

INDRA MAKES ITS BUS MANAGEMENT SYSTEM MORE SUSTAINABLE WITH A MODULE THAT REDUCES EMISSIONS AND IMPROVES SAFETY BY UP TO 15%

- **It has integrated BLED technology, based on the IoT and big data, into its Operation Support System for efficient and safe driving, thus, in combination with training and incentives for drivers, significantly reducing fuel consumption and incident alerts**
- **Indra has already implemented this feature in flagship projects in Alicante and the Community of Madrid, offering the operator all the information integrated into the control center and minimizing driver stress and increasing their comfort, as well as that of their passengers**
- **Indra, whose technology manages more than 15,000 buses around the world, continues to place innovation at the service of a more sustainable, safer and less polluting kind of mobility**

Madrid, July 21 2021.- Indra, one of the leading global technology and consulting companies, has incorporated a new, efficient and safe driving module into its bus fleet SAE (Operation Support System), enabling savings of fuel and emissions totaling more than 9% and improvements in well-being and safety indicators amounting to 10% (the increases can be up to 15% in each of the cases).

Indra has integrated the BLED technology (<https://www.indracompany.com/es/ecodriving>) of the Mova Traffic family of solutions based on IoT and big data into its SAE, thus allowing the automation of data collection and analysis of driving parameters, including speed, inertia, acceleration and sudden braking, and environmental, consumption-related and energy-efficiency parameters.

Nauta, Indra's on-board equipment for buses integrates all these data and sends them to the control center, providing the operator with real-time driving system information together with all the transport service management information, generating alarms when certain thresholds are exceeded or in the event of a collision and facilitating the creation of reports and decision-making.

As for drivers, they have a gamified mobile application, which, in addition to providing information and alerts, offers personalized recommendations based on machine learning to improve performance and encourages efficient driving good practices with the publication of weekly rankings. Given that the role of the drivers is key to getting the most out of the system, they also undergo an initial skill-based, follow-up and continuous training program.

Personalized machine learning-based recommendations for drivers and gamification initiatives that encourage them to improve their performance.

Indra has already implemented this technology in benchmark projects in Alicante and the Community of Madrid, specifically in city buses in the city of Collado Villalba and inter-city buses in Madrid, both belonging to the Francisco Larrea company, and buses for urban transport in Alicante belonging to the Vectalia company. Significant improvements in fuel consumption, the emissions generated and comfort and safety indicators are being achieved in both cases.

"Thanks to this new feature, savings in diesel consumption, a fall in the number of accidents and greater passenger comfort have all been noted. During the first year, approximately 424.75 tonnes of CO2 pollution have been prevented and the number of incidents has been reduced as a result of the anticipation of events that may occur on the road and the preventive identification of breakdowns when a vehicle considerably exceeds the average of any of the parameters measured by the system. There has also been a reduction in the number of claims submitted by passengers due to sudden braking on the highway and road safety", indicated Francisco Larrea, manager of the company that operates the buses of the CRTM (Madrid Regional Transport Consortium).

These savings of more than 400 tonnes of CO2 are equivalent to these vehicles covering more than 15 million kilometers per year, taking into account that a bus emits 28.4 grams of CO2 per passenger and kilometer traveled.

Hugo Molinero, the SAE product manager at Indra, highlighted “Indra’s ongoing efforts to offer the market new solutions to facilitate more sustainable and environment-friendly mobility that’s safer and more accessible for people and more economically efficient, in keeping with the increasing demands of customers and citizens”.

15,000 buses worldwide

Indra’s smart technology manages more than 15,000 buses for more than 100 operators worldwide, with projects in cities such as Madrid, Barcelona, Mexico City, Medellin (Colombia), Curitiba (Brazil), Savannah (USA), Wroclaw (Poland), Plovdiv (Bulgaria) and Kuala Lumpur (Malaysia), among many others.

The implementation of the efficient and safe driving solution in large cities will entail a major reduction in polluting emissions and the consumption of public transport vehicles. For example, if it were extended to all the city and inter-city buses serving Madrid, it would cut the emissions of more than 35,000 tonnes of CO2 per year (equivalent to more than 1,200 million bus kilometers), more than 70 tonnes of CO (carbon monoxide) and more than 100 tonnes of NOx (nitrogen oxides).

More than 100 cities around the world, including London, Sydney, Dublin, Kuwait and Manila, have placed their trust in Indra’s different solutions to improve their urban mobility. The company’s smart technology applied to traffic management and urban and interurban transportation facilitates safer and more efficient and sustainable mobility, promotes the use of public transportation and inter-modal urban transportation services and contributes to reducing traffic congestion and pollutant emissions and their related costs.

Indra has a unique track record in the transport industry, with over 2,500 projects developed in more than 50 countries. Indra Mova Solutions for transport cover the entire life-cycle of a project and combine the new digital, integration, specialization, and innovation capabilities that the market demands, providing reliability, business knowledge, and transport technology offered by Indra and the unique wealth of 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 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 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 2020 financial year, Indra achieved revenue of €3.043 billion, near 48,000 employees, a local presence in 46 countries and business operations in over 140 countries.