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ALMANAC

RELIABLE SMART SECURE
INTERNET OF THINGS FOR SMART CITIES

The aim of ALMANAC is to develop a service delivery platform which integrates Internet of Things (IoT) edge networks with metro access networks thereby enabling an integrated Smart City Information System for green and sustainable Smart City applications.

AT A GLANCE

Project coordinator :
Istituto Superiore Mario Boella
(ISMB) Italy

Partners:

**Fraunhofer Institute for Applied
Information Technology, Germany**

CNet Svenska AB, Sweden

In-JeT ApS, Denmark

Telecom Italia S.p.A, Italy

Citta di Torino, Italy

Alexandra Institute A/S, Denmark

Duration: 36 months

Total cost: 4.1 million Euroes

**Programme: European
Commission P7-SMARTCITIES-
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Further information:

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Green City management

The Smart City Platform (SCP) will allow smart city management by intelligent control of devices, providing local Machine-to-Machine (M2M) connectivity to smart things and enabling their active involvement in Smart City processes.

The development of the ALMANAC platform will be driven by requirements from the City of Torino with focus on water and waste management and citizen involvement.

The Smart City platform

The SCP collects, aggregates and analyses real-time or near real-time data from appliances, sensors, actuators and smart meters deployed to implement Smart City processes via an independent, pervasive data communication network.

The key element of the platform is a middleware based on a Service-oriented architecture supporting semantic interoperability of heterogeneous resources, devices and services together with data management.

Through intelligent control of devices, the SCP enables decision support and management of local installations, thereby increasing efficiency for service managers as well as for end-users.

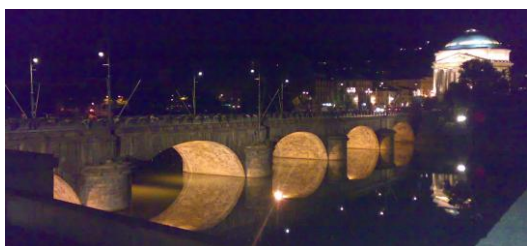
Vision and aims

The vision of ALMANAC is to develop a comprehensive platform that enables the definition of an integrated Smart City information system for green and sustainable Smart City applications. This includes the creation of business models based on public-private partnerships, combining business needs with governance requirements as well as active citizen engagement.

In terms of network infrastructure, ALMANAC will ensure interoperability by supporting authorised data flows among private and/or public networks originally designed to achieve specific goals, therefore characterised by heterogeneous architectures, technologies, performance, architecture and policies.

ALMANAC will enable communication interoperability among devices, sub-systems, existing urban services and external service providers allowing them to operate coherently in response to the Smart City application requirements.

ALMANAC expects service level interoperability by allowing different developers to design and implement Smart City applications through a common set of tools and open, possibly cloud-based, interfaces.



Three prototypes

Development work in ALMANAC will be based on smart city applications in the City of Torino and is divided into three prototype stages.

The first prototype will be an information gathering platform with data collected in real-time from large amounts of Smart City sensors and objects. The prototype will provide proof-of-concept interoperability with Smart City applications over the internet.

The second prototype will extend the capillary network into the network layer through the M2M management components and provide end-to-end data management to the Smart City applications.

The third prototype will be a fully operational prototype adding fully scalable and secure data management capabilities provided by the Data Management Framework.

Torino Smart City

The City of Torino became a 'smart city' in 2011, when it, as one of the first Italian cities engaged itself to elaborate an Action Plan for Energy in order to reduce its CO₂ emissions more than 20% by 2020.

The city's two Smart City applications; waste management and water supply have been selected for proof-of-concept implementation and evaluation in ALMANAC.

The results from ALMANAC will be used to evaluate and eventually re-design and improve the city's waste management and water supply services.

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