



Press Release

THE PRESIDENT OF THE SAUDI RAILWAYS ORGANIZATION VISITS THE INDRA TECHNOLOGY LAB FOR THE HIGH-SPEED RAIL LINK TO MECCA

- **Indra has set up a technology center where the systems to be deployed to the Saudi Arabian high-speed railroad line can be configured and tested**
- **As the technology partner to the Spanish consortium building the railroad, Indra is in charge of providing the management systems, telecommunications, security, ticketing and ICT**
- **Work at the Haramain High Speed Rail (HHR) Systems Lab is making good progress and is even ahead of schedule**

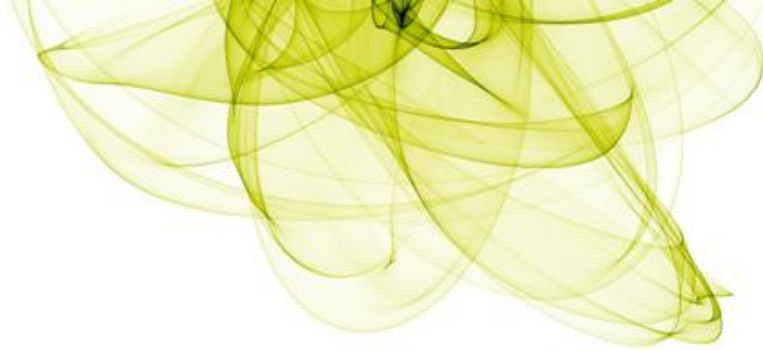
The President of the Saudi Railways Organization (SRO), His Excellency Mohammad Khalid Al-Suwaiket, today visited the advanced technology lab set up by Indra in San Fernando de Henares (Madrid), where the firm is configuring and testing systems destined for the Mecca-Medina high-speed rail line in Saudi Arabia, which will be built and operated for 12 years by a Spanish consortium.

During his visit, the President of the Saudi Railways Organization, along with Project Director General, Dr. Bassam Bin Ahmed Ghulman, and Project Manager, Eng. Mohammed Mahmoud Wald Sheikh, were accompanied by the Project Director of the consortium, Santiago Cobo, and the Indra Deputy General Director, Eduardo Bonet, among others.

As the technology partner on the Haramain project, Indra is responsible for developing and implementing fixed and mobile telecommunications systems, security systems, technology management systems, the control center (OCC) and ticketing solutions (AFC) for the new line.

Work at the multinational's dedicated lab is progressing well and is even ahead of schedule. The Haramain High Speed Rail (HHR) Systems Lab is a reflection of Indra's dedication to the project. It was set up in order to test the systems that were specifically designed for the new rail link prior to deployment.

As a Systems Testing Facility, operators at the lab are able to configure and test the various systems and run integration tests, seeking to anticipate and address any potential technical



issues that may emerge when the different technologies are incorporated, as well as checking that the technological solution works as it should.

The HHR Systems Lab is housed in a 700 meter building, with an office area, a room fitted with all the required technological infrastructure, a powerful latest generation Data Center, equipment configuration spaces and lab areas where all the engineering and integration tests are run.

The President of the Saudi Railways Organization toured the facilities, where Indra staff are already working on the project, and saw testing on the new systems for himself.

Proven technology

Prior to being deployed to Saudi Arabia, all the equipment and materials must first pass quality inspections and manufacturing tests. Indra engineers and specialists also conduct integration tests at this lab, ensuring optimal quality levels and correct system functionality. In particular, all transformable materials, such as electronic network equipment (LAN, data center, security, etc.) to which Indra contributes its expertise and experience in software development, programming, etc., are tested at the Indra HHR Systems Lab before being transported to Saudi Arabia for installation at the corresponding rail infrastructure.

The lab also conducts integration tests for the different technologies, whether developed by Indra or its partners.

The equipment that the multinational will deploy to the rail line is currently being configured at the HHR Systems Lab to ensure absolute security for this major project, including cameras, fire detectors, intrusion detectors, access control points and much more.

Telecommunications infrastructure

The fixed and mobile telecommunications infrastructure used by the technology systems (signaling, ticketing, passenger information, etc.) are currently the most advanced of the solutions under development. A GSM-R communication node has already been set up at the Indra lab. This is a critical requisite for deployment of the ERTMS Level 2 train protection systems, supporting train-ground communications and transmitting train movement and control information.

The basic infrastructure and smart fixed communications network are already at the HHR System Lab, where operators are configuring and testing the equipment that will be fitted on the tracks. The ultra-modern fiber-optic network that Indra will deploy to the high-speed line will support services for stations, control centers, rail sensors and Internet services for passengers, among other features.



Indra is also building and implementing telecommunications stations. These are shelters adapted to the local weather conditions that will house electronic equipment and critical systems, such as GSM-R telecommunications, along with communications antenna towers, backup power generation units, etc. All this follows field research and radio designs to determine where these stations should be situated in the 195 km region north of the line.

Project technology partner

As the technology partner for the new high-speed rail line between the two holy cities, Indra is also responsible for equipping and launching the operation and control center located in Jeddah, as well as another backup center. Both centers will be equipped with the DaVinci system, developed by Indra and the intellectual property of Adif, which is considered the world's most advanced rail traffic management platform.

The line is expected to be the busiest passenger rail service in the country. It will run using contactless ticketing technology provided by Indra, supporting ticket issuing, automatic and manual ticket sales, electronic payments and access control systems. Indra will also provide ticket reservation and sales services via alternative channels, such as over the Internet.

In later stages of the project, Indra will supply driving and operating simulators for the training academy based in Jeddah, passenger information systems, electronic panels and station signage, online information, public address systems and much more.

Indra, chaired by Javier Monzón, is one of the world's largest consultancy and technology multinationals, a leader in Europe and Latin America and is expanding in other emerging economies. Innovation is the cornerstone of its business, which is highly focussed on the customer and on sustainability. The multinational is one of the leaders in its sector in Europe in terms of investment in R&D and innovation, having invested more than €570M in the last three years. With sales approaching €3,000 million, it employs 42,000 professional and has customers in 138 countries.