Developing the technology for future smart cities and autonomous cars

- Funded by the European Commission, CLASS will develop a software architecture to design, deploy and execute distributed big data analytics with real-time constraints.
- This technology will significantly increase the data-analytics capabilities of highly-distributed smart systems.

The European CLASS project (edge and **CL**oud computation: **A** highly distributed **S**oftware for big data analytic**S**) will pave the way to better big data applications with real-time constraints for smart cities, connected cars and future autonomous vehicles.

With a funding of €3.9 M, this BSC-coordinated project aims to develop a novel software architecture that will help software and data engineers to design, optimally deploy and efficiently execute distributed big-data workloads with real-time requirements, significantly increasing the data analytics capabilities of future smart systems.

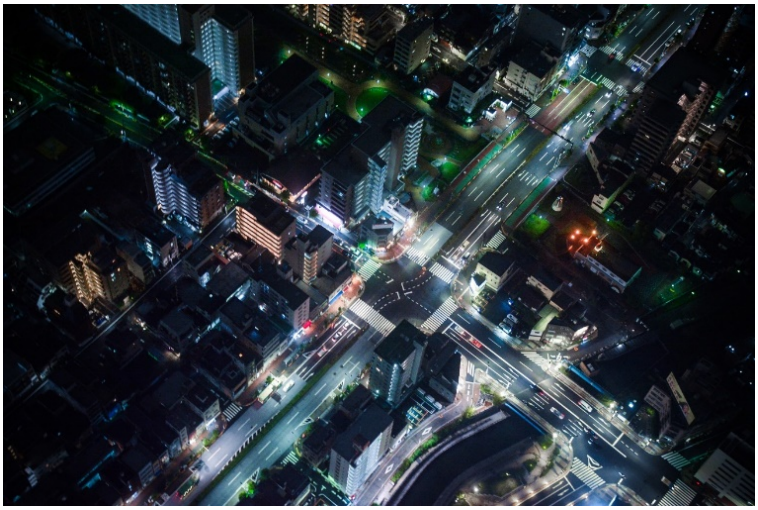
"CLASS aims to increase the intelligence of highly-distributed smart systems by developing a novel software framework capable of distributing data analytics workloads across the compute continuum (from edge to cloud) while providing real-time guarantees" says Eduardo Quiñones, CLASS project coordinator. "The CLASS software framework will enable the implementation of the most advanced urban mobility applications in future smart cities, laying the technological foundations for the advent of autonomous vehicles."

The CLASS framework will be put to the test in a designated area of the city of Modena equipped with the necessary sensors and connectivity. Three prototype cars, operated by human drivers, will test the innovative capabilities in traffic management and advance driver-assistance systems. In this regard, CLASS will provide sustainable, efficient and safe mobility in future smart cities.

Notice: *The research leading to these results has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No "780622".*

CLASS aims to achieve the following ambitious objectives regarding urban mobility and environment:

- Improving overall traffic management by 20%
- Reducing pollution by 20%
- Reducing the response time of emergency vehicles by 30%
- Reducing the number of accidents by 30%
- Reducing the time spend looking for a parking space by 40%.



Although the research focuses on the smart city domain, the CLASS framework can be used for any highly-distributed smart system with big data analytics and real-time constraints (for example, smart manufacturing or agriculture). For this reason, CLASS includes an Industrial Advisory Board in which companies from other smart domains will monitor the project, opening the door to new market opportunities involving the use of big data analytics in the critical embedded system market.

About CLASS

CLASS (Edge and Cloud Computation: a Highly Distributed Software for Big Data Analytics) is a European funded project with a budget of €3.9 million which will start on 1 January 2018 and on 31 December 2020. Coordinated by the Barcelona Supercomputing Center (BSC, Spain), the project brings together a multidisciplinary consortium composed by all stakeholders needed for the development of business innovations using real big-data including vendors from the ICT industry such as Atos Spain S.A. (Spain) and IBM Israel, users across different smart city domain sectors including private and public organizations such as Comune di Modena (Italy) and Maserati SPA (Italy) and researchers such as Universita degli Studi di Modena e Reggio Emilia (UNIMORE, Italy). Further information can be found on the project website: www.class-project.eu

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