the Philippines, Taiwan, Malaysia, India, etc.

🚩 Julián Camarillo, 6A 2ª planta
28037 Madrid (MADRID)
☎ +34 91 353 21 20
☎ +34 91 350 49 54
✉ jalvarez@comsa.com
🌐 www.comsa.com

**CREATE HUMAN RESOURCES**

Railway and business training consultant, approved since 2009 by the State Agency for Railway Safety (AESF) of the Ministry of Development to provide the necessary training to obtain and maintain the different qualifications of railway personnel, as well as all kinds of technical training and specific to the railway sector.

🚩 C/ Astronomia 1, torre 3, plata 9
ofic 7-8 Sevilla (SEVILLA)
☎ +34 650 711 407 / +34 697 497 404
☎
✉ araigon@createhr.es / pnavarro@createhr.es
🌐 www.createhr.es

**CUNEXT COPPER INDUSTRIES**

Cunext in the way to continuous development has created the entire cable product range for overhead line electrification adapting at any speed from local transport to high speed line. Our modern technology together with a wide experience at cable and alloy manufacturing makes us the best partner for railway companies offering best product quality and service. Cunext Group locate production plants at strategic places such as Cordoba for copper products, Vitoria and Brescia for aluminium products.

🚩 Av. de la Fábrica, s/n
14005 Córdoba (CÓRDOBA)
☎ +34 957 499 300
☎
✉ josep_anfruns@cunext.com
🌐 www.cunext.com

**ENCLAVAMIENTOS Y SEÑALIZACIÓN FERROVIARIA ENYSE, S.A.U.**

Enyse is a Signalling company belonging to the Industrial Services division of the ACS group. For Enyse, the success of their projects is based on a high level of adaptation to functional and operational needs of the various railways - flexibility is the key word. In an industry increasingly integrating technology standards, the required Reliability, Availability, Maintainability and Safety standards not only apply to system design level, but are the actual premises to properly implementing and commissioning turn-key Signalling projects.

🚩 Valportillo Segunda, 8 bis ; 28108
Alcobendas (MADRID)
☎ +34 91 490 13 83
☎ +34 916 619 296
✉ enyse@enyse.com
🌐 www.enyse.com

**ELECNR DEIMOS**

Elecnr Deimos is the technological subsidiary of the Elecnr Group that operates in the railway transportation sector, information and telecommunications systems, space, aeronautics and defense. In the railway sector, Elecnr Deimos is responsible for the development and evolution of passenger information platforms and remote station management. In addition, the company is specialised in delivering comprehensive turnkey projects as well as the development, implementation, and maintenance of these systems.

🚩 Ronda de Poniente 19, Edificio Fiteni
VI, Tres Cantos (MADRID)
☎ +34 918 06 34 50
☎ +34 918 06 34 51
✉ tra.all.deimos@elecnr.es
🌐 <https://elecnr-deimos.com>

**ELECNR SYP**

Elecnr has become one of the most outstanding European business groups and a benchmark in the infrastructure sectors, with more than 60 years of continuous growth (25,000 employees and 3,5 billion Euros turn over) and presence in 55 countries. Elecnr promotes, develops and constructs all manner of infrastructure on all continents including concessional projects. Elecnr Group's long experience in the railway sector enables it to engage in turnkey projects for electrification, signal and interlocking systems, communications, and control systems. Elecnr has been involved during 30 years in the development of electrification railway projects as a technologist providing solutions to industry.

🚩 C/ Arturo Soria 343 28033 (MADRID)
☎ +34 91 453 28 46
☎
✉ cgmengual@elecnor.com
🌐 www.elecnor.com

**DANOBAT S.COOP.**

Specialised Machine Tools and production systems for railway industry offering technologically advanced solutions and services, including among others engineering, consultancy, which are fully adapted to clients' needs.

DANOBAT focuses its activity in the supply of turnkey solutions for the manufacturing and maintenance of railways rolling stock, incorporating own leading technology products, together with those manufactured by specialised companies.

🚩 Arriaga Kalea, 21 20870 Elgoibar
(GIPUZKOA)
☎ +34 943 748 044
☎ +34 943 743 138
✉ danobat@danobat.com
🌐 www.railways.danobatgroup.com

**DINÁMICAS DE SEGURIDAD, S.L.**

DSAF is a entrepreneurial society focused on the safety of the movement of people at risk. Committed to the new technologies applied to the design of signaling systems, prevention and emergency in safety, DSAF promotes the development of products that guarantee the highest grade of security according to the standards of type approval current in generalized risk societies such as global ones.

The activity of DSAF focuses on these two major sectors: road / rail tunnels and wind towers.

🚩 San Blas, 13 Pol. Ind. Goian 01170
Legutiano (ARABA/ÁLAVA)
☎ +34 945 466 314
☎ +34 945 466 314
✉ info@dsaf.es
🌐 www.dsaf.es

**EKIDE**

Ekide has Ekide SC, a business unit dedicated to engineering and manufacturing of assemblies or subassemblies of parts based on different manufacturing processes for the railroad sector. The activity of this business unit is developed in the following areas: Engineering (Conceptual design + Product development), Mock-ups and prototypes (with a wide range of manufacturing and prototyping processes to check aesthetic and functional aspects prior to mass production), rapid tooling, for the manufacture of prototype injection molds and manufacturing (SMC, infusion, etc.)

🚩 Valpo
☎
☎
✉
🌐

**ELECTROSISTEMAS BACH, S.A.**

Electrans, established in Barcelona in 1977, has had a successful career path that turn it in an international relevant supplier in signalling, particularly in the field of level crossing protection solutions, railway and tramway signalling, detection systems and LED lighting, obtaining its products and solutions worldwide recognition.

Electrans' constant progress is motivated by the commitment to innovation, at the service of the adaptability of systems and products for the current needs of railway projects.

🚩 Calle de la Mar Mediterrània, 9 Pol.
Ind. La Torre del Rector 08130 Santa
Perpètua de Mogoda (BARCELONA)
☎ +34 93 574 74 40
✉ jmyera@electrans.es
🌐 www.electrans.es

**FAIVELEY TRANSPORT IBERICA**

Faiveley Transport Iberica, as member of Wabtec Corporation offers the complete portfolio of products of the Corporation in Spain and Portugal, as well as all service activities related. Design, manufacturing, repair and maintenance of rolling stock systems. Braking Systems, Access Doors, Platform Screen Doors, HVAC, PIS/CCTV, Power Collection, Sanitaires, Event Recorders, Beacon Readers, Relays. With Headquarters in La Selva del Camp (TARRAGONA), offices in Madrid and service centers in Madrid, Barcelona, Valencia, Seville, Beasain and Lisbon.

🚩 Pol. Ind. La Drecera, C. Mecànica 23,
43470 La Selva del Camp (TARRAGONA)
☎ +34 977 01 10 00
☎
✉ jon.amutxastegi@wabtec.com
🌐 <https://www.wabteccorp.com>

**FLEXIX, S.A.**

FLEXIX, develops, manufactures worldwide since 1950 INJECTION and EXTRUSION RUBBER PARTS, rubber-metal, rubber-plastic, special elastomers and assemblies. We are part of the KÄCHEL-FLEXIX Group, with 2 plants in Germany, 1 in Spain and a warehouse in USA. For the RAILWAY SECTOR we produce mainly for infrastructures, absorption of vibrations under track, tie pads for sleepers, different range of stiffness (14-152 kN/mm). We provide development in geometries (FEM), materials, (conductivity, non-harmful gases...) TYPE OF PARTS: Pads, Ducts, bellows, tubes, silentblocks, joints, bumpers, axles, links, valves, bearings. MIXTURES: NR, SBR, EPDM, CR, H/ NBR, ECO, AEM, ACM, Silicone, FPM.

🚩 Pol. Ind. Pinoa 1-D 48170 Arteaga-San
Martín Zamudio (BIZKAIA)
☎ +34 944 977 180
☎ +34 944 977 190
✉ flexix@flexix.com
🌐 www.flexix.com



FORGING STEEL PRODUCTS, S.L.

Manufacturing of machined and if needed painted forged components ready for assembly destined to the railway rolling stock manufacturers for chassis, brakes, clutches, hooks etc.

Barrio Arregui s/n 48340 Amorebieta-Etxano (BIZKAIA)

+34 946 300 211



k.zabala@forgingsteelproducts.com

www.forgingsteelproducts.com



FUNDICIONES DEL ESTANDA, S.A.

Since 1957 Estanda has been providing various sectors with steel castings. The half of all its activity is focused on the high-speed train brake discs manufacturing, being one of the first worldwide manufacturers, the other half is focused on a wide range of sectors such as the cement and mining industry, defence, off-shore, automotive industry, and bogie components for the railway equipment. Mostly low alloy steels, wear resistant steels, refractory steels, stainless steels and white irons are casted. With its 14.000 tonnes per year production capacity, Estanda manufactures from 10 to 2000 kgr. parts in all kinds of batch sizes, with 2.400 mm as its maximum part dimension.

Antizar, 17 20200 Beasain (GIPUZKOA)

+34 943 880 500

+34 943 889 587

lfdiego@estanda.com

www.estanda.com



FUNORSA

Funorsa is a Steel casting foundry with more than 20 years in the railway sector. We are specialized in pieces of high responsibility as couplers, Pivots, connection rods and different parts of the bogies. We are able to cast low alloy, alloy and inox castings up to 1.300 kg with a capacity of 2.000 Tons per year.

Condado de Treviño, 41 Pol. Villalonguejar, 09001 Burgos (BURGOS)

+34 650 665 302



comercial@funorsa.es

www.funorsa.es



GMV SISTEMAS, S.A.U.

GMV is a leading firm in the design, development, implementation and rollout of Intelligent Transportation Systems (ITS) guaranteeing compliance with the railway sector standards. Main products and services: On board units for location and communications, Fleet Management Systems, Fare Collection Systems, Passenger information systems, CCTV systems, PA & Intercom system, Systems for security reinforcement, Eco-driving systems, Software for planning and scheduling of services. Conceived for all railway modes (tram, metro, commuter train, long distance, high speed trains...)

Juan de Herrera, 17 PTB 47151 Boecillo (VALLADOLID)

+34 983 546 554

+34 983 546 553

jagg@gmv.com

www.gmv.com



HASLERRAIL (SECHERON HASLER GROUP)

Sécheron Hasler Group is a leading global supplier of electrical and electronic safety components and solutions and traction power systems for the railway industry and also provides solutions for renewable energy, DC grid, and other industrial systems. HaslerRail is the world's leading supplier of innovative On-Board Electronics, Data Acquisition and Recording, Speed Sensors and Odometry, Visualisation solutions and Speed Indicators, Energy Metering, Control, Protection and I/O, Software and data management solutions, and Cybersecurity for the railway industry. Our solutions are backed by our extensive global

Calle Calidad, 42 | P.I. Los Olivos 28906 – Getafe (MADRID)

+34 91 620 79 58



info@haslerrail.com

www.haslerrail.com/



HEXIS GRAPHICS ESPAÑA

We have been manufacturing adhesive films since 1989. More than 30 years dedicated to the manufacture of adhesive films for cutting or large format digital printing. Hexis Graphics has specialized in the manufacture of high performance cast films, both PVC and latex. It is also constantly developing new solutions for professionals in the graphics industry, signage, vehicle wrapping and textile personalization. Hexis is not only a manufacturer of self-adhesive films, but also a distributor in 8 countries, thanks to our own branches located in France, Spain, Italy, Sweden, Germany, Switzerland, FWI and Australia.

P.I. Can Terrers, Carrer de Priora Xixilona, 62, 08530 La Garriga, BARCELONA

+34 937 32 25 00

+34 931 352 171

info@haslerrail.com/ javier.jurado@hexisgroup.com

https://www.hexis-graphics.com/es/



GEMINIS LATHES, S.A.

Leaders in the development of horizontal and multiprocess lathes, and specialized in railway sector, where we are proud to support the manufacturers of trains and maintenance lines, among other agents in the value chain. We offer customized solutions with highly reliable machines for the maintenance of rolling stock. Our lathes are specialized in the machining of axles, axle-wheel set and wheels.

Lerun, 1 - 20870 Elgoibar - (GIPUZKOA)

+34 943 748 060

+34 943 744 182

sales@geminislathes.com

geminislathes.com



GURUTZPE

GURUTZPE is a company specialized in the manufacturing of high value-added heavy-duty Turnmills for machining strategic pieces in demanding industrial sectors. With over 60 years of experience, GURUTZPE provides customized and innovative manufacturing solutions on an international level.

The company specializes in maintenance and manufacturing of wheels, axles, and wheelsets for the railway sector, operating both nationally and internationally.

Pol. Ind. Q8, 20829 Itziar, (GIPUZKOA)

+34 943 19 90 80



gurutzpe@gurutzpe.com

www.gurutzpe.com



GLOBAL QUALITY ENGINEERING

TRIGO Spain is a supplier of quality services and support in the supply chain in industrial sectors. Founded in 2001, it offers quality assurance services in products, maintenance, industrial means management and metrology with more than 600 quality professionals in Spain. TRIGO GROUP is present in 25 countries with a team of more than 10,000 professionals.

TRIGO Spain exports to the railway sector good practices of high added value developed in sectors such as aerospace and automotive.

Papiro, 8-9 Parq. Ind. La Negrilla 41016 Sevilla (SEVILLA)

+34 954 526 195



antonio.peco@trigo-group.com

www.trigo-group.com



HIERROS Y CARBONES, S.A.

Since 1997 Hicasa is specialised in transformation, tailored cut, storage and distribution of railway tracks materials, all kinds of rails and railways accessories with a permanent stock of more than 3.500 MT.

In 2006 we have incorporated to our Group of companies a factory specialised in manufacturing light rails from 7 kg/m to 48 kg/m, manufacture according European and American Standard, Australian or South African together with other types of Standard (AREMA).

Our own experience allows us the optimal management of the supply chain, exporting to more than 30 countries all over the world.

Pol. de Asipo Parcelna, 48 33428 Cayes Llanera (ASTURIAS)

+34 985 260 473

+34 985 260 905

paco@hicasa.com

www.hicasa.com



ICON MULTIMEDIA, S.L.

With over 25 years of experience, we have a extensive experience in the Digital Signage sector.

Our DENEVA Digital Signage platform is specially designed for high availability environments such as Smart Cities or as a powerful and comprehensive marketing tool for 'Smart Stations', guaranteeing a reliable and safe travelers and users experience.

Av. Santiago Amón, 3. bajo. 34005. Palencia (PALENCIA)

+34 979 702 906

+34 979 702 021

comercial@iconmm.com

www.iconmm.com



IDOM CONSULTING, ENGINEERING AND ARCHITECTURE, S.A.U.

IDOM is one of the leading companies in the field of professional services in Engineering, Architecture and Consultancy. An independent company established in 1957 and it has participated in over 30.000 projects in five continents. In 25 countries with 42 offices. More than 3.500 staff possesses the expertise and experience to cover all the phases of a railway project (high speed, conventional, freight, metro, light rail, tramway, depot and workshops). From conception to commissioning and beyond and facing the challenges of an innovative, efficient and resilience Transport System. IDOM accompany the client by providing the correct technical assistance required for the decision making process.

Zarandoa, 23 48015 Bilbao (BIZKAIA)

+34 944 797 600

+34 944 761 804

cortega@idom.com

www.idom.com

**IKUSI, S.L.**

At Ikusi, we provide complex turnkey integration project design, engineering and development services both for rolling stock and for infrastructure, with the agility and flexibility required by the rail industry. We are oriented towards improving our clients' competitiveness and innovation capacities, thanks to our deep business knowledge developed during these years.. Our business focus is the design and supply of innovative technological solutions to help vehicle builders, transport operators and authorities optimize and transform their business while guaranteeing quality of service and enhancing passenger experience in terms of security, information, comfort and accessibility.

🚩 Paseo Miramón, 170 20014 San Sebastián (GIPUZKOA)
 ☎ +34 943 448 800
 ☎ +34 943 448 816
 ✉ preventa.comercial@ikusi.com
 🌐 www.ikusi.com

**IMATHIA**

IMATHIA Construcción started in the civil works sector in 2004, providing Spanish and International clients with a professional and specialized approach to construction challenges, with an special vocation for Railways. We've been involved in projects throughout the main spanish HS Corridors and lines around the world. Our expertise covers a wide range of infrastructure and superstructure construction for metro, high-speed, and conventional railway. Our most outstanding reference is the High Speed Railway line in KSA, which we currently maintain. Some of our ongoing works are the Refurbishment of the Kampala-Malaba Line for URC (Uganda) or the Fuencarral II Depot.

🚩 C/Agustín de Foxá 26, 28036 Madrid (MADRID)
 ☎ +34 915 75 46 16
 ✉ imathia@imathia.es
 🌐 www.imathia.es

**INDRA**

Indra is one of the leading global technology and consulting companies and the technological partner for core business operations of its customers world-wide. It is a world-leader in providing proprietary solutions in specific segments in Transport and Defense markets, and a leading firm in Digital Transformation Consultancy and Information Technologies in Spain and Latin America through its affiliate Minsait. Its business model is based on a comprehensive range of proprietary products, with a high-value focus and with a high innovation component. In the 2018 financial year, Indra achieved revenue of €3.104 billion, with 43,000 employees, a local presence in 46 countries and business operations in over 140 countries.

🚩 Avda. de Bruselas, 35 28108 Alcobendas (MADRID)
 ☎ +34 91 480 50 00
 ☎ +34 91 480 50 80
 ✉ www.indracompany.com
 🌐 www.indracompany.com

**INGEROP**

INGEROP T3 is an engineering and architecture company specialising in the sectors of transport, mobility and cities, infrastructure, building, energy and industry, which has been operating in Spain since the 1990s. It has offices in Madrid, Barcelona, Granada and Seville. INGEROP T3 belongs to a group of more than 2,300 employees, mostly engineers, with a presence in more than 70 countries. It is a totally private and independent company, whose capital is wholly owned by its managers and employees. The INGEROP T3 team offers a wide range of services for both public and private clients, from planning to operation and maintenance.

🚩 Calle Goya, 47, 8ª Planta 28001 Madrid (MADRID)
 ☎ +34 917 584 899
 ✉ maria.lorenzo@ingerop.es
 🌐 www.ingerop.es

**INGETEAM POWER TECHNOLOGY, S.A.**

Ingeteam is an international group specializing in power and control electronics (inverters, frequency converters, controllers and protections) and electrical engineering and automation projects. The company operates in 22 countries, with 3,900 employees. R&D is at the backbone of its business activities. In railways, the traction converters INGETRAC are based on an smart integration of proved Proved Modules, comprising all necessary elements to be fully operational, on each required application.

🚩 Pol. Parque Tecnológico, 110 48170 Zamudio (BIZKAIA)
 ☎ +34 944 039 600
 ☎ +34 944 039 837
 ✉ traction@ingetteam.com
 🌐 www.ingetteam.com

**INSE RAIL, S.L.**

Inse Rail is an engineering firm that is highly specialized in the railway industry and specifically its installations and systems. Founded in 1994, it is dedicated to engineering, consulting and project management in the railway, industrial, energy and building construction industries, carrying out its activities in the different stages of planning, design, construction and operation of investments. Inse Rail participates in the international development of the High Speed Rail and metropolitan transportation, with a strong specialization in electrification, signaling, security and communication systems, and other railway transport installations.

🚩 Avda. de Burgos, 12 7º DCHA. 28036 Madrid (MADRID)
 ☎ +34 91 302 95 40
 ✉ mcanedo@inserail.es
 🌐 www.inserail.es

**INECO**

Global leader in transport engineering and consultancy, it has contributed to the development of transport infrastructures for over 50 years in more than 50 countries. Its high level technical specialisation allows its activity to diversify into new markets and reinforce its presence in those where it is already established. Its participation in the whole railway system in Spain has led the company to develop important international projects like the Makkah-Madinah high speed in Saudi Arabia, the HS2 project in the United Kingdom or the deployment of ERTMS in Europe.

🚩 Paseo de la Habana, 138 - 28036 Madrid (MADRID)
 ☎ +34 91 452 12 00
 ✉ internacional@ineco.com
 🌐 www.ineco.com

**INGENIERÍA Y CONTROL FERROVIARIO, SAU**

ICF offers technical and sustainable solutions for railway signalling. In this area, our vocation is betting heavily on the development and innovation, constantly releasing new products that can be used to improve and optimize existing technology solutions. All the level crossings since June 2001 have been protected by ICF with its level crossing protection system SPN-900. We are working worldwide with more than 1000 international references. For us it's very important to be sustainable so we have worked hard to design systems that reduces dramatically its power consumption which allows it to work taking its energy only from sun, getting a zero CO2 emissions and zero external power supply.

🚩 C/ La granja 74, 28108 Alcobendas (MADRID)
 ☎ +34 91 490 15 19
 ☎ +34 91 661 58 31
 ✉ ingenieria@icf.com.es
 🌐 www.icf.com.es

**INGENIERÍA VIESCA, S.L.**

We are specialists in design and manufacture of power electronic equipment. Our equipment work satisfactorily in all the continents with high reliability and availability, making efficient use of the available energy. We adapt our products to customer needs and requirements according with the applicable standards and the best quality.

The expected functionality is guaranteed by means of specific test protocols.

Our innovation is present in all our products: auxiliary power converters, battery chargers, flat battery starters, ...

🚩 Rumanía 5, Nave B2 - P.E. Inbisa Alcalá I. 28802 Alcalá de Henares (MADRID)
 ☎ +34 91 883 08 65
 ☎ +34 91 882 07 17
 ✉ comercial@ingenieria viesca.com
 🌐 www.ingenieria viesca.com

**INTERNACIONAL HISPACOLD, S. A.**

Hispacold, a World leader Company for climate systems with more than 40 years' experience is specialized in passengers comfort. Hispacold designs and manufactures HVAC solutions for all rail vehicles: trams, metros, EMUs, DMUs, LRVs... with proven and reliable technology solutions. Hispacold is certified in the most recognized International quality management, environment and safety standards: ISO 9001, ISO 14001, OSHAS 18001, EN 15805-2 and the prestigious IRIS ISO/TS 22163.

🚩 Avda. Hacienda San Antonio, 1 - 41016 Sevilla (SEVILLA)
 ☎ +34 954 677 480
 ☎ +34 954 999 728
 ✉ hispacold@hispacold.es
 🌐 www.hispacold.es

**IBÉRICA TECNOLOGÍA EN SISTEMAS DE SEGURIDAD FERROVIARIOS SL (ITSS)**

Founded in 2005, is a leading manufacturer and supplier of railway hazard monitoring equipment, focusing mainly on hot axle box / hot wheel and Wheel impact load / Weighing in motion detectors. The ITSS systems use state-of-the-art infrared and fibre-optic technology. The PEGASUS HADB/HWD multi beam system monitors the axle box and brake temperatures of coaches. The AGUILA WIM/WILD system uses fibre-optic sensors to detect off-centre wheels and flat spots. It can also report train weight and overloading. ITSS products are the model representation of a perfect combination of experience and innovation.

🚩 Avda Jerónimo Roure, 43 46520 Puerto de Sagunto (VALENCIA)
 ☎ +34 961 279 280 | +34 662 128 140
 ☎ +34 91 141 35 75
 ✉ mail@itss.tech
 🌐 www.itss.tech

**JOB IMPULSE**

JobImpulse, an experienced professional services company with a successful history since its founding. With 57 offices in 13 countries and more than 9. 5,000 employees worldwide. Our services with international reach focus on Outsourcing, Recruitment and Headhunting in different markets such as Railway, Aerospace, IT and Defense. JobImpulse, can attract qualified professionals from other areas adapting them to the railway. To do this, with programs and specialists, we offer training around the world, developing technical and communication skills among employees. Thus, we break the generation gap and lack of resources that exists in the sector.

🚩 C/Aviación, 18 Edificio Morera & Vallejo, I Calonge 41007 (SEVILLA)
 ☎ +34 650 748 498
 ✉ manuel.rey@job-impulse.com
 🌐 <https://job-impulse.es/>



LA FARGA YOURCOPPERSOLUTIONS, S.A.

La Farga is able to produce all the range of railway products in an integrated process. Our railway range includes all alloys used, the different measures of grooved contact wire and all supporting and electricity supply elements, feeders, hangers and cables. Furthermore, we offer technical visits and assessment to our clients and we constantly develop new railway products with the aim of introducing the best copper solutions into the market.

La Farga is a family-run metallurgical company, with more than 210 years of history. We produce semi-finished copper products and their alloys for several technological sectors.

🚩 Colònia Lacambra, s/n, 08508, Les Masies de Voltregà (BARCELONA)
☎ +34 93 850 41 00
☎ +34 93 859 04 01
✉ gustau.castellana@lafarga.es
🌐 www.lafarga.es



LADICIM - UNIVERSIDAD DE CANTABRIA

LADICIM participates in R&D projects focused on the innovation of the railway superstructure, carrying out studies on the development of its elements, acc to national (Adif), European (EN) and American (AREMA) reference standards. The results are reflected in more than 500 reports, 25 research papers with a high impact index and 7 Doctoral Theses. The projects include collaborations in countries such as the USA, Canada, Saudi Arabia, Turkey, Germany, Senegal, Tanzania, Morocco or Ethiopia. LADICIM has implemented a quality system according to the UNE-EN ISO/IEC 17025 standard, being accredited by ENAC (Spanish Accreditation Board) for the testing of fastenings, sleepers and rail welds.

🚩 E.T.S. Ing de Caminos, Canales y Puertos
Avda. de los Castros 44, Santander (CANTABRIA)
☎ +34 620 12 30 24 / +34 942 20 18 28
☎ +34 942 20 18 18
✉ jose.casado@unican.es
🌐 https://ladicim.es/



LANDER SIMULATION & TRAINING SOLUTIONS

Lander Simulation & Training Solutions, S.A. specialises in designing, developing and implementing cutting-edge commercial simulation devices for training purposes.

On the basic premise of preventing accidents and loss of human life, Lander works with each customer to build training simulators which meet the specific needs of each operation. Lander was incorporated in 2002, and now operates in more than 20 countries across all 5 continents. Its solutions cover the entire range of railway operations - suburban trains, long-distance units, high-speed trains, freight, monorail systems, metros or light rail.

🚩 Portuetxe 23A, local B3 20018 San Sebastián (GIPUZKOA)
☎ +34 943 217 491
✉ lander@landersimulation.com
🌐 www.landertsimulation.com



MAINRAIL, S.L.

MainRail is a high-tech startup devoted to providing IT-based solutions to help you digitizing and optimizing the railway infrastructure maintenance operations.

We combine our expertise in a wide range of technologies (e.g. big data analysis and visualization, digital twins, IoT, machine learning, etc.) with a solid knowledge in railway maintenance and operations. Our solutions are based in a customizable IT platform (MainRailMT) for the management of all maintenance-related operations and a family of IoT devices (MainRailID) for a continuous and cost-effective inspection of your infrastructure.

🚩 Polígono Industrial Mutilva. Calle e 11, 1º 11, 1º, 31182 Aranguren (NAVARRA)
☎ +34 662 574 768
✉ jorge.rodriguez@mainrailsolutions.com
🌐 www.mainrailsolutions.com/



METALOCAUCHO, S.L. (MTC)

MTC, being part of Wabtec Corporation, designs and manufacture rubber-metal components for suspension and vibration control systems used on railway, automotive and industrial applications. With headquarters in Spain, MTC has 4 production facilities in 1) Spain, 2) China, 3) India and 4) USA, which offers to customers the possibility to localize production in any of these countries. Thanks to a wide commercial presence in any country of the world, MTC gives local support to develop projects for both OE and Aftermarket business.

Our main products are related to Primary Suspensions, Secondary Air Springs, Bushings, Buffers, Layer Springs, Subassemblies, Elastic Wheels, etc

🚩 Polígono Erratzu 253, 20130 Urnieta (GIPUZKOA)
☎ +34 943 333 755
☎ +34 943 333 751
✉ info@mtc.com
🌐 www.wabtec.com/business-units/metalocauch-mtc



MGN TRANSFORMACIONES DEL CAUCHO, S.A.

MGN was established in 1957 and since then it has been developing its activity both designing and manufacturing rubber-metal components, mainly for the railway industry. MGN invests in research and innovation as a basis for the development of elements to be adapted in the new understanding of passenger and freight trains, taking the latest technological advances of the rubber world, vibration control and damping systems. - Primary and secondary suspensions. - Conical springs - Bushes and spherical bearings - Rods, Bogie subsystems - Pivot Bushes - Elastic Supports - Compression buffer and Draw Gear springs - Bellows, Gangway protections - Profiles, o-rings and seals.

🚩 Candelaria, 9 28864 Ajalvir (MADRID)
☎ +34 91 887 40 35
✉ enp@mgncaucho.com
🌐 www.mgncaucho.com



LANTANIA

Lantania specializes in the construction of heavy civil works (roads, highways, dams, water treatment plants, maritime works, railways and airports), building construction and energy projects. The company began its activity in 2018 with the acquisition of the construction, energy and services business units of the Isolux Corsán Group and the subsequent purchase of the Velasco Group in 2019. One of the differential characteristics of Lantania is its ability to execute any kind of rail project in an integral way. The company has built more than 150 km of infrastructure, tunnels and railway viaducts, as well as more than 50 traction power substations and more than 1,500 km of overhead line.

🚩 Sobrado, 2 28050 Madrid (MADRID)
☎ +34 91 035 35 86
✉ joaquin.navarro@lantania.com
🌐 www.lantania.com



LLALCO FLUID TECHNOLOGY

Llallo Fluid Technology is one of the few manufacturers and suppliers of impact absorption technology for end of track rail lines -Buffer Stops. World Class Technology that protects people, machinery and the Environment. Their products are highly sophisticated end of rail track shock absorbers with a unique performance. Llallo has a wide range of models with gas hydraulic buffers, sliding friction shoes or a combination of both. Their technology allows to control the deceleration to the desired value. They have been delivering high quality Buffer Stop projects in Spain & Portugal since 1970 and in America and other European Countries since 2004. Llallo is also ISO9001, 14001 & 45001 Certified.

🚩 Torre de Cristal pl. 18. Pso. de la Castellana 259C, planta 18. 28046 Madrid (MADRID)
☎ +34 917 423 057
✉ ruben.correa@llalco.com
🌐 www.llalco.com



LUZNOR DESARROLLOS ELECTRONICOS, S.L.

LUZNOR is a company specialized in the design and manufacture of professional torches, emergency lighting and other electronic security devices. LUZNOR puts at your disposal highly qualified technicians, a high quality standard, efficient development, manufacturing and control systems and, above all, a philosophy of commitment to clients that allows LUZNOR to offer innovative products with advanced technology and recognised prestige.

🚩 Paduleta 47 - Pol. Ind. Jundiz Vitoria (ARABA/ÁLAVA)
☎ +34 945 200 961
☎ +34 945 200 971
✉ iarbeloa@luznor.com
🌐 www.luznor.com



MIERES RAIL, S.A.

Design, manufacturing and supply of turnout systems, and their components, for Metro, classic or conventional lines, industrial and heavy haul or High Speed up to 350 km/h.

Design, manufacturing and supply of casted manganese steel crossings. Trimetallic flash butt welding.

Insulated glued joints, transition rails, fastening systems, locking systems, wear measuring devices.

🚩 Polígono Industrial Fábrica de Mieres, s/n 33600 Mieres (ASTURIAS)
☎ +34 985 456 331
☎ +34 985 456 164
✉ mieresrail@mieresrail.com
🌐 www.mieresrail.com



MOSDORFER UPRESA RAIL, S.A.U.

Supply of catenary systems for new installations and maintenances of tramway, conventional and high speed contact lines for international and national projects (Spain, Arabia, Israel, Turkey, Ethiopia, Tanzania, Mexico, Peru, Ecuador, Bolivia, Norway, Sweden, Lithuania...).

Installation of the compensated tensioning devices TENSOREX®, TENSOREX® C+ around the world.

🚩 C. de Zabaleta, 45, 28002 Madrid (MADRID)
☎ +34669785182
☎ +34 91 437 39 10
✉ javier.iglesias@mosdorfer.com
🌐 www.mosdorfer.com

Do you
want to
appear
in this
directory?



NEXT GENERATION RAIL TECHNOLOGIES, S.L. (NGRT)

NGRT S.L. is a company focusing on railway safety, working with railway regulators and helping infrastructure managers and train operators secure their infrastructure and operations. NGRT's products are designed to detect any anomalies that occur in the railway infrastructure.

The NGRT applications will detect rolling stock, independent of speed, direction and track conditions at any location, in all weather conditions, as well as anomalies impacting on the railway infrastructure.

📍 C/ Severo Ochoa, 9 29590 Campanillas (MÁLAGA)
☎ +34 650 100 801
✉ info@ngrt.com
🌐 www.ngrt.com



NEWTEK SOLIDOS, S.L.

NEWTEK is mainly active in the manufacture of systems for filling sand in trams, trains and locomotives. NEWTEK supplies installations composed of storage silos, fixed sand feeders, sand feeding mobile units, aspiration systems and dust collection devices. The company also designs, manufactures and maintains custom installations according to the needs of each client.

📍 Pol. J Mª Korta, Parcela A1 - 20750 Zumaia (GIPUZKOA)
☎ +34 943 835 942
✉ anajera@newteksolidos.com
🌐 www.newteksolidos.com

Do you
want to
appear
in this
directory?



PREFABRICACIONES Y CONTRATAS, S.A.U. (PRECON)

PRECON is the Spanish leader in design and supply of precast concrete products for railway tracks, either ballast and ballastless tracks. It has supplied monoblock, twinblock, block slabs and sleeper for switches and crossings, Either for high speed, conventional lines, haul, subways and tramways.

📍 Espronceda, 38 (Local 3) 28003 Madrid (MADRID)
☎ +34 91 343 03 48
☎ +34 91 359 12 46
✉ fsanchez@precon.cemolins.es
🌐 www.preconsa.es



PRETENSADOS DEL NORTE, S.L.

PRETENSADOS DEL NORTE, is one of the most important producers of pre-stresses steel in the word. Our products are recognised for having the best quality on the market. Our high standards of quality mean that we are talking about the best pre-stresses steel you can find. Our company has more than 30years' experience in manufacturing and investment that have led to what we are today: PRETENORTE. Technologically, we have equipped our company in Vitoria-Gasteiz with the best state-of-the-art machinery. We continue to incorporate the latest novelties for your complete satisfaction. Pretenorte is highly specialised in pre-stressed steel and its many applications.

📍 Miravalles, 4 Zona Indus. de Betoño 01013 Vitoria (ARABA/ÁLAVA)
☎ +34 945 258 431
☎ +34 945 261 400
✉ pretenorte@pretenorte.com
🌐 www.pretenorte.com



REVENGA SMART SOLUTIONS

Revengea Smart Solutions offers comprehensive solutions for the transport sector: railways and metros, roads, ports & airports. In railways & metros we focus on passenger experience solutions, ranging from intercomms, public address and information panels, to systems related with revenue/cost issues, like ticketing, tolling and access control, and also with operator oriented solutions like railway telephony, signalling (level crossings, point heaters and inspection systems) and station control. More than 45 years of experience. Projects deployed in 24 countries.

📍 Fragua, 6 28760 Tres Cantos (MADRID)
☎ +34 91 8061810
☎ +34 91 8041955
✉ marketing@revenga.com
🌐 www.revenga.com



NRF

Since 1927 NRF is a leading manufacturer and supplier of cooling products for the automotive market, industrial, railway and marine sector. NRF is known for the production of high quality radiators, but also produces and supplies a large range of other engine cooling and air conditioning products. NRF has global engineering, testing and development facilities. Railway and ship manufacturers, large retailers of vehicle parts, radiator shops and specialists in more than 80 countries worldwide daily rely on NRF's high quality products.

📍 Av. Asegra, 22, 18210 Peligros (GRANADA)
☎ +34 958 405 030
✉ a.lara@nrf.eu
🌐 www.nrf.eu



PARRÓS OBRAS, S.L.

Family business with over 25 years experience in civil construction and iron and steel industry for the railway sector. Parros Group which is specialized in pile driving and catenary foundations, has implemented the 80% of the foundations of the entire Spanish High Speed Network. Whether conventional railway network or Highspeed Railway (AVE), PARRÓS GROUP is distinguished by the versatility of our machines adapted "Ad hoc" for auxiliary civil works from the railway, with automatic switching to the three Spanish gauges. Also innovative is our implementing system of noise barriers from the railway track and its foundations. Generic activities of building and general construction.

📍 Ctra. Virgen del Monte, 1 13260 Bolaños de Calatrava (CIUDAD REAL)
☎ +34 926 88 47 05
☎ +34 926 88 47 06
✉ rocio@parros.es
🌐 www.parros.es



PATENTES TALGO, S.L.U.

Talgo is a Spanish company with more than 70 years of experience, specialized in designing and manufacturing trains, maintenance equipment as well as providing maintenance services to railway operators worldwide. Today, Talgo is the leading global reference for Spanish High Speed Technology and the number one player in Spain's railway market. Due to Talgo's successful expansion strategy and its globally acclaimed products, the company has become truly international. Its key success factors are innovation, unique technology, sustainability, safety, competitiveness and tailor-made projects with clear focus on customer. Talgo trains are internationally recognized as the best in their category.

📍 Pº del tren Talgo, 2 28209 Las Matas (MADRID)
☎ +34 91 631 38 00
✉ marketing@talgo.com
🌐 talgo.com



SALICRU, S.A.

Its main mission is to guarantee a continuous, clean, economical, reliable and ecological electricity supply to its customers, for which it offers a wide range of products capable of providing solutions for the most sensitive systems and most demanding markets.

SALICRU has the widest national coverage and 10 subsidiaries abroad, selling its products in more than 130 countries, with more than 2,000,000 pieces of equipment in operation. Likewise, SALICRU is certified with ISO-9001, ISO-14001 and ISO-45001 and its products are designed and produced in a way that respects the environment.

📍 Avda de la Serra, 100 - 08460 Palautordera (BARCELONA)
☎ +34 938 482 400
☎ +34 938 481 151
✉ salicru@salicru.com
🌐 www.salicru.com



SATYS INTERIORS RAILWAY SPAIN

Satys is a Spanish company specializing in the design and manufacture of galley systems for railway rolling stock.

A galley system is broken down into 3 main families of equipment:

- Refrigerated cabinets
- Functional systems. Cooling, electricity, water, lighting, etc.
- Interiors. Countertops, lining, etc.

Satys offers a wide range of products specifically for each one. Thanks to the unique and highly efficient Satys technology, our products are internationally recognized as the best in their class in terms of quality, safety, availability, reliability, accessibility and environmental friendliness.

📍 Avenida de la Cañada, 64-66 - Nave 1A 28823 Coslada (MADRID)
☎ +34 91 334 15 90
✉ mvega@satys.com
🌐 www.satys.com



SCREENSOR TECH

Screensensor Tech is a startup committed to innovating conventional media in the field of signage and broadcasting advertising and information content. We provide tailor-made solutions to our clients, from public transport to retail, enabling them to place transparent T-OLED screens in strategic locations. With the latest display technology, we offer users a unique experience, providing them with relevant content and real-time information, while creating a new space for effective communication between brands and their audiences.

📍 C/ del Doctor Castelo, 44, 28009 Madrid (MADRID)
☎ +34 676 123 937
✉ info@screensensor.eu
🌐 www.screensensor.eu



SEGULA TECHNOLOGIES

SEGULA Technologies is an engineering group with a global presence, helping boost competitiveness within all of the major industrial sectors: automotive, aerospace, energy, rail, naval and defense, pharmaceutical and oil & gas. Present in 30 countries and with 140 offices worldwide, the Group fosters a close relationship with its customers thanks to the expertise of its 12,000 employees. A leading engineering specialist placing innovation at the heart of its strategy, Segula Technologies conducts large-scale projects, ranging from studies to industrialisation and production.

🚩 Av. Bruselas 8 Oficina 8
01003 Vitoria-Gasteiz (ARABA/ÁLAVA)
☎ +34 678 771 259
✉ jmartin@segula.es
🌐 www.segula.es



SENER INGENIERÍA Y SISTEMAS, S.A.

SENER is one of the leading engineering and technology groups in Europe with over one billion euros of annual turnover, more than 2,000 professionals and a continuously growing international presence with offices in over 15 countries. In the field of railway engineering, Sener counts on an extensive experience in metros, light rail trains systems and tramways, conventional railway line, freight transport and High Speed Lines. SENER's activities range from preliminary, conceptual and feasibility studies, basic and detailed engineering to project management services, supervision of works, value engineering and ICE services.

🚩 Av. de Zugazarte, 56 48930 Getxo
Las Arenas (BIZKAIA)
☎ +34 944 817 500 / +34 91 807 70 68
☎ +34 944 817 501 / +34 91 807 87 32
✉ uen_infraestructurasytransporte@sener.es
🌐 www.ingenieriaconstruccion.sener



SGS GROUP SPAIN

SGS is the world's leading inspection, verification, testing and certification company. We are recognized as the global benchmark for quality and integrity. With more than 97,000 employees, we operate a network of more than 2,600 offices and laboratories around the world. Our core services can be divided into four categories: Certification, Inspection, Testing and Verification. We are constantly looking beyond customers' and society's expectations in order to deliver market leading services wherever they are needed. Our independent services add significant value to our customers' operations and ensure business sustainability.

🚩 C/ Trespaderne, 29, 3º Edificio
Barajas I, 28042 - Madrid (MADRID)
☎ +34 913 138 000 / +34 607 845 281
✉ carolina.sotoramos@sgs.com
🌐 www.sgs.com



SOFTWARE QUALITY SYSTEMS, S.A.

SQS is a company specialised in software validation and verification with extensive experience in safety critical systems and, specifically, in the railway sector. We accompany our clients throughout their development process, optimizing it and guaranteeing compliance with specific regulations and standards for their sector in terms of safety, functionality, quality, etc. Likewise, we design and implement automated test environments and complement our offer with training activities in the field of software testing and quality.

🚩 Avenida Zugazarte 8, 1º-6, Getxo,
(BIZKAIA)
☎ +34 944804617
✉ blaiabarra@sqes.es
🌐 www.sqs.es



STADLER RAIL VALENCIA, S.A.U.

International rail vehicle construction company, Stadler, is headquartered in Bussnang in Eastern Switzerland. Founded in 1942, it has a workforce of over 8,500 based in various production and over 40 service locations. Stadler provides a comprehensive range of products in the heavy and urban transport segments: High-speed trains, intercity trains, regional and commuter heavy rail trains, underground trains, tram trains and trams. Stadler also manufactures main-line locomotives, shunting locomotives and passenger carriages, including the most powerful diesel-electric locomotive in Europe. It is the world's leading manufacturer in the rack-and-pinion rail vehicle industry.

🚩 Pol. Ind. del Mediterráneo Mitjera, 6
46550 Albuixech (VALENCIA)
☎ +34 961 415 000
☎ +34 961 415 002
✉ stadler.valencia@stadlerail.com
🌐 www.stadlerail.com



SYNEOX RAIL S.L

Syneox was born from the merger of the railway divisions of three world-renowned companies; Grupo Cobra, Semi and Cymi. We integrate all the technologies and systems involved in a railway line: Energy. Leader in energy supply to all railway systems. Signaling and auxiliary systems. Railway technologies worldwide. Associated civil works. To the installation of railway systems. Operation and maintenance. High speed, conventional network, trams and subways. Solutions. Turnkey solutions. Concessions and Public-Private Associations.

🚩 Calle Cardenal Marcelo Spínola nº 10,
28016 Madrid (MADRID)
☎ +34 649 724 570
✉ jesus.garciah@syneox.com
🌐 https://www.syneox.com/en/



SICE TECNOLOGÍA Y SISTEMAS, S.A. (SICE TYS)

SICE Tecnología y Sistemas, (SICE TYS) is a group of companies that provides solutions and systems for Transport and Traffic, Environment and Energy efficiency, Smartcities and Telecommunications. SICE TyS, as systems integrator, offers technological solutions adapted to the railways sector, conceiving a centralized management with functionalities oriented to the operation of public and private transport, integrating: - Security Systems - Telecommunications Systems - Signaling (Interlockings, Level Crossings, CTC) (ENYSE) - Automatic Fare Collection - Traffic Prioritization of Public Transport - Engineering (OFITECO): railway lines; Tunnel monitoring; Load test (railways bridges).

🚩 La Granja, 72-Pol. Ind. Alcobendas
28108 Alcobendas (MADRID)
☎ +34 91 623 22 00
☎ +34 91 623 22 01
✉ sice@sice.com
🌐 www.sice.com



SIEMENS MOBILITY, SLU

Siemens Mobility is a separately managed company of Siemens AG. As a leader in transport solutions for more than 160 years, Siemens Mobility is constantly innovating its portfolio in its core areas of rolling stock, rail automation and electrification, turnkey systems, intelligent traffic systems as well as related services. With digitalization, Siemens Mobility is enabling mobility operators worldwide to make infrastructure intelligent, increase value sustainably over the entire lifecycle, enhance passenger experience and guarantee availability.

🚩 Ronda de Europa, 5
28760 Tres Cantos (MADRID)
☎ +34 91 514 88 87
✉ info@siemens-mobility.com
🌐 www.siemens.es/siemens-mobility



SMART MOTORS

Smart Motors applies new technologies to generate added value from the monitoring of critical railway assets that believe that Digitalization and the uses of advanced analytics are the way to service excellence. The priority is to generate new knowledge about the operation of railway assets that satisfies the requirements of the most demanding environments and with a real day to day contribution. Smart motors has its own Digitalization Platform to help maintenance and operation that brings together signaling monitoring systems, infrastructure and rolling stock, as well as IoT sensors adapted to the railway sector.

🚩 Torroella de Montgrí 17-19, 08027
Barcelona (BARCELONA)
☎ +34 675 220 603
✉ info@smartmotors.org
🌐 smartmotors.org



S.A.E. IBERTEST

IBERTEST is a company that has been developing, manufacturing, and supplying mechanical testing systems for materials and components since 1970. We provide our systems for various sectors, including the railway industry, and consistently adhere to the highest standards of quality and technology. Additionally, we offer turnkey projects for the creation of laboratories and national reference centres for testing, quality control, research and training. Our integrated approach allows us to provide global solutions for research and quality control of a wide variety of materials and components.

🚩 Ramon y Cajal, 18-20, Daganzo de
Arriba, Madrid (MADRID)
☎ +34 918 845 385
☎ +34 918 845 002
✉ arturo.cano@ibertest.es
🌐 www.ibertest.com



Talleres Alegría, s.a.

TALLERES ALEGRÍA, S.A.

Talleres Alegría, s.a. is a family owned company devoted since 1900 to design, manufacturing and after sales assistance of all kind of fixed track material, its accessories and spare parts. Developing of Designing and Commissioning Integral projects of turnouts to be installed at Depots and Industrial Ports and Factories. Design, manufacturing, repair and maintenance of self propelled vehicles to carry out works at the infrastructure. Design, manufacturing, retrofitting, repair and maintenance of freight wagons.

🚩 Peña Santa, 7 - Pol. Ind. Silvota
33192, Llanera (ASTURIAS)
☎ +34 985 263 295
☎ +34 985 266 011
✉ talegria@talegria.com
🌐 www.talegria.com



TECNIVIAL, S.A.

In TECNIVIAL we specialize in all types of fixed signalling for track (Marker Boards), conventional lines and High Speed lines. We are one of the companies approved by the Spanish Railway Infrastructure Administrator (Adif) and the others. The last product boosted to the market have been the NANOTEC SIGNS (R+D). The incorporation of cutting-edge materials (carbon nanoparticles) to the signs manufacturing, allows the improvement of its behavior and mechanical features: light, corrosion-free, low residual value and maintenance, eco-friendly, resistant to loads (snow/wind). Besides, we develop Corporate Image projects according to the needs of the customer; design & installation.

🚩 Livorno, 19004 Guadalajara
(GUADALAJARA)
☎ +34 639 101 699
☎ +34 949 252 080
✉ export@tecnivial.es
🌐 www.tecnivial.es

**TEKNIKER**

R&D center oriented to technology transfer through research projects.

Specialization areas:

- Advanced manufacturing: laser processes, LMD coating and repair, cutting processes
- Surface engineering: friction and wear studies, physical-chemical coatings seeking to improve anti-corrosion, wear, easy cleaning, anti-adherence, optical and aesthetic characteristics
- ICTs: solutions for inspection and measurement based on vision and AI techniques, O&M, condition monitoring, data management, Smart components, sensor development
- Product engineering: new product development, tribological testing, fault diagnosis.

🚩 **Iñaki Goenaga, 5, 20600 Eibar (GIPUZKOA)**

☎ +34 943 206 744



✉ inaki.bravo@tekniker.es

🌐 www.tekniker.es

**TELDAT S.A**

Since 1985, Teldat has been providing solutions for cloud access, remote office communications, cybersecurity and voice/data connectivity both in the office and in specific environments (industrial, railway, vehicles or public services). Teldat invests heavily in R&D&I including technologies such as network virtualisation, artificial intelligence, Federated Learning, 5G and DLT. Combined with its ability to work closely with its customers according to the specific needs of each project, it is among the European leaders in the corporate communications market. Present in more than 40 countries, it has headquarters in both Spain and Germany.

🚩 **C/ Isaac Newton 10, 28760 Tres Cantos, (MADRID)**

☎ +34 686 68 80 58



✉ ctovar@teldat.com

🌐 www.teldat.com

**TELICE, S.A**

Telice is an international company, with more than 45 years of experience in different markets related to cutting-edge technology and standing out in the railway market. Its activity covers the design, installation and maintenance of railway electrification systems, safety and railway signalling, electrical substations, civil engineering projects, industrial electricity, fibre optic installation, industrial automation and safety systems in tunnels, underground and mining projects. Due to its wide expertise, Telice has become preference collaborator for the main railway administrations. Telice has international presence in Norway, United Kingdom, Portugal, Peru, Chile and Brazil.

🚩 **Anabel Segura 11, Edif. A, 3ª Pl. Oficina B 28108 Alcobendas (MADRID)**

☎ +34 91 084 17 07

☎ +34 987 264 407

✉ telice@telice.es

🌐 www.telice.es

**TRAFAG**

Trafag is a Swiss manufacturer of pressure, temperature, level and SF6 gas density sensors, as well as a supplier of speed sensors. Present along the whole world and, managing from Spain the Iberian Peninsula and Latin America.

Sectors of activity: railway, hydrogen, hydraulics, pneumatics, renewables, shipbuilding, test benches, big engines, EX zones...

🚩 **Parque Tecnológico de Bizkaia, edif. 208B. 48170 - Zamudio - (Bizkaia)**

☎ 667 843 260 / 946 414 063



✉ ivan.blanco@trafag.es / info@trafag.es

🌐 www.trafag.com

**TYPESA**

Founded in 1966, TYPESA is a leading consulting engineering group in the fields of transport, buildings, water, environment, energy and rural development. We have a long-standing relationship with public, private and institutional clients in the Americas, Europe, Africa, Asia and the Middle East, assisting them in the development of infrastructure, energy and city projects from concept to completion. In addition to providing world-class engineering services, TYPESA has extensive experience in building the capacity of local firms and in strengthening institutions to guarantee the sustainability of the infrastructure.

🚩 **Gomera, 9 -28703 San Sebastián de los Reyes (MADRID)**

☎ +34 91 722 73 00



✉ exterior@typsa.es

🌐 www.typsa.es

**ULMA FORJA S.COOP.**

Ulma Forja S.Coop is a cooperative company, part of Ulma Group and specialized in the manufacturing of Forged Components. With more than 50 years of experience and with two production plants (Oñati and Lazkao), we offer forged and machined components of high quality. We produce our pieces forged from a wide variety of materials to meet the different requirements and needs of our customers in many industries.

In the railway sector, Ulma collaborates with companies in the value chain to which supplies forged components in different materials such as carbon steel, aluminium or low alloy, among others.

🚩 **C/ Zubillaga 3, 20.560 Oñati (GUIPÚZCOA)**

☎ +34 670 621 868



✉ mlopetegi@ulmaforge.com

🌐 www.ulmaforge.com

**TELTRONIC**

Backed by over 40 years of experience in the design, manufacturing, and deployment of Professional mobile radio projects on a turnkey basis, Teltronic presents a broad portfolio of critical communication solutions for transport sector, providing complete solutions: network infrastructure, control centre, and end-user equipment, including specialized onboard systems specifically designed for train, metro, tram and LTR. Besides voice and data transmission solutions, the company offers integration services with other subsystems: PA and intercom, applications to manage and control fleets and for operating aid, real time CCTV or communications support for signalling systems ETCS, CBTC, PTC...

🚩 **Pol. Malpica, C/F Oeste 50016 Zaragoza (ZARAGOZA)**

☎ +34 976 465 656

☎ +34 976 465 720

✉ fsanjuan@teltronic.es

🌐 www.teltronic.es

**THALES ESPAÑA GRP, S.A.U.**

Thales is a World leader in Mission Critical Solutions for Land Transportation. Thales Spain, with more than 60 years of experience, has been pioneer and leader in the technological development of the Spanish railways, being one of the main suppliers of safety and telecommunication systems for the Spanish Railways Administrations and present in countries as Turkey, Mexico, Algeria, Malaysia and Morocco. Its activity goes from the development, manufacturing installation, commissioning to the maintenance of equipments and systems for railway signalling, train control, Telecommunication, Supervision ticketing and critical infrastructures security.

🚩 **Serrano Galvache, 56 Edif Álamo 28033 Madrid (MADRID)**

☎ +34 91 273 7200



✉ jose.villalpando@thalesgroup.com

🌐 www.thalesgroup.com

**TPF GETINSA EUROESTUDIOS, S.L.**

Passion for excellence

Our priority : developing solutions that meet our client needs. This approach is based on three pillars: expertise, efficiency and continuous innovation.

Today, TPF is ranked among the most important multidisciplinary companies active in the following sectors: building, transport infrastructure, water and energy.

Over the years, the group successively expanded in Europe, Asia, Africa and America through a series of acquisitions and became a key player, internationally recognized in its field.

🚩 **Ramón de Aguinaga, 8 28028 Madrid (MADRID)**

☎ +34 91 418 21 10

☎ +34 91 418 21 12

✉ internacional@tpfingenieria.com

🌐 www.tpfingenieria.com

**URETEK SOLUCIONES INNOVADORAS, S.L.U**

We are the inventors of consolidation with Expansive Resins. Our patented technologies are the most used in the world, with more than 100,000 interventions carried out. Our high technology, the quality of the interventions and more than 30 years of experience, we have become the reference for the consolidation of land with injections of expansive resin to be able to provide multiple solutions to your problems. We are committed to repairing structures without interfering with life and activities, in particular we use unique and patented innovative technologies that are fast and conservative.

🚩 **Príncipe de Vergara, 1261º F - 28002 Madrid (MADRID)**

☎ +34 900 809 933



✉ uretek@uretek.es

🌐 www.uretek.es

**VALDEPINTO, S.L.**

Valdepinto, S.L. was established in 1986 and focuses its activities in the Railway sector.

We have four main product lines:

- All types of machining (specialists in electrical insulation).
- Screen printing, Signs and Engraving low-relief.
- Metal transformation and welding.
- Design and fabrication of transformers and coils of high/low voltage. Our philosophy is to always offer all our clients an unbeatable value for Money, combined with an excellent service.

🚩 **C/ Águilas, 9 - Nave 11 28320 Valdepinto (MADRID)**

☎ +34 91 691 42 68

☎ +34 91 691 57 03

✉ lauraparra@valdepinto.net

🌐 www.valdepinto.com

**VIRLAB VALDEPINTO, S.L.**

Virlab is a reference laboratory for dynamic vibration and shock testing. Created in 1976 and located between San Sebastian and Toulouse and less than one hour from Biarritz airport (France), the laboratory develops accredited tests for equipment that may be subject to earthquakes or other types of vibrations and shocks.

Virlab's laboratory tests electrical, mechanical and instrumentation components, equipment and systems that, due to their use, may be subject to compliance with specific regulations under seismic, vibration or shock conditions.

🚩 **Polígono Industrial Asteasu Zona B, N° 44 20159 Asteasu (GUIPÚZCOA)**

☎ +34 94 369 15 00 / 609 407 664

☎ +34 943 69 26 67

✉ dagote@virlab.es

🌐 <https://virlab.es/es/>

**VICOMTECH**

Vicomtech is an applied research centre specialising in Artificial Intelligence, working on technological solutions based on Computer Vision, Data Analytics, Computer Graphics, Advanced Media Technologies and Language Technologies. It aims at meeting the innovation requirements of the local companies and institutions to face new economic and social challenges, and improving their competitiveness in a global market. The transfer mechanism for this research is the creation of R+D+i projects geared to companies' needs. Furthermore, the centre works intensively on cooperation projects, through cooperative technology development promotion schemes at local, national and international level.

🚩 Paseo Mikeletegi, 57 Parque Tecnológico de Miramón 20009 San Sebastian (GIPUZKOA)
 ☎ +34 943 309 230
 ☎ +34 943 309 393
 ✉ mtlinaza@vicomtech.org
 🌐 www.vicomtech.org

**voestalpine Railway Systems JEZ, S.L.**

We are committed to the designing, manufacturing, supplying and maintenance of all types of manganese steel switches and railway track systems for railways and tramways, in addition to moulded cast steel parts for the general industry. Our Technical Department (Department R&D) ensures we have the capability of designing and producing points and crossings (turnouts, crossovers, scissor crossovers and diamond crossings) or parts for them, such as hard steel manganese crossings, spare tongues... as well as the generation of patents.

🚩 Arantzaz s/n 01400 Llodio (ARABA/ÁLAVA)
 ☎ +34 946 721 200
 ☎ +34 946 720 092
 ✉ vaRSJEZ.info@voestalpine.com
 🌐 www.jez.es

**VOLGELSANG**

As the inventor of the elastomer-coated rotary lobe pump and a pioneer in the area of vacuum wastewater technology, we have been supplying technical solutions whose functionality, quality and reliability set the benchmark for our competitors. Renowned railway companies such as the Deutsche Bahn among other international companies put their trust in our intelligently designed solutions for wastewater disposal and fresh water supply as well as Vogelsang's demand-oriented technical equipment. These include systems mobile solutions, maintenance for bioreactor toilet systems as well as servicing and cleaning to ensure the highest standards regarding hygiene, usability and cost-efficiency.

🚩 Crta. del Pla 285 nau 20 43800 Valls (TARRAGONA)
 ☎ +34 977 60 67 33
 ☎ +34 977 60 67 33
 ✉ ruben.llorente@vogelsang.info
 🌐 https://www.vogelsang.info/

**WSP SPAIN**

As one of the world's leading professional services firms, WSP provides engineering and design services to clients in the Transportation & Infrastructure, Property & Buildings, Environment, Power & Energy, Resources and Industry sectors, as well as offering strategic advisory services. Our experts include engineers, advisors, technicians, scientists, architects, planners, surveyors and environmental specialists, as well as other design, program and construction management professionals. With approximately 49,000 talented people globally, we are uniquely positioned to deliver successful and sustainable projects, wherever our clients need us.

🚩 Albert Einstein 6, 39011 Santander, (CANTABRIA)
 ☎ +34 942 290 260
 ☎ +34 942 274 613
 ✉ Mario.Perez@wsp.com
 🌐 www.wsp.com/es-ES

**ZELEROS**

Zeleros is the Spanish company developing a hyperloop transport system, already considered as "the fifth means of transport". Its focus on the vehicle optimization allows to reduce infrastructure costs and to operate at safer pressures for the passengers. Zeleros has already raised substantial private and public support, and collaborates with companies such as Renfe (Trenlab) and Altran, research centers (Universitat Politècnica de València, CIEMAT, UPM) and is supported by investors such as Plug and Play, Angels or ClimateKIC. Currently Zeleros is preparing the construction of its own 2-kilometer test-track in Sagunto to demonstrate the system at high speed.

🚩 Muelle de la Aduana s/n, Edificio Lanzadera 46024 Valencia (VALENCIA)
 ☎ +34 633 386 733
 ☎ +34 633 386 733
 ✉ info@zeleros.com
 🌐 www.zeleros.com

**ZITRON, S.A.**

ZITRON is a world-wide leading company in designing, manufacturing, commissioning and maintenance complete ventilation systems for metro and tunnels. ZITRON has the world's biggest aerodynamic test bench, certified by AMCA, for testing fans at full load and 100 % speed. ZITRON's extensive reference list includes more than 500 metro and tunnel projects. The latest and more significant ones are Crossrail in London and Doha Metro. Experience and know-how, providing innovative and tailor-made solutions, are our most appreciated values. The global growing market of ZITRON's fans, along with the high level of satisfaction of the Clients is the best mark of its equipment and services quality.

🚩 Autovía AS-II nº2386, Polígono Rocas 33211 Gijón (ASTURIAS)
 ☎ +34 985 168 132
 ☎ +34 985 168 047
 ✉ zitron@zitron.com
 🌐 www.zitron.com

Infraestructuras sostenibles en un entorno cambiante

Equipos multidisciplinares conscientes de la importancia de la seguridad, integración y evolución tecnológica en los sistemas ferroviarios.

IDOM.com



OUR COMMITMENT, YOUR SUCCESS

IDOM

At the forefront of rails solutions



ArcelorMittal

XCarb®

Towards carbon neutral steel



ArcelorMittal Rails & Special Sections with production facilities in Poland, Luxembourg and Spain, offers a wide portfolio of products, covering rails for subways, trams, trains, light rails, crane rails, crossings and rail accessories. ArcelorMittal is a specialist in rails for high-speed networks, with over one million tonnes produced and is present in infrastructure projects in over 30 countries. Its high technologic quality allows us to participate in the most demanding tenders all over the world.

ArcelorMittal's main trending topics for railway:

- **RailCor®** a completely new range of specific corrosion resistant rail products, to meet the most demanding customer requirements.
- **Climate Action: XCarb™** will bring ArcelorMittal's reduced, low and zero-carbon products, steelmaking activities, wider initiatives and green innovation projects, into a single effort focused on achieving carbon neutral steelmaking.
- **R&D:** ArcelorMittal operates a dedicated rail research and development unit which includes pilot plants and prototyping facilities. Its Rail Excellence Centre also includes a dedicated welding unit which can provide advice and support for current and future grades for its customers.
- **Digitalisation:** ArcelorMittal Rails & Special Sections is extending its 4.0 transformation with the launch of several digital tools. New Rail Tool version available.
- **Increasing the length of rails:** in order to provide further track safety, welding, track laying and maintenance cost savings.
- **Increasing the service life of rails:** with the most appropriate solutions related to different applications: for Light Rail Transit operators a complete range of Low Carbon Vanadium (LCV) grades of grooved rails; for ports and heavy loads, R340, a top wear performance crane rail and for transport rails, new hardness grades for heavy haul.