

INDRA DEVELOPS A NEW GENERATION OF KEY SOLUTIONS FOR ADIF THAT WILL IMPROVE THE PLANNING AND MANAGEMENT OF TRAINS

- **Indra is responsible for the new Sitra+ de Adif traffic control and management system for the entire Spanish rail network, having been awarded a JV contract with Siemens Mobility, which will develop the automatic traffic enumerator / router that will be integrated into the tool**
- **This project develops a crucial system, with a life cycle of over 20 years, which offers information in real time and which can be integrated into several systems, strengthening Indra's position as Adif's long-term technological partner**
- **Indra is also concluding the implementation stage of the work on Adif's new planner, which facilitates the scheduling of the use of the rail network in a more efficient way and automatically supplies the various systems with the necessary information for the operation of the network**

Madrid, November 12, 2018.- Indra has strengthened its position as Adif's long-term technological partner. Having been awarded a JV contract with Siemens Mobility, Indra is developing the new Sitra+ traffic control and management system for Spain's entire rail network, both conventional as well as narrow-gauge railways (the old FEVE) and high-speed railways. The goal of Adif is to shift the railway regulation paradigm, integrating the different applications that operators use in a single regulating tool. The use of this tool will provide greater efficiency in rail management and improve the quality of service for all customers.

This system, together with Adif's new planner, which the company is also working on, is the foundation for incorporating the latest digital technologies into rail management and will contribute decisively to improving train traffic control, rail traffic planning, efficiency and, consequently, also maintenance and the quality of the service provided to the customers.

Sitra+ is a crucial system for the operation of the network, which offers data in real time and can be integrated with several Adif systems, both current and future, with a life cycle of between 20 and 30 years. It is one of the "most significant technological decisions" of the organization, according to Adif.

Therefore, Indra and Siemens Mobility have adopted a co-creation model of the latest generation tool in terms of development methods, processes and procedures, in order to adapt to customer needs, yet with the solidity and reliability essential for the rail operation.

Through the combination and analysis of the information provided by all the systems that control the different areas of rail operation, it will provide added value functionalities, such as advanced monitoring services to locate trains, the determining of crossing points and the detection of possible delays. Sitra+ data also supplies and benefits several external Adif systems, such as customer information systems, and it will be applied to setting the rail use fee that railway operators are charged.

The new Sitra+ will be a major improvement in terms of functionalities and scalability, as it can incorporate the latest technologies, such as artificial intelligence. The new architecture will make that evolution easier, as well as the maintenance of the application, with the resulting cost savings.

To achieve a better usability, Indra will carry out a preliminary study of the operators' needs, in order to provide them with a simple and user-friendly tool, which will also contribute to improving productivity. This special effort to improve the user experience will also help in the migration phase, change and implementation management of the new tool.

Siemens Mobility will be responsible for developing the automatic traffic enumerator / router that will integrate the tool and that will assist operators performing regulatory tasks, including communications interface functions between the new Sitra+ and the Centralized Traffic Control Systems (CTC). In this way, most of the usual traffic management operations can be performed directly from Sitra+, with several advantages for traffic optimization, punctuality and customer information without the need of any other tools.

In addition to developing Sitra+, Indra is concluding the implementation work on the new planner for the entire ADIF network, which facilitates a more efficient scheduling of rail network usage and automatically supplies various systems with the necessary information for daily network operation. It is also a system with a long-term life cycle.

With the new developments for planning and managing in real time, Indra is strengthening its position as a technological partner in Adif's critical systems.

Co-innovation to lead change in the rail sector

Indra will develop Sitra+ in close collaboration with Adif to be able to co-create an advanced tool that can provide service over a long period of time.

Following a similar model, Indra and Adif have already successfully developed the DaVinci platform, which has become the most advanced rail traffic management platform in the world. In addition to managing Spain's over 3,000 kilometers of high-speed track, the DaVinci system is in use in countries such as Colombia, Lithuania and Morocco, as well as 500 kilometers of the Meca-Medina AVE high-speed line, which it will also supervise in Saudi Arabia, and the almost 2,000 kilometers of Turkey's high-speed network in the coming years. Indra's rail traffic management technology is part of Mova Traffic, the transport solutions suite that allows comprehensive management and control of multi-modal mobility, enhanced by the incorporation of technologies such as big data, artificial intelligence and the IoT.

This new project to develop a tool with the latest technology and a long-term vision for Adif will help strengthen Indra's position as one of the leading companies in innovation for the rail sector. The latest technology solutions developed by the company have been at the forefront of the sector worldwide and have already been successfully implemented internationally in countries such as the USA, Australia, Mexico, Colombia, China, India and Malaysia, among others.

Indra participates actively in the main European innovation initiative for the rail sector, Shift2Rail, as part of its Governing Board. The company participates in the IP2 programs, focused on the development of advanced railway traffic management and control systems; in IP4, dedicated to the development of new ICT solutions and services that improve the customer experience and the attractiveness of the railroad working in areas such as interoperability, ticketing, new payment systems and information systems; and in IP5, with the goal of achieving a more efficient, sustainable and competitive freight transport.

In addition to contributing its solutions and experience to rail transport, Indra contributes to innovation in the sector with its digital capabilities and its extensive technological knowledge, which facilitates a more integrated and inter-modal mobility management.

For example, in the SCOTT and ENACT projects, Indra is bringing the new generation of the intelligent and safe IoT to the rail sector by developing solutions based on secure wireless communications, which can generate significant economic and energy savings, as well as improving safety.

About 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 the 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 2017 financial year, Indra achieved revenue of €3.011 billion, with 40,000 employees, a local presence in 46 countries and business operations in over 140 countries.