

INDRA'S SYSTEM FOR IDENTIFYING HIGH-OCCUPANCY VEHICLES AND FACILITATING ADVANCED MOBILITY MODELS ACHIEVED THE HIGHEST ACCURACY IN A TRIAL IN THE UNITED STATES

- **The company's DAVAO system, which uses artificial vision and deep learning, achieved the highest overall system accuracy rate in tests carried out on an HOV lane on I-880 in the San Francisco Bay Area**
- **Indra was one of three companies world-wide with solutions that met the MTC's minimum accuracy criteria for participating in the trial**
- **The high accuracy achieved by the Indra solution is a milestone, that validates Indra's latest innovation providing intelligent tolling, with special lanes for high-occupancy vehicles and new pricing models, or to restrict access to lanes by a vehicle's number of occupants**

Madrid, February 6, 2019.- Indra, one of the leading global technology and consulting companies, achieved the highest overall system accuracy in a real world test organized by the MTC (Metropolitan Transportation Commission), which manages transportation in the San Francisco Bay Area in the United States, to test the most advanced technologies for the automatic detection of high-occupancy vehicles on its freeways, needed for the implementation of new sustainable mobility policies.

Only Indra and two other companies from around the world, multinationals from Asia and the USA, had a similar system that met MTC's system accuracy criteria for participating in the trial. The Indra solution achieved the highest overall system accuracy rate of 88%.

Indra's High-Occupancy Vehicle Detection System (DAVAO) is non-intrusive and highly reliable and allows the automatic real-time detection of the vehicle type of a moving vehicle and front and rear occupants. Based on the latest artificial vision and deep learning technologies, it is a unique product that makes it possible to roll out smart tolls, with special lanes for high-occupancy vehicles and new dynamic pricing models, also usable in car parks and to restrict access to cities by vehicle type and number of occupants. All this, with free-flow technology, which allows monitoring and classification of vehicles and payment of tolls on the move, even at speeds above 160 km/h.

DAVAO's capabilities allow the implementation of new models of advanced mobility, which prioritize and encourage the use of public transport and high-occupancy and low-emissions vehicles, leading to improvements in traffic flow air quality and noise levels. Until now, compliance and policing of measures like this demanded mobile and static monitoring by highway authorities, which made their widespread introduction complex, ineffective and unreliable.

As well as the US trial, Indra has been testing the system in a car park in Madrid, where it has also achieved excellent results.

R&D that hits the street

Indra's DAVAO system is the result of the company's efforts in research, development and innovation over recent years with the aim of creating the best technology in this area, both hardware and software, and to respond to market need.

Within the framework of projects such as BeCamGreen and DAVAO, Indra has worked on the development and improvement of real-time image processing algorithms for detection of people and face recognition and has tested the best video surveillance equipment. The result is a product ready to be implemented on urban streets and roads, with unique precision and reduced investment and operating costs for potential customers.

Leader in intelligent toll technology

With its innovative DAVAO system, Indra strengthens its position as a leading provider of intelligent toll technology, a field in which it has an impressive track record with projects in countries such as Canada, the United States, Ireland, Mexico, Panama, Chile, Colombia, Brazil, Spain, Portugal, Montenegro, Algeria, the Philippines, China and India.

The company was already a pioneer in the implementation of free-flow toll systems and in 2010 it launched the most advanced free-flow toll system in Latin America on Mexico's Bicentennial Elevated Viaduct. Also in Mexico, it has developed one of the largest remote tolling projects for public freeways in the country, with nearly 500 routes totaling some 4,000 km and representing 45% of the country's freeways. Similarly, it is one of the first companies in the world to implement multi-concession toll systems that allow the integrated management and operation of several highways. This is the case of the innovative multi-concession toll solution implemented in the United States, which allows the integrated management and operation of tolling for three freeways: SH-130 in Austin, the LBJ Express (I-635) and North Tarrant Express in Dallas.

Indra recently launched Mova Solutions, its innovative and industry-leading technology for transport and smart mobility offering. Indra Mova Solutions is based on combining new digital capabilities, integration, specialization and innovation demanded by the market, with reliability, business knowledge, Indra's proprietary transport technology and the unique experience of its people.

Acerca de 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 world-wide. 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 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.