

## **INDRA INCORPORATES BLOCKCHAIN TO ITS TOLL SOLUTIONS IN ORDER TO INCREASE THE PROTECTION AND TRACEABILITY OF TRANSACTIONS**

- **In order to position itself as a technology provider in multi-operator mobility, it has equipped its toll backoffice system with the ability to record the most sensitive exchanges of information between different operators on a blockchain using blockchain**
- **ROADIS, a multinational in the infrastructure sector, will work with Indra to implement this innovative solution on one of its Mexican highways (Monterrey-Salttillo) so as to reduce fraud and improve cybersecurity, within the framework of the Critical-Chains R+D+I project**
- **Thanks to its innovative effort, Indra is bringing pioneering solutions to the market that facilitate the transition to new models of advanced mobility, including its system for detecting high-occupancy vehicles, which is already being implemented in the United States**

**Madrid, November 11, 2021.-** Indra, one of the leading global technology and consulting companies, has incorporated a new capability into its toll backoffice system to record transactions on a blockchain, from its Mova Collect line of solutions. The objective is to offer operators and concessionaires an even more robust and reliable solution that allows to record any operation quickly and efficiently, increasing data integrity, transparency and traceability.

The work is being developed within the framework of the European Critical-Chains R+D+I project, in which Indra is leading the transport use case. The company has partnered with ROADIS, a multinational in the infrastructure sector, to validate this technological solution on one of the highways that the company operates in Mexico: Monterrey-Salttillo (CAMS). They will implement this innovative technology with the aim of protecting the numerous transactions that take place in a concessionaire, providing them with greater security and reducing the possibility of fraud, helping to reinforce it as an intelligent and secure highway.

Applying blockchain to the processes and transactions that take place in the backoffice systems of a toll (transaction integrity, *clearing* between operators, payments to the central entity, financial auditing, fraud control, etc.) allows to reduce conflicts between the different participants due to possible disagreements, protects against possible cyber-attacks, and it also facilitates *settlement* and auditing tasks. It also reduces the problems that may arise in the management of blocked users lists due to delays in the sending of license plate and vehicle type records that have used the toll at a given time.

The use of blockchain does not interfere with the users' normal operation, who continue with the same interfaces. It will only allow alerting of possible mismatches in the records so that they can be consulted.

The solution developed by Indra is particularly suitable for electronic toll collection and in situations where there are several concessionaires and there is interoperability between them.

From a technical point of view, it should be noted that the work is being developed on a Software-as-a-Service platform that will make it possible to record toll transactions and the associated settlement processes, increasing traceability. Specifically, Critical-Chains uses Quorum, a decentralized blockchain business platform that allows different permissions to be given to different users depending on their role in the business model, so that information is not public, as is the case with other platforms, such as Ethereum.

In the pilot led by Indra, thanks to this privacy, the different participants will have permission to view and record operations, while the competent authorities will be able to carry out the necessary audits in a transparent and secure manner.

### **Application of blockchain in transportation**

The Critical-Chains project, funded with support from the European Commission's Horizon 2020 Program, is led by the University of Reading (Berkshire), and has twelve partners from eight countries. In addition to the transportation use case, Indra is also leading the work package in charge of validating the *framework* developed in different areas: banking, insurance, financial institutions and toll highways.

In the transportation sector, Indra is also going to use blockchain within the framework of the SIMPLE (SIMplification of Processes for a Logistic Enhancement) project, in which, together with its subsidiary Minsait, it is going to develop and implement the Spanish logistics single window, which will integrate all the information on freight transport and logistics activity in Spain. The solution will guarantee the traceability of the documentation and cargo by means of blockchain technology, enabling all the agents and transport modes in the logistics chain to interact electronically by digitizing and integrating their data and documents.

In addition to protecting operations, ensuring greater transparency and traceability of recorded data, the blockchain applied to the transportation sector eliminates the need for intermediaries to safeguard the inviolability of data or possible fraud, since the very nature of this technology guarantees the transparency and immutability of records.

### **Innovation at the service of the new mobility**

Thanks to its innovative effort, Indra is bringing pioneering solutions to the market that facilitate the transition to new advanced models which seek a more sustainable, safe, efficient and collaborative mobility. In the field of tolls, in addition to the backoffice solution with blockchain, its latest developments include its Mova Collect dynamic toll system with *deep learning* and automatic detection of high-occupancy vehicles.

Indra is already implementing this innovative toll system in the United States to enable the operation of the I-66 Outside the Beltway highway through an advanced dynamic pricing system. Indra's system will facilitate safer, more efficient and sustainable management of this highway, whose data will allow the system to "learn" and improve its performance.

The incorporation of new technologies based on Artificial Intelligence, deep learning, big data, IoT, cooperative transport systems (C-ITS) or blockchain to its mobility platform, In-Mova Space, and to its tolling and traffic and tunnel management solutions, reinforces Indra's leadership in *smart mobility*.

In addition to advancing in the dynamic toll (Managed Lanes) model in the United States, in recent years, Indra has been successful in projects to implement its most advanced technology on roads in Queensland, Australia; in the tunnels managed by the English DGT or in the London tunnels.

### **About Indra**

Indra ([www.indracompany.com](http://www.indracompany.com)) is one of the leading global technology and consulting companies and the technological partner for the core business operations of its customers world-wide. It is a world-leader in providing 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 a high innovation component. At the end of the 2020 financial year, Indra achieved revenue of 3.043 billion euros, had nearly 48,000 employees, a local presence in 46 countries and business operations in over 140 countries.

### **About ROADIS**

ROADIS is a leading multinational company in the private promotion of land transportation infrastructure in the world, with extensive experience in the development, operation and maintenance of highway concessions. It is a subsidiary of the Public Sector Pension Investment Board (PSP Investments), one of the largest investment managers for pension funds in Canada. It currently manages 1,882 kilometers of highway, distributed in 10 concessions in Mexico, Brazil, Spain, Portugal and India.