

INDRA AND TALGO JOIN FORCES IN EUROPE'S RAIL, THE LARGEST RAIL INNOVATION PROGRAM IN EUROPE, WHICH DRIVES THE DIGITALIZATION AND SUSTAINABILITY OF THE SECTOR

- **They have signed a strategic agreement to be a Founding Member and join the Governing Board of Europe's Rail, which, with a budget of 1.2 billion euros, takes over from the previous program, Shift2Rail, and becomes the largest European rail RDI program in history**
- **As part of Europe's Rail Joint Undertaking, Indra and Talgo will collaborate with leading European companies, organizations and universities to develop and test on a large scale new digital and sustainable solutions that place the train at the center of the new green mobility**
- **Both companies are investing in technologies such as CyberRail IoT, satellite ERTMS, Big Data, Artificial Intelligence, digital twin, smart maintenance and intelligent platforms that integrate transport data to facilitate a crossover and multi-modal vision**
- **They are also contributing new developments for a better user experience and making vehicles more sustainable and appealing through the use of new lightweight recyclable materials, as well as cleaner, more efficient propulsion systems**

Madrid, March 31, 2022- Indra, one of the world's major technology and consulting companies, and Talgo, a leading company in the design, manufacture and maintenance of medium and high-speed light rail, have reaffirmed their commitment to innovation to boost the railway sector by becoming one of the 25 Founding Members of Europe's Rail, the largest railway innovation program in Europe and, therefore, join its Governing Board.

With a budget of 1.2 billion euros, Europe's Rail (EU-Rail) is part of the new European Innovation Framework Program: Horizon Europe, and continues the work carried out in the previous rail innovation program, Shift2Rail, in which Indra had already been a member of the Governing Board and where both companies took on a very important role, participating in more than 25 projects. EU-Rail focuses efforts especially on digitalization and sustainability, to achieve zero carbon emissions and enhance safety.

As part of EU-Rail, Indra and Talgo become key players in defining and implementing the strategic RDI agenda for the sector, in collaboration with the European Commission. Both companies will also contribute their technological capabilities and experience, and collaborate with leading European companies, organizations, institutions and universities to develop and test on a large scale new digital and sustainable solutions that place the train at the center of green mobility. Europe's Rail places an even higher priority than Shift2Rail on bringing the developed solutions to the market. To this end, it envisages the development of large-scale demonstrators involving a large part of the industry and numerous European countries. The first open calls for project proposals in the areas defined in the program were launched this March.

This alliance between Indra and Talgo is based on their complementary natures. Both have contributed to design and aspire to participate in projects in the seven Flagship Areas (FAs), the main areas of activity in which the Europe's Rail program is structured, together with the crossover area of digital enablers.

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Specifically, in addition to working in this crossover area, they will seek to develop new technologies for the management of the rail network and passenger mobility in a multi-modal environment (FA1); the digitalization and automation of operations to move towards the autonomous train (FA2); intelligent and integrated asset management (FA3); projects to move towards a sustainable green rail system (FA4); new digital and sustainable services that improve the competitiveness of rail freight (FA5); new innovative solutions and services to boost regional rail services (FA6); as well as innovating new approaches for new guided transport modes, such as Hyperloop (FA7).

Driving digitalization, sustainability and appeal of the sector

Indra and Talgo's purpose in EU-Rail is to contribute their experience and continue to evolve their advanced technology for the railway sector, with the aim of leveraging all the benefits of CyberRail IoT, satellite ERTMS, digital twins, big data, Artificial Intelligence and smart maintenance technologies to turn the train into the center of the new mobility ecosystem and put it at the service of the traveler. This will also be aided by developments to make vehicles more efficient, attractive, sustainable, and have a smaller environmental impact.

For example, to address the integration of the entire mobility ecosystem, Indra will continue to work on its integrated, open, flexible and scalable solution for rail traffic management: Indra Rail TMS, coupled with its specialized smart mobility platform: In-Mova Space. Focused on new digital technologies, In-Mova Space is oriented towards mobility as a service and generates a collaborative scenario in which data from all modes of transport is shared and information is enriched, applying intelligent analytics, learning and predictive models. It facilitates a crossover and multi-modal vision, which, in addition to serving the needs of citizens, makes it possible to induce clean and sustainable transport flows. It also makes it possible to adapt the transport supply to real needs and the requirements of users, improve the traveler's experience, optimize the capacity of infrastructures and services, as well as their maintainability, encouraging the development of automation.

Indra also hopes to transfer its experience in the aerospace industry and the advantages of innovation in the so-called New Space era to improve the signaling and safety of rail transport.

Indra and Talgo will also continue the work undertaken in Shift2Rail for the development and implementation of a secure railway IoT network based on Wi-Fi communications, which can offer, for example, enormous opportunities to move towards a more automated, secure and intelligent railroad management and facilitate secure asset management. These solutions facilitate coverage in areas where there is no previous network infrastructure or where it is difficult to reach, as in the case of regional lines with low traffic, as well as smart maintenance, intelligent and predictive maintenance, which brings significant economic and environmental benefits.

In addition, building on the experience of Shift2Rail, Talgo will work on the development of lighter and more efficient trains using new materials and processes, as well as traction using permanent magnet motors. These two lines will also evolve to improve performance and promote a circular economy by exploring the recyclability of raw materials. This will be complemented by other developments to increase the efficiency of hydrogen traction and to achieve more flexible and attractive interiors.

The program also intends to continue innovating in its ticketing solutions, encouraging multi-modality and mobile payment; access control, through paradigms such as Be-In Be-Out (BIBO) and biometric identification; as well as for the digitalization of freight operations and the logistics chain in freight transportation.

About Indra

Indra (www.indracompany.com) is one of the leading global technology and consulting companies and the technological partner for core business operations of its customers worldwide. It is a world-leader in providing

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proprietary solutions in specific segments in Transport and Defence markets, and a leading firm in Digital Transformation 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, end-to-end focus and with a high innovation component. In the 2021 financial year, Indra achieved revenue of €3.390 billion, with over 52,000 employees, a local presence in 46 countries and business operations in over 140 countries.

About Talgo

Talgo S.A. is a leading company in the design, manufacture and maintenance of high-speed light trains with a manufacturing presence in seven countries: Spain, Germany, Kazakhstan, Uzbekistan, Russia, Saudi Arabia and the United States. The company is recognized worldwide for its innovative capabilities, unique and distinctive technology and reliability. Talgo is Renfe's main supplier of high-speed and ultra high-speed trains and the supplier of trains in the "Haramain" high-speed railway line project between Mecca and Medina in Saudi Arabia. Talgo is also the manufacturer chosen by the German operator Deutsche Bahn and the Danish operator DSB to decarbonize its network with the Talgo 230 long-distance trains.