

How to create smart city technology with connected cars

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Credit: Andrea Piacquadio from Pexels

Smart city initiatives are increasingly implemented in various sectors like mobility and ICT to better handle resources and improve citizens' quality of life. The vision of such innovative solutions holds out the promise of integrating data from multiple organizations, diverse

environments and a wide variety of intelligent devices that can be challenging.

Enter the EU-funded CLASS [project](#) that is working towards sustainable, efficient and safe mobility applications in future smart cities. Its software technology is being tested on connected cars in the Modena automotive smart area (MASA) in northern Italy.

"Allowing the execution of big-data analytics under real-time constraints, the CLASS software architecture provides a solution to the problems of managing extremely large amounts of complex data (pedestrians, traffic, vehicles, etc.) in real time," as stated in a news release on the project website. "Data-in-motion and data-at-rest analytics are integrated into a single development framework, which works with real-time guarantees." Quoted in the same news release, Eduardo Quiñones from CLASS project coordinator Barcelona Supercomputing Center says: "Thanks to its capacity to process [big data analytics](#) under real-time constraints, the CLASS framework is a significant step towards making safe connected vehicles a reality."

Smart city applications

The CLASS (Edge and CCloud Computation: A Highly Distributed Software Architecture for Big Data AnalyticS) project will run until December 2020. It aims to efficiently process multiple and heterogeneous streams of data to gain valuable insights and create a common data knowledge base for the city of Modena. For this purpose, CLASS has already started collecting data from Internet of things devices and sensors located in MASA and on high-tech-equipped Maserati cars. These are operated by human drivers who can test the CLASS innovative potential in [traffic management](#) and advanced driver assistance systems. The smart city applications under the CLASS project include digital traffic sign, smart parking, air pollution simulation and

obstacle detection.

As explained in the same news release, the digital traffic sign application offers advice on best routes available, for example in the case of accidents or emergency vehicles. The project website states: "For emergency vehicles (e.g. ambulances, firefighters and police vehicles) it will dynamically create 'green routes' by adjusting the frequency of the traffic lights to reduce the time of intervention."

The smart parking application collects real-time information about available parking places in the monitored area. The air pollution simulation uses data from the distributed sensor infrastructure of MASA to estimate the pollution emissions of moving vehicles in real time. "The Obstacle detection warns the drivers about pedestrians and objects that appear on their way, even if it is not visible to the car," the news release adds. Project partners hope that CLASS will also prepare the technological background for the advent of autonomous vehicles.

More information: CLASS project website

Provided by CORDIS

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