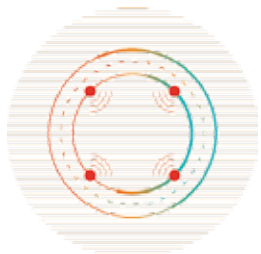**The capabilities of the CLASS framework will be demonstrated on a real smart-city use case**

STAY TUNED

CLASS

www.class-project.eu

1

Featuring a heavy sensor infrastructure to collect and process in real-time a vast amount of data across a wide urban area

2

Connected cars equipped with heterogeneous sensors/actuators and V2X connectivity to enhance the driving experience and preparing the technological background for the advent of autonomous vehicles

3

Deploying advance urban mobility applications based on a combination of data-in-motion and data-at-rest analytics to efficiently coordinate car and city computing resources

@EU_CLASS

linkedin.com/company/classproject

www.class-project.eu

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

Comune di Modena

IBM

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Atos

MASERATI

Coordinating Edge and Cloud for Big Data Analytics

@EU_CLASS

Vision

Computational challenges of smart cities **can be effectively addressed by coordinating** computing resources across the compute continuum

Integration of technologies from multiple computing domains (Big-data, HPC and real-time embedded) into a **single development framework**

- Advanced data-analytics solutions

- HPC techniques for an efficient workload distribution

- Timing analysis techniques

- Parallel heterogeneous embedded processor architectures

- Sensor fusion from data-sources coming from city and vehicle sensors

Main characteristics of the CLASS Software Architecture
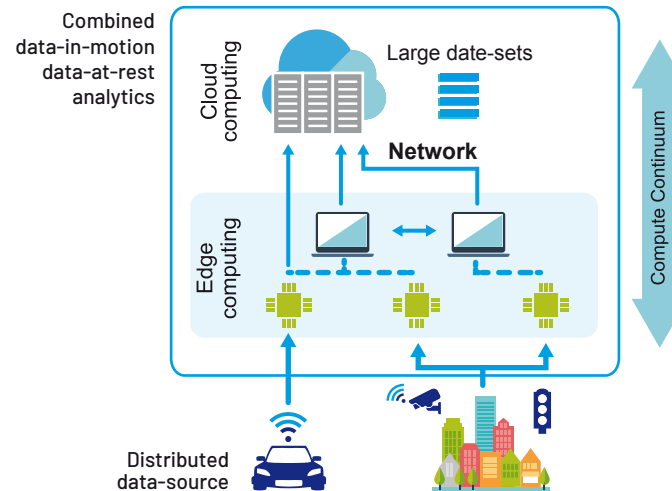
1 **Coordinate** edge and cloud computing resources

2 **Distribute** big-data workloads with real-time requirements along the compute continuum

3 **Combine** data-in-motion and data-at rest analytics

4 **Increase productivity** in terms of programmability, portability/scalability and (guaranteed) performance

Combined data-in-motion data-at-rest analytics

Cloud computing — Large date-sets

Network

Edge computing

Compute Continuum

Distributed data-source

Applications Use Cases

Intelligent traffic management, acting on traffic lights and smart road signals

- "Green routes" for emergency vehicles

- Traffic enhancement based on intelligent cross road management

City View

Vehicle View
Warning Area
Safety Area

Advanced driving assistance systems (ADAS)

- Intelligent cross road management based on obstacle detection

- Automated valet parking systems

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