

## The car that communicates with traffic lights

- A project sponsored by SEAT, the Spanish Traffic Authority (DGT), the Barcelona City Council and ETRA (Electronic Traffic) connects vehicles with traffic lights and information panels via the DGT 3.0 platform
- Drivers receive an advance alert on the status of upcoming traffic lights so they can adapt their speed accordingly
- Traffic information will appear in real time on screens in cars

**Martorell, 28/11/2019.** What colour will the next traffic light be if I continue to drive at this speed? The answer to this question no longer depends on driver intuition, but rather on technology. A project led by SEAT, in collaboration with the Spanish Traffic Authority, the Barcelona City Council and ETRA successfully connects vehicles with traffic lights and the traffic control centre so drivers can anticipate their upcoming status. This project also enables information on motorway incidents to get sent directly to vehicles without the need for information panels, bringing cars and infrastructure together via the cloud using cellular technology with latency times of 300 milliseconds.

**Vehicles connected with traffic lights and road infrastructure.** The vehicle used in this pilot project is equipped with the necessary technology to connect with its surroundings and receive information uploaded by the Traffic Authority to the cloud, which in turn enables the driver to anticipate what lies ahead in real time. **“In this project, SEAT's new connected cars receive real-time traffic information from the Traffic Authority's central cloud, including information displayed on motorway panels or the traffic light status in cities”**, explains Jordi Caus, the Head of Urban Mobility Concepts at SEAT.

**Start slowing down, it's about to turn red.** One part of the project consists in linking cars with traffic lights. **“The traffic light sends a signal to the Traffic Authority's cloud about its current status and when it is going to change. The car receives this information, interprets it and alerts the driver of its upcoming status depending on driving speed. This is useful if it is about to change to red, as drivers can begin to decelerate before reaching the traffic light”**, says Jordi.

**How does it work?** When a vehicle is approaching a traffic light, an alert appears on the screen showing whether it will be red, green or yellow when it arrives, as the system performs a calculation based on how far away the car is and the speed it is travelling at. One important note for safety is that it only works as long as the vehicle is not exceeding the speed limit. On the contrary, the system will no longer alert the driver. **“The system does not work at higher speeds, which is very important for road safety. It aims to be an auxiliary tool that enables motorists to drive more smoothly”**, assures Manuel Valdés, the Head of Mobility and Infrastructures at the Barcelona City Council.

**Information panels in your car, too.** Today there are 2,000 information panels that provide drivers with traffic and weather conditions or information about road work or accidents. With this system, all of this information is displayed directly on the screens of connected vehicles at any

point of the road network. According to Jorge, **“we can accomplish the same as what we used to do with variable message signs on the motorway, but now directly to the car from any point on the road.”**

**More safety and efficiency.** The more information you have, the fewer situations of risk you run. This is the goal of the project, which puts road safety at the centre, together with greater driving efficiency. **“We are aiming for a significant reduction in the number of accidents, less vehicle traffic and therefore, a positive effect on the environment”**, says Jorge Ordás, deputy director of Mobility and Technology at the Spanish Traffic Authority.

**A future of collaborative information.** In addition, connected cars and users themselves will also be information suppliers. **“Anyone with information about what happens on the road can share it so other users will know in advance of any incident when they reach the same point”**, explains Jorge. **“With this project we're taking a first step to connect cars with overall traffic infrastructure. We've begun with information functions, but with the future autonomous vehicle in mind we'll be able to act directly on the car in situations of risk”**, concludes Jordi Caus.

**SEAT** is the only company that designs, develops, manufactures and markets cars in Spain. Member of the Volkswagen Group, the multinational has its headquarters in Martorell (Barcelona), exports the 80% of its vehicles, and is present in 80 countries on all five continents. In 2018, SEAT sold 517,600 cars, the highest figure in the 68-year history of the brand, posted a profit after tax of 294 million euros and a record turnover of close to 10 billion euros.

The SEAT Group employs over 15,000 professionals and has three production centres – Barcelona, El Prat de Llobregat and Martorell, where it manufactures the highly successful Ibiza, Arona and Leon. Additionally, the company produces the Ateca in the Czech Republic, the Tarraco in Germany, the Alhambra in Portugal and the Mii electric, SEAT's first 100% electric car, in Slovakia.

The multinational has a Technical Centre, which operates as a knowledge hub that brings together 1,000 engineers who are focused on developing innovation for Spain's largest industrial investor in R&D. SEAT already features the latest connectivity technology in its vehicle range and it is currently engaged in the company's global digitalisation process to promote the mobility of the future.

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