

Exploiting clouds for smart cities applications - The Cagliari 2020 project

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CAGLIARI 2020 is a 25 million euro project funded within the framework of the National Operational Program for Research and competitiveness of the Italian Ministry of Education University and Research.

The project starts end 2016 with a duration of three years. The partnership includes public and private organisms of the South Sardinia for the development of ICT technologies aimed at optimising the usage of the “city system” and improving the quality of life for those who work and/or live in the city.

The main goal of CAGLIARI 2020 is the development of innovative and environmentally friendly solutions for urban mobility (and possibly metropolitan area mobility), so to boost energy and environmental performances.

The project idea originates from the ever increasing need of innovative tools and technological solutions for the optimisation of urban mobility, for lowering travel times and improving air quality. Cagliari represents the ideal case study for the development and testing of the project, mainly because of its centralised public transport management system ranking among the most advanced in Europe.

CAGLIARI 2020 is based on the study and testing of a sensors network comprised of:

1. Fixed sensors for the tracking of vehicles entering/exiting the urban area. These sensors allow real-time and/or historical analysis, especially helpful in gathering the information required to manage traffic lights systems and sending routing optimisation information to interested users;
2. mobile sensors for the collection of environmental data. Such data will be used to feed decision-making models for the reduction of carbon emissions and the consequent improvement of air quality in the urban area.
3. Mobile devices for the acquisition of the motion habits of people.

The integration of environmental models and smart systems for the management of urban mobility will allow to optimise public and private traffic flows as well as to reduce carbon emissions.

The main innovation brought by CAGLIARI 2020 is related to the application of the “netcentric” paradigm by means of a dynamic and pervasive net (the urban information grid) whose nodes can be both fixed and mobile. This feature allows the sensorial integration of the devices distributed in the urban area and turns public transport buses into “mobile platforms” for the urban road system monitoring thanks to the continuous gathering of traffic, carbon emissions and noise pollution data. It is therefore possible to develop models for the analysis of environmental parameters and to provide support tools to policies aimed at curbing traffic flows, energy consumptions, and carbon emissions within urban areas.

The integration between the aforementioned information and the people’s travelling habits (by means of the anonymous tracking of their mobile phones) allows for the creation of people’s mobility maps.

Moreover, the project intends to spur and help the growth of new multi-sectorial entrepreneurial realities operating in the fields of mobility management and energy consumption. Cloud services will play a key role within the project in supporting the applications dedicated to data traffic monitoring and analysis.

Summary

CAGLIARI 2020 is a 25 million euro project funded within the framework of the National Operational Program for Research and competitiveness of the Italian Ministry of Education University and Research. Its main goal is the development of innovative and environmentally friendly solutions for urban mobility (and possibly metropolitan area mobility), so to boost energy and environmental performances. The project idea originates from the ever increasing need of innovative tools and technological solutions for the optimisation of urban mobility, for lowering travel times and improving air quality. Cloud services will play a key role within the project in supporting the applications dedicated to data traffic monitoring and analysis.

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