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IOT solutions for vehicular traffic estimation and emissions

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In recent years, there is an increasing attention on air quality derived services for the final users. A dense grid of measures is needed to implement services such as conditional routing, mobility services, sustainability, alerting and data heatmaps for Dashboards in control room. Therefore, the challenge consists of providing high density data and services starting from scattered sensors data including traffic and air quality data. In this contribution we describe the Air Quality Monitoring System scenario adopting the Snap4City Solution involving traffic flow reconstruction model and the related traffic emissions diffusion/estimation. In particular, the mentioned solution for the vehicular traffic reconstruction is based on a mathematical model for fluid dynamics on networks via partial differential equations (PDE) that allows to detect macroscopic phenomena as traffic jams and propagation of waves backwards along roads. By means of the traffic model output is also possible to understand the impact of traffic emissions on the atmospheric pollution by means of diffusion model and some advanced technics in short and mid-long terms previsions.

Author: Dr BILOTTA, Stefano (University of Florence)

Presenter: Dr BILOTTA, Stefano (University of Florence)

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