Press Release

INDRA DEVELOPS A SMART RAIL GATE TO IMPROVE 10% CAPACITY, RELIABILITY AND PUNCTUALITY OF GOODS TRANSPORT

- **Indra is adapting its identification and technology electronic toll collection to recognition of cars and loading; and will improve the exchange of data with the operator to optimize processes in the terminals, reduce times, improve the capacity and the traceability of goods**

- **To optimize planning and operation of cars and loads, Indra is also analyzing the development of its DaVinci TMS system, the world's most advanced rail traffic management platform, so it can integrate the rail transport of goods**

- **These works are part of the FR8Hub R&I project of the Shift2Rail IP5 program, the main European innovation initiative in the rail industry, with the goal of moving toward a more efficient, sustainable and competitive goods transport**

Madrid, April 17, 2018.- Indra, one of the main global consulting and technology companies, is working on the design and development of a smart gate used to digitally identify cars and loading units transported in railroad terminals, allowing an increase of 10% in the capacity, reliability and punctuality of goods transport by train.

Within the framework of the FR8Hub R&I project (Real time information applications and energy efficient solutions for rail freight), the company is working to transfer the functionality of its *free-flow* identification and electronic toll collection gantry for highways to applications for rail traffic, moving from the dynamic and real-time automatic detection, classification and identification of vehicles to that of railcars and goods. This is possible thanks to the advanced Indra solution, which includes laser sensors and capture of high resolution images, to which new sensors will be added, such as electronic tags with RFID technology, and specific algorithms for the identification of rolling stock.

Indra also participates in defining the management system of the railroad network of goods, which will improve this transport system's tactics and operational planning. The FR8Hub project will develop a multimodal data exchange platform between the different actors involved in goods transport to make all the information generated available to the operator, which will be able to know what goods are to arrive, which have been dispatched, etc. and thereby improve decision-making.

The definition of this network management system will allow Indra to evolve its DaVinci TMS system, the world's most advanced rail traffic management platform, which manages Spain's entire high-speed railroad, among other lines, to integrate it in the rail transport of goods. This adaptation, in addition to new developments framed within the transversal IMPACT-2 project, also part of Shift2Rail, would allow for integrating Indra's DaVinci system with the new intermodal data exchange platform and for defining new, additional functionalities specifically for the planning and operation of goods, in railroad lines and terminals, warehouses, etc. alike. This way, all information could be accessed in real time and new services created that are specific and more precise, for both the network's operator and users.

Thanks to the digitization of all the information, the network management system will provide greater visibility and traceability of the flow of loads, allowing greater control and coordination between all the actors involved in the terminal in a fast, efficient and secure manner. Likewise, the processes in the terminals and the use of the facility's infrastructures will be optimized, reducing the time of permanence of the loads and optimizing the design of future terminals.

Broad potential for improvement

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The goal of the FR8Hub project, which is driven by a consortium of 14 companies and institutions from Sweden, Germany, Italy, Austria, Switzerland and Spain and is part of the Shift2Rail IP5 program, is to move toward a more efficient, sustainable and competitive goods transport, one of the major challenges of the EU, in which Central European countries are at the forefront. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No: 777402.

Within IP5, Indra also participates in the FR8RAIL project (development of functional requirements for a sustainable and attractive rail transport), which aims to reduce the cost of goods transport by 10% and waiting times by 20%, making available to the information systems of the logistics chain 100% of the information on goods transport by rail. Indra's role in the project is to promote the use of wireless technology and sensors to improve the monitoring and maintenance of railcars and goods.

Leader in transport technology

Indra's participation in the FR8Hub, IMPACT-2 and FR8RAIL projects contributes to positioning the company at the forefront in the application of advanced technologies to the rail transport of goods on a pan-European level.

Indra is a member of the governing body of Shift2Rail and is also involved in the IP2 programs, focused on the development of advanced rail traffic control and management systems; and in the IP4, dedicated to the development of new ICT solutions and services that improve the passengers' experience and the attractiveness of the railroad by working in areas such as interoperability, ticketing, new payment methods or information systems. In addition to its technological capabilities and experience in rail transport, Indra brings to Shift2Rail its wide-ranging expertise in a number of industry sectors, supporting synergy generation and technology transfer between different fields, as well as driving more integrated and intermodal mobility management.

This key position in Shift2Rail consolidates Indra as one of the leading operators in the rail sector and recognizes its commitment to innovation in this field. The cutting-edge technological solutions developed by the company have placed it at the global forefront of the sector, having successfully deployed systems in different countries worldwide, including the USA, Australia, Mexico, Colombia, China, India and Malaysia, among others.

About Shift2Rail

Shift2Rail is the first European rail Public Private Partnership tasked with developing strategically focused research and innovation (R&I) and market-driven solutions, integrating these to create the railway system of the future. With a total value of €920 million for the period 2014-2020, Shift2Rail is promoting the competitiveness of the European rail industry and ensuring the attractiveness of rail as a safe and sustainable low carbon transport mode. This in order to meet the changing transport/mobility needs of EU citizens and the economy.

About Indra

Indra is one of the world's top technology and consulting and a technology partner for the key operations of its customers' businesses worldwide. It is a leading worldwide provider of proprietary solutions in niche areas in Transport and Defense Markets and the absolute leader in IT in Spain and Latin America. It offers a comprehensive range of proprietary solutions and cutting edge services with a high added value in technology based on a unique culture of reliability, flexibility and adaptability to the needs of its customers. Indra is a world leader in the development of end-to-end technology solutions in fields such as Defense and Security, Transport and Traffic, Energy and Industry, Telecommunications and Media, Financial Services, Electoral Processes, and Public Administrations and Healthcare. Minsait is Indra's digital transformation business unit. In 2017 Indra posted a revenue of €3,011m, employed 40,000 professionals, and had a local presence in 46 countries plus sales operations in more than 140 countries.

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