

INDRA AWARDED A €75 MILLION CONTRACT IN THE US TO IMPLEMENT A STATE-OF-THE-ART AI TOLL SYSTEM

- **Its Mova Collect solution for dynamic tolls with Artificial Intelligence deep learning and automatic occupancy detection system will facilitate the safest, most efficient and sustainable management of the I-66 Outside the Beltway highway segment, whose data will allow the system to learn and improve its performance**
- **Indra's Mova Traffic solution for intelligent traffic management systems offers operators a unique vision of what is happening on the highway**
- **Indra's technology will contribute to greater road safety and traffic flow, reduce pollution and increase the drivers' options, who may opt for free or paid lanes that have dynamic prices which vary depending on traffic density**
- **This contract adds to the one recently won by Indra to implement its technology on Australian roads, which together with projects for the London and United Kingdom tunnels confirm the company as one of the world leaders in smart mobility**

Madrid, October 30, 2019.- Indra, one of the leading global technology and consulting companies, has been awarded a contract for €75 million with the concession company I-66 Express Mobility Partners, 50% owned by Cintra, to implement the toll technology that will enable the I-66 to operate with an innovative, dynamic fare system. Once completed, this 22-mile I-66 Outside the Beltway highway segment, from I-495 to US Highway 29 near Gainesville, in Virginia, will have three free lanes and two lanes with a dynamic toll (Managed Lanes).

Indra will implement a free-flow automatic toll system from its Mova Collect line of solutions, which will detect traffic intensity in real-time, and provide inputs like traffic density, vehicle type, vehicle's occupants and other variables that support the calculation of dynamic toll fares. Indra's solution, based on free-flow toll points, allows cars to pass a toll point without having to reduce the vehicle's speed. This project is Indra's first project to have an automatic occupancy detection system integrated with each toll point.

Thanks to this solution, the toll rates in express lanes will change based on traffic demand along the corridor. The system can change the toll rates as often as every three minutes. If the traffic increases on the express lanes, the toll can be changed, so that the number of users willing to pay is reduced, traffic intensity decreases again and travel times are improved. Thus, it is possible to keep vehicle speeds higher than the free lanes to provide better service to the express lanes' users and dynamic charging becomes an advanced traffic management tool.

Indra's solution will inform drivers the fare for their choice of free or express lanes. Indra's highly redundant design maximizes the number of billable transactions should a device(s) fail and allows maintenance work at night when the traffic flow is lower.

Indra's solution will provide sensor technology that will contribute to greater road safety and pollution reduction, making mobility more sustainable in one of the most congested corridors in the country.

Unique solution in the world

The Indra toll solution is one of the most advanced that currently exists, incorporating AI deep learning capabilities, integration with connected vehicles and the company's system for automatic occupancy detection.

Indra's R&D&i effort provided a "Deep Learning" Vehicle Occupancy Detection (VOD) System that showed the highest accuracy rate in a pilot test performed in San Francisco, compared to the other two companies worldwide that met the minimum criteria required to participate.

Thanks to computer vision and artificial intelligence, the system can automatically detect, in real-time, non-intrusively and with high reliability, the type of vehicle that travels on the road, as well as the front and rear occupants, helping operators manage the toll collection process.

Indra's dynamic toll solution will also be able to improve its performance and "learn" through deep learning as more real-time data is collected during operations. Indra's solution is scalable and has great flexibility to adapt to changes in business and vehicle classification rules required by the client.

The Indra's project for I-66 Express Mobility Partners also includes a complete roadside system with communications, intelligent transportation system (ITS), ITS equipment for and interface to the Virginia Department of Transportation (VDOT) traffic management center and the maintenance of the I-66 Outside the Beltway roadside system for up to a year.

Indra's traffic management system, from the Mova Traffic solutions line, will offer operators a unique view of what is happening on the highway. It will integrate vehicle detection sensors, a video surveillance system (CCTV) and variable message signs, showing toll fare information and incidents related information.

Innovation leads to smart mobility

This contract in the United States follows the Queensland, Australia contact that Indra won recently to implement its Mova technology, which is already implemented for the tunnels managed by the English DGT in the United Kingdom and the London tunnels. These projects confirm Indra as one of the world leaders in smart mobility.

What was crucial to winning these important contracts was Indra's commitment to facilitate more sustainable and environmentally friendly, safer, more efficient and sustainable mobility, through innovation and the use of artificial intelligence, big data, the cloud and systems to integrate connected vehicles.

The innovation makes Indra a pioneer in free-flow toll systems and multi-concession toll systems. In the latter case, Indra implemented Back Office System technology for the integrated management and operation of the LBJ Express and North Tarrant Express highways in Texas. Now, Indra is taking a new step in the advanced model of dynamic tolls (Managed Lanes) to make new and more sustainable mobility policies possible. Dynamic tolling is growing in the United States and has great potential to be applied for large European cities.

Indra has unique experience in transportation, with more than 2,500 projects developed in more than 100 cities and more than 50 countries. Indra's Transportation Division, Indra Mova Solutions, covers the entire life cycle of its clients' projects and combines the new digital, integration, specialization and innovation capabilities demanded by the market, with reliability, business knowledge, Indra's proprietary transport technology and the unique experience of its team of professionals.

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 proprietary solutions in specific segments in Transport and Defense markets, and a 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 2018 financial year, Indra achieved revenue of €3.104 billion, with 43,000 employees, a local presence in 46 countries and business operations in over 140 countries.