Project:	**Document:**
IoT Manager	Enabling real-time management control in urban contexts

1. Project overview

Cities are growing day by day. Along with their dimension and population, each process concerning the urban context involved is getting more complex. Today we need to design infrastructures capable of handling heterogeneous sensor networks in order to integrate the raw data coming from urban area and process them to expose a range of services to the citizen, enterprise, government, and machine to machine (M2M). Public administrations are nowadays engaged in an ensemble of processes aimed at facing this challenge.

We propose a novel solution called "City Information System" (CIS) designed to cope with intense cities growth. This system is not to be intended as a specific and fixed hardware/software installation but rather as a general model which needs to be adopted and customized for each specific city.

CIS should enable real-time control of the whole city, including social, technical and environmental aspects. For instance, it should be able to manage several sensor networks in order to provide citizens and the public administration with a direct interface to air pollution status, traffic monitoring, parking slots and so forth.
A central smart city topic is that of citizen interaction, which transforms the citizen from a passive subject into a live actor. Thus, CIS should include citizen-driven information as well. Mobile application for end users and social networks are good examples of how each citizen could be directly involved into CIS and therefore into the urban ecosystem.

Public administration would also experience several benefits due to the combination of sensor driven information and social/financial ones. Combining (or simply view simultaneously) environmental data with tax information, births, deaths, cadastral information and more in general with other types of indicators frequently managed by public administration would enhance management control over the whole city.

Again, it is important to notice that CIS does not come with a fixed installation procedure. A city could for example need a massive intervention in Intelligent Transportation Systems field while another could need a deeper investigation of its internal business processes. For this reason, CIS design, implementation and deployment are intended to be assisted by experts able to deal with management control and to orchestrate the whole process.

1.1. General schema

The following schema shows the idea behind the project. As illustrated, a complex network deployed around the city and within the city itself enable the flow of heterogeneous information which represents the core component of CIS.

City Indicators

Management Control