



## Open platform per i servizi al territorio: Una opportunità per ITS

**Lanfranco Marasso, Ph.D.**  
Smart City Program Director  
Engineering Ingegneria Informatica SpA

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FIWARE

# **BREVE INTRODUZIONE DEL MONDO D'OGGI**



# ... nel quadro di iniziative europee strategiche:

- Recovery plan
- EU2020
- European digital agenda
- Digital single market
- Junker plan

**... che hanno visto diverse azioni creare competenze e tecnologia “europee”:**

- **ETP: NESSI (2007)**
- **PPP: FUTURE INTERNET (2009)**
  - **FIWARE (2012)**
- **PPP: AIOTI (2015)**
- **cPPP: BDVA (2015)**
- **ECSO (2016)**
- ...



*FIWARE è la piattaforma di standard software pubblici, aperti, royalty-free, implementation-driven per sviluppare rapidamente e facilmente applicazioni smart nei diversi domini della nostra società*

# FIWARE: da dove arriva (1 - 2)

2009/10

- Inception of the “**Future Internet Public-Private Partnership**” (FI-PPP) by the European Commission and European industry



2011/12

- Development of the **generic software components** a.k.a. “Generic Enablers” by leading European industry and research organizations
- **Proof of concept in a few sectors** (smart cities, mobility, energy, environment, logistics, media & content, security)



2013/14

- Development of the generic components continues: **FIWARE catalog** becomes available
- **FIWARE nodes are set up**: FIWARE Lab and FIWARE Ops become available
- **Specific components** become available, **specific applications** are developed based on the FIWARE components in various sectors (smart cities, health, transport, energy and environment, agriculture, media & content, manufacturing, logistics, education)



# FIWARE: da dove arriva (2 - 2)

2014/15

- **Launch of FIWARE Accelerate:** start-ups and SMEs start developing applications and solutions based on FIWARE
- **First real scale test for FIWARE:** training and support become available
- **FIWARE expands beyond Europe:** a FIWARE node is made available in Mexico



2015

- An **open source community** is created around FIWARE components
- FIWARE plays a key role in the **Open & Agile Smart Cities Initiative**
- First **commercial FIWARE instances/nodes** become available
- FIWARE Lab nodes in **Brazil**, a FIWARE ecosystem is built in **Chile**; first FIWARE-based demo in Canada with University of Toronto and SAVI; FIWARE is a **Partner of GCTC2016**



2016

- A **FIWARE Foundation** is created
- FIWARE ecosystems are being set up in Europe and beyond (Latin America, Africa, North America, Asia)
- The number of application and solution developers is increasing all over the world
- Business partnerships and commercial service offers are being kicked off around FIWARE

## FIWARE: i numeri

≈ 200

Leading European  
organizations

(industry, SMEs, research institutes  
and universities) from 27 countries,  
including Telefonica, Orange, Atos,  
Engineering, IBM and many others

≈ 460 M\$

R&D  
investment

75

Cities  
involved

*(Open & Agile  
Smart Cities)*

19

FIWARE  
Lab Nodes

> 900

SMEs and  
Start-Ups

*(FIWARE Accelerate)*





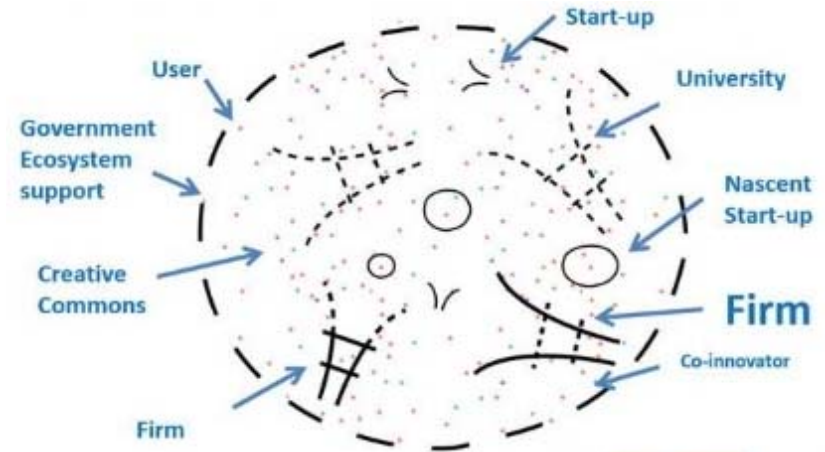
**Non è solo questione di tecnologia**



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**ALCUNI FATTI**

# Ecosistema digitale locale e piattaforme



**ICT Platform  
(APIs, data models)**



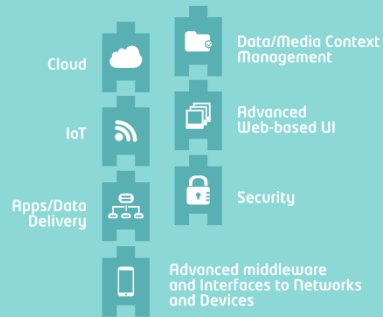
**Digital  
ecosystem**

# WHAT IS FIWARE?

1

## GENERIC ENABLERS

FIWARE assembles a set of building blocks that ease creation of smart Internet Applications. These blocks are called Generic Enablers and are ready available and ready to use. They offer reusable and common shared functions serving multiple use cases in various sectors



A set of **open source modular software components** that can be used, combined and/or integrated with other third party software to provide innovative solutions

**Focus on your added value** and re-use what is already available!



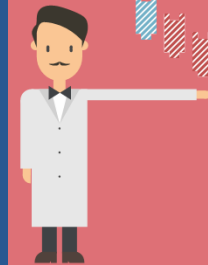
An integrated **lab environment** to make sure that your application or solution is **replicable** and **scalable**

And also...  
**Training and support;**  
and **specific tools** to operate physical nodes hosting FIWARE

## FIWARE Lab

2

The FIWARE Lab is an example of FIWARE instance available as a free experimentation environment where developers can build their applications using available FIWARE GEri instances, or dedicated instances they can deploy on their own. It not only allows them to experiment with FIWARE technologies, but test and showcase their applications with real data and users, making it easier to catch the attention of potential customers and investors.



4

## FIWARE Academy

The FIWARE eLearning Platform is a good place to start. Here you will find **webcasts, tutorials and other training material** about FIWARE Generic Enablers.

But FIWARE is only the first step to the future of your project, we need you to join us and be part of the new digital revolution that is coming! Welcome to FIWARE, welcome to progress.

## FIWARE Operations

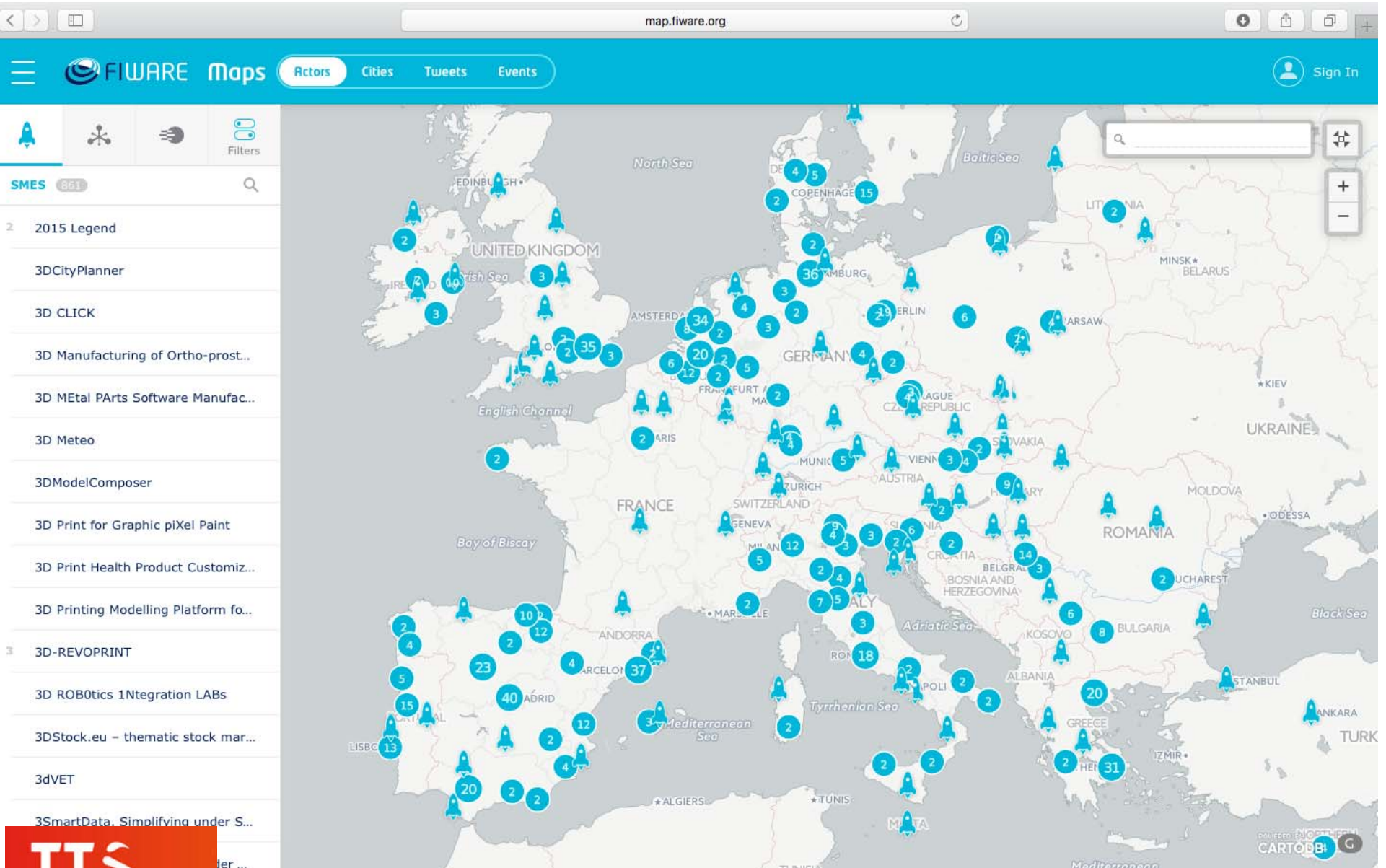
3

FIWARE Ops is the suite of tools that will ease creation and operation of FIWARE instances based on the federation of FIWARE nodes. It has been used to build and to support the expansion of the FIWARE Lab worldwide.





# Più di mille progetti in Europa...



# Più di mille progetti in Europa... anche in Campania

The screenshot shows the FIWARE Maps application interface. The top navigation bar includes the FIWARE logo, the word 'Maps', and tabs for 'Actors', 'Cities', 'Tweets', and 'Events'. A 'Sign In' button is on the right. On the left, a sidebar lists various projects under the 'SMES' category, including '2015 Legend', '3DCityPlanner', '3D CLICK', '3D Manufacturing of Ortho-prost...', '3D Metal PARTs Software Manufac...', '3D Meteo', '3DModelComposer', '3D Print for Graphic piXel Paint', '3D Print Health Product Customiz...', '3D Printing Modelling Platform fo...', '3D-REVOPRINT', '3D ROB0tics 1Ntegration LABs', '3Dstock.eu - thematic stock mar...', '3dVET', and '3SmartData. Simplifying under S...'. The main map area shows Europe with many blue rocket icons indicating project locations. A pop-up window titled 'Web Store Of One-Print Licenses To Spread 3D Models Development' is overlaid on the map, showing a URL and a description of the Wop3D project. The pop-up also features a small image of a 3D printer and the FABLESS logo.

**Web Store Of One-Print Licenses To Spread 3D Models Development**  
<http://www.fablessy.com>

Do you want to try shopping of the future?

**FABLESS**  
stay tuned

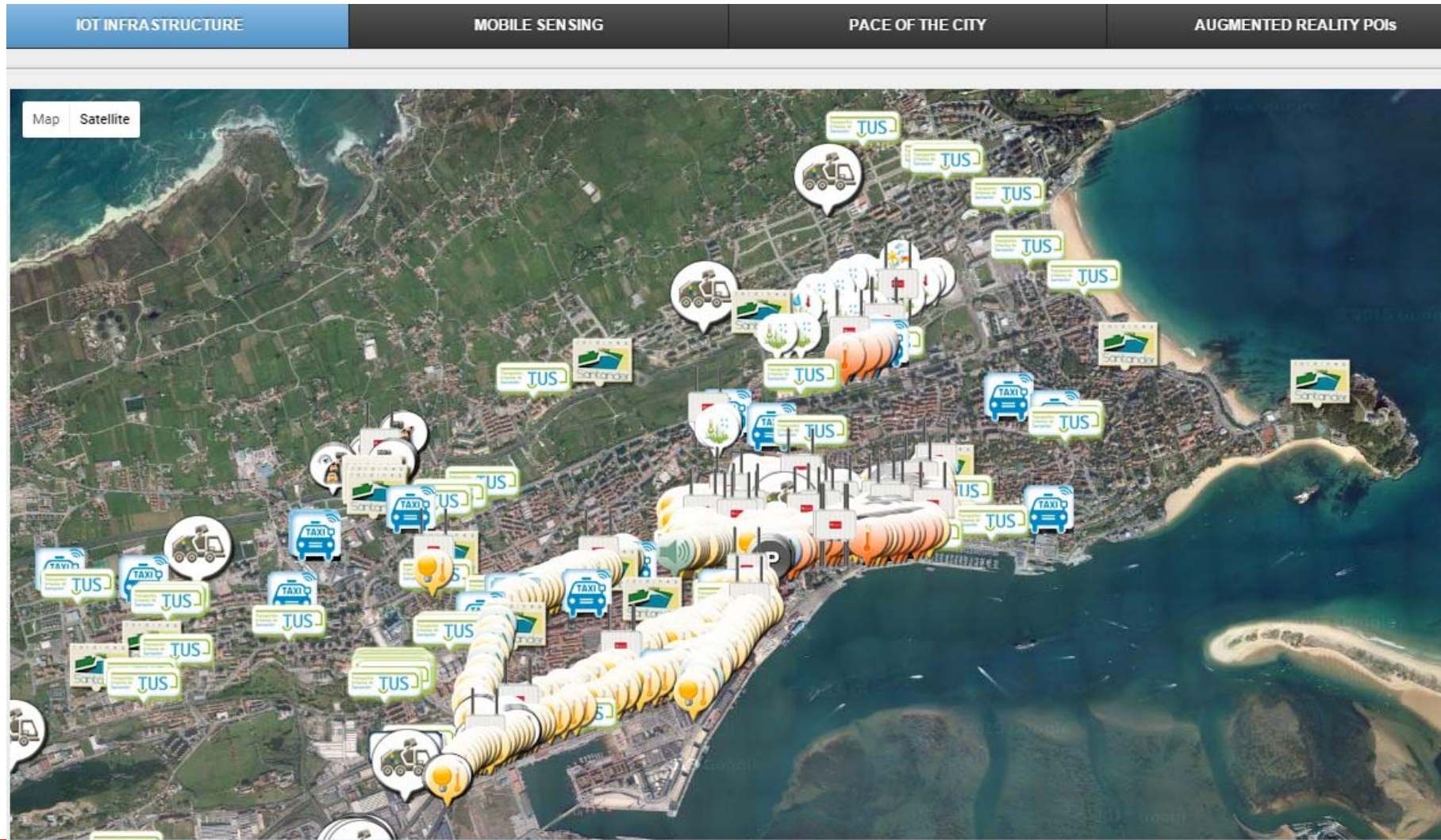
Wop3D is a digital web store, whose purpose is to collect 3D printing models, created by us or third parties and to sell them for a single print. The strength of Wop3D lies in the innovative purchasing system: users can't buy any model, nor printable, nor generic license, but just acquire the right to print the required object once. This system will free the designers from costs in protecting their works, still having some sort of protection of intellectual property, hence assuring an income chance. On the other hand, people interested in buying have a...

FIWARE

# **ALCUNE APPLICAZIONI**



# A smart city app: [maps.smartsantander.eu](http://maps.smartsantander.eu)





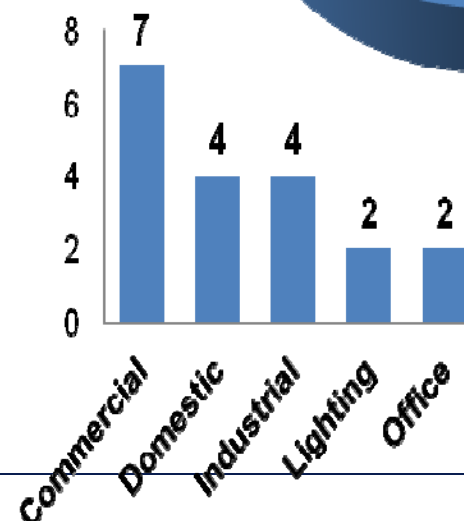
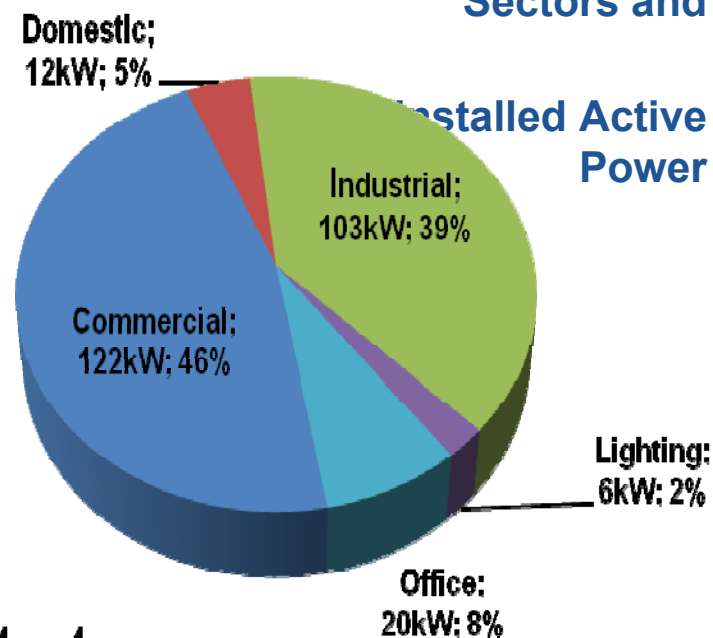
# A green energy app: TERNI marketplace

30% of the energy in the city of Terni is produced by distributed and renewable energy sources. While this derives benefits, as expected by the EU 20-20-20 objectives ...



## Sectors and

## Installed Active Power



● Number of users per sector: 19

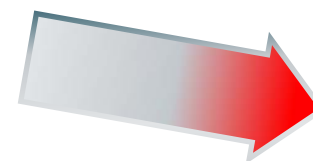
● 2 PV → 215 kW

# An Industry 4.0 app

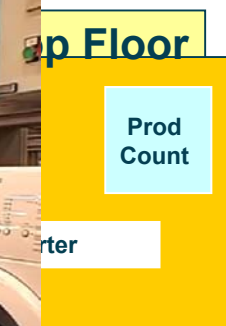
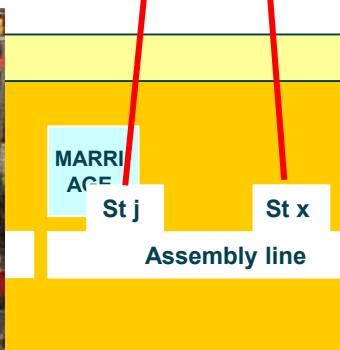
Opportunity for improvement	How to do it
Huge amounts of raw data are collected every day, but remain <b>silent</b>	Extract <b>information</b> from existing data
Humans <b>waste</b> valuable time analyzing critical situations on the spot	Make information <b>reach</b> the proper audience via cloud-enabled mobile devices



Cloud Services

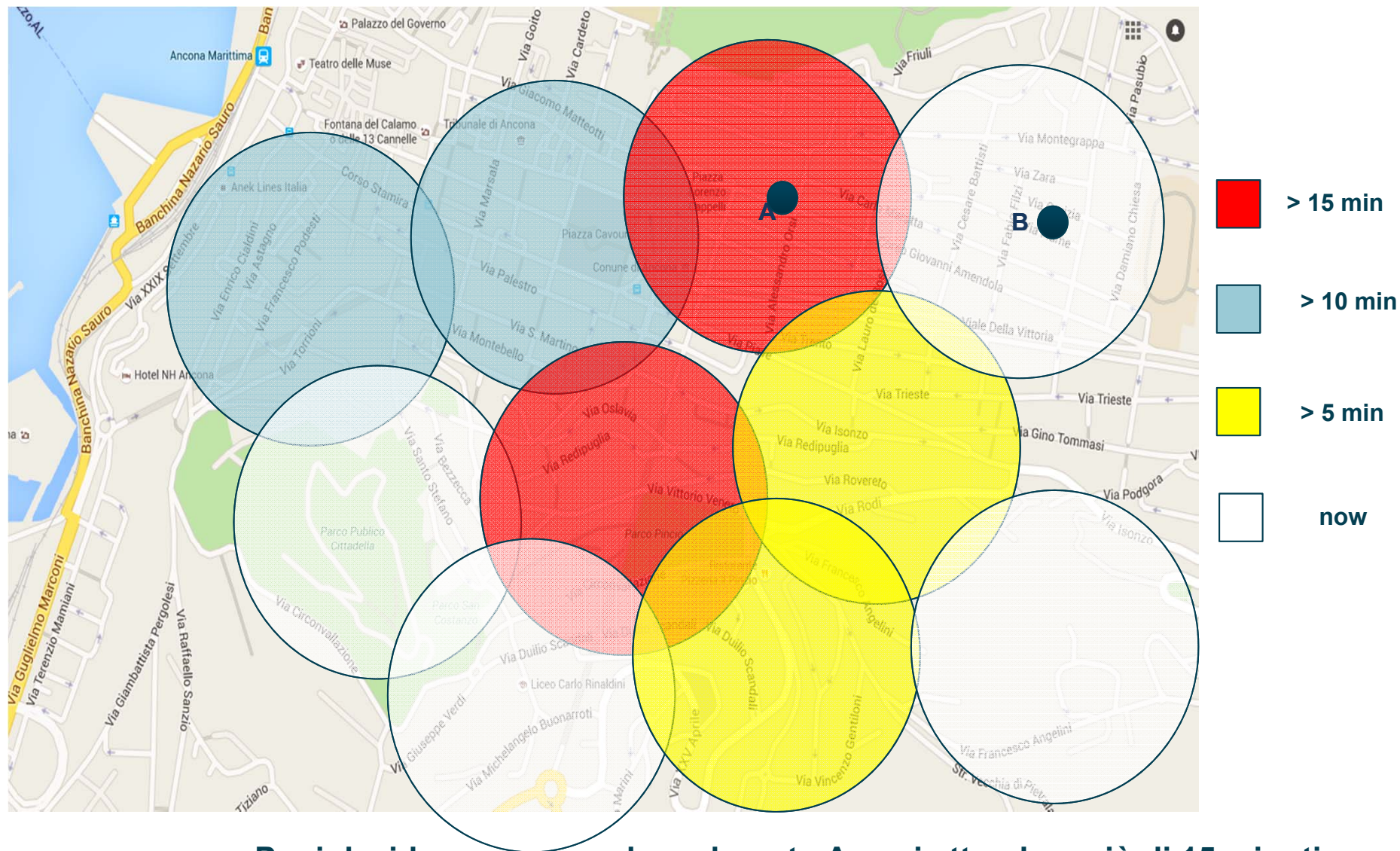


16.12.2015 - Ancona





# Le info al guidatore



**Puoi decidere se per andare al punto A vuoi attendere più di 15 minuti, oppure parcheggiare in B (subito) e poi camminare/prendere bus per 5 minuti**

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# LA GOVERNANCE

FIWARE Foundation è una entità legale open e indipendente che promuove, sostiene e garantisce gli utenti per l'**evoluzione di FIWARE come standard europeo per le Smart Cities, Smart agricolture e Industry4.0**



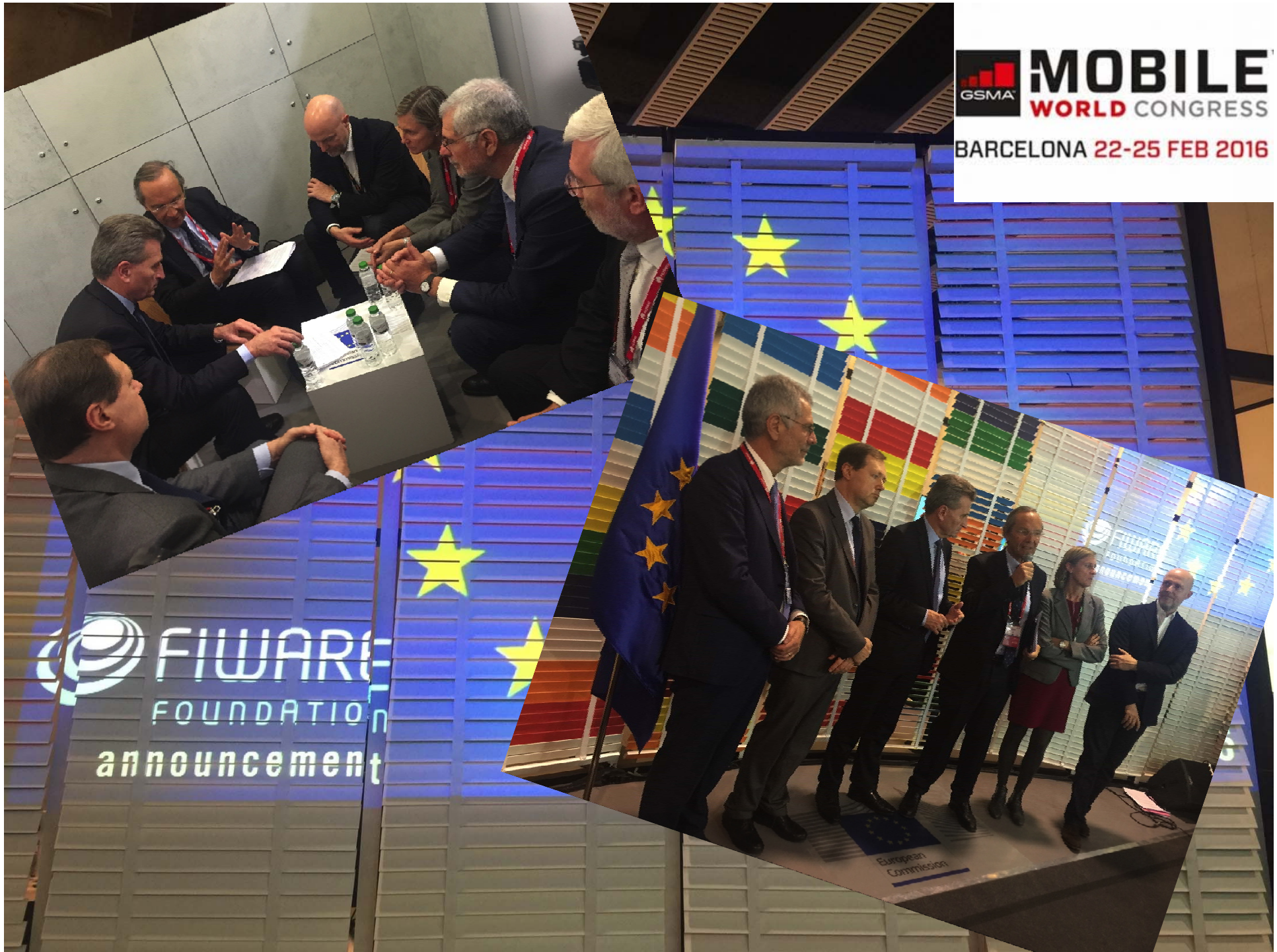
**NEC Japan, altri 10 membri alla data**

**Lancio ufficiale al World Mobile Congress, Barcellona, 23 febbraio 2016 alla presenza del Commissario Oettinger**

**Costituzione 15 settembre con sede a Berlino**



 **MOBILE**  
WORLD CONGRESS  
BARCELONA 22-25 FEB 2016



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**FIWARE PER I TERRITORI**

# Dilemma: the chicken & egg ovvero da dove partiamo?



**Cities &  
Communities**

**Developers &  
integrators**

**De facto standards  
(platform)**



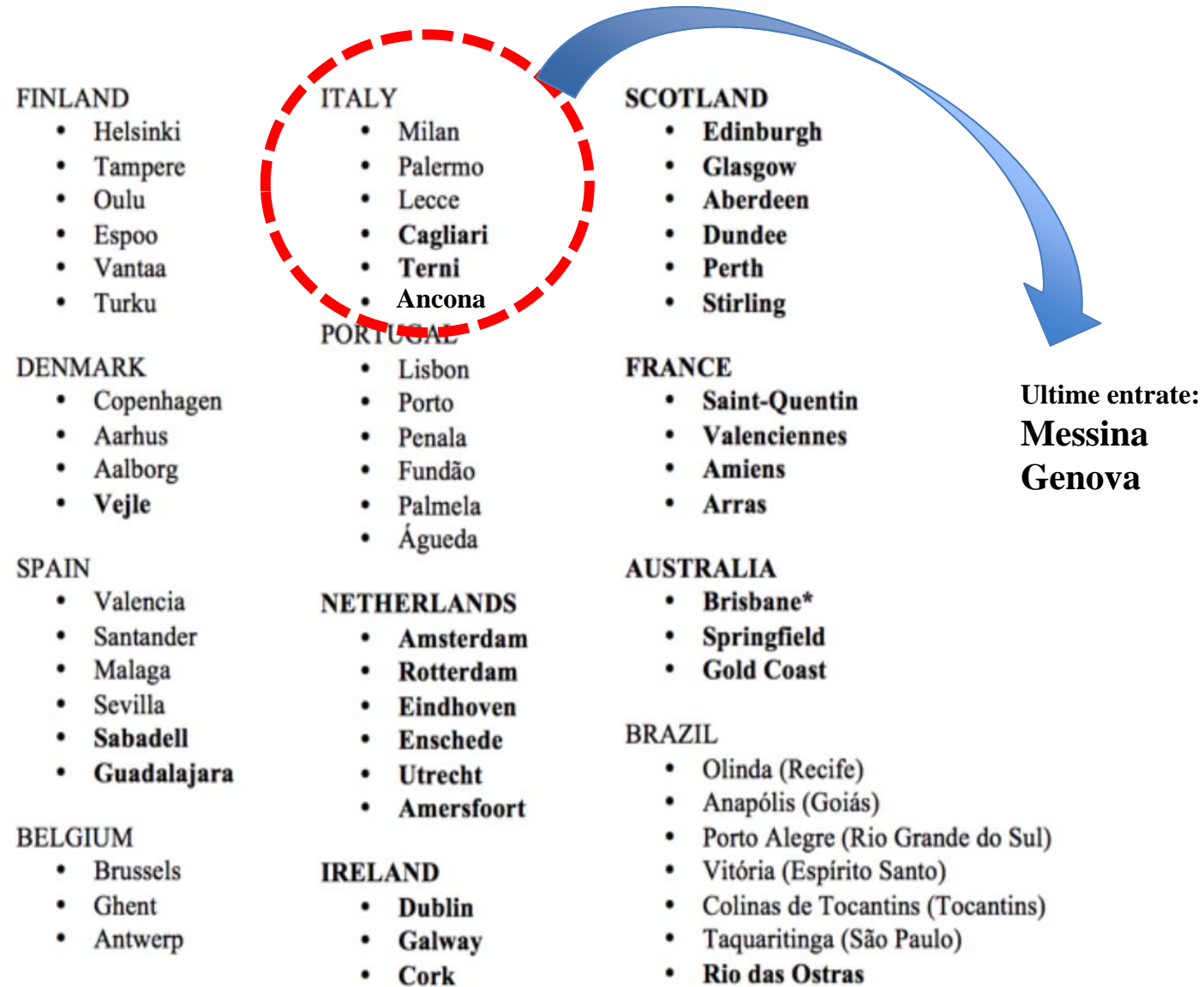


- Common APIs → FIWARE NGSI
- Standard Data Models → CitySDK
- Open Data Platform / API publication
- Approccio Driven by implementation

\* [www.oasc.org](http://www.oasc.org)

# Open & Agile Smart Cities

(more than 100 cities all around the world - feb 2017)

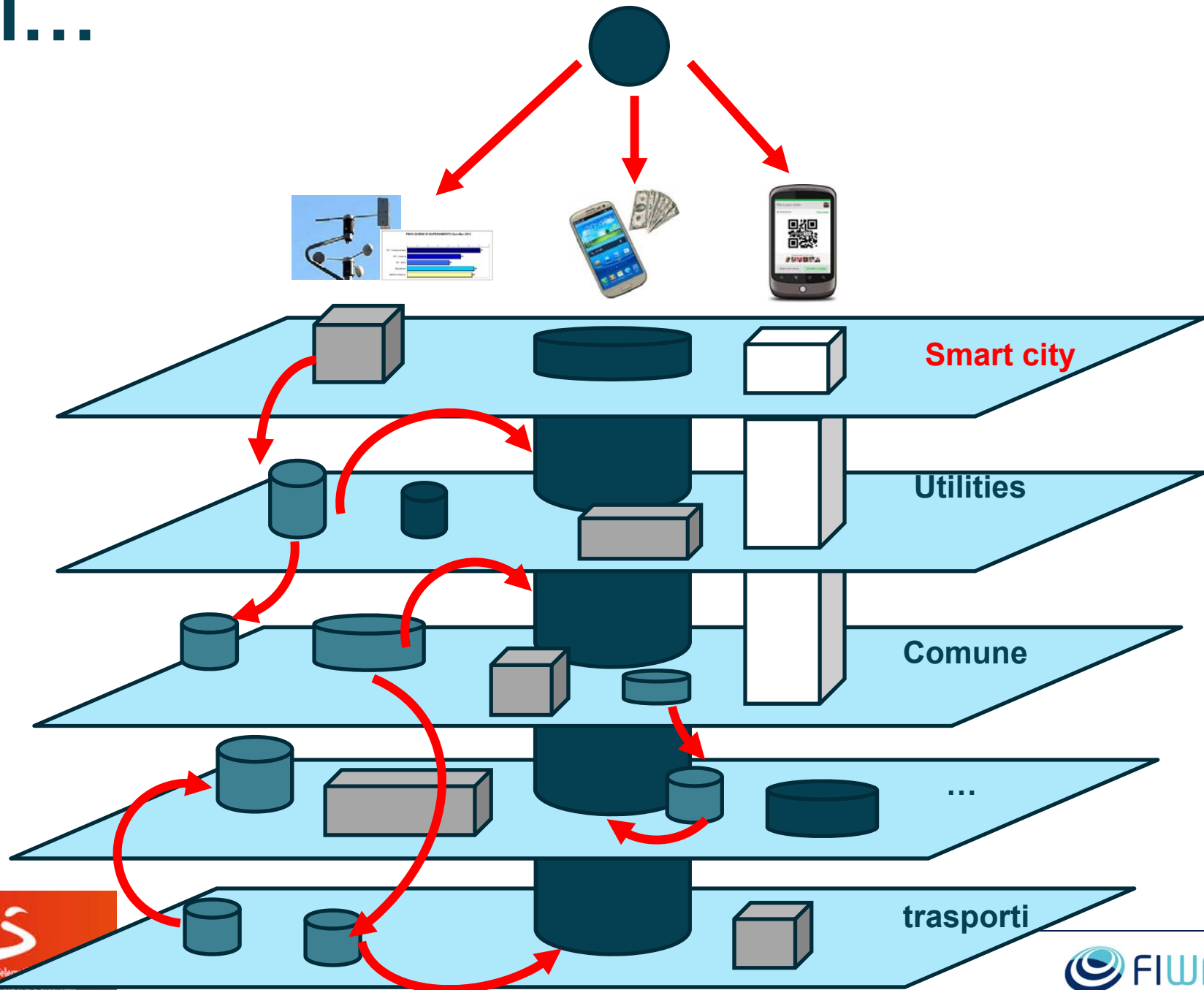




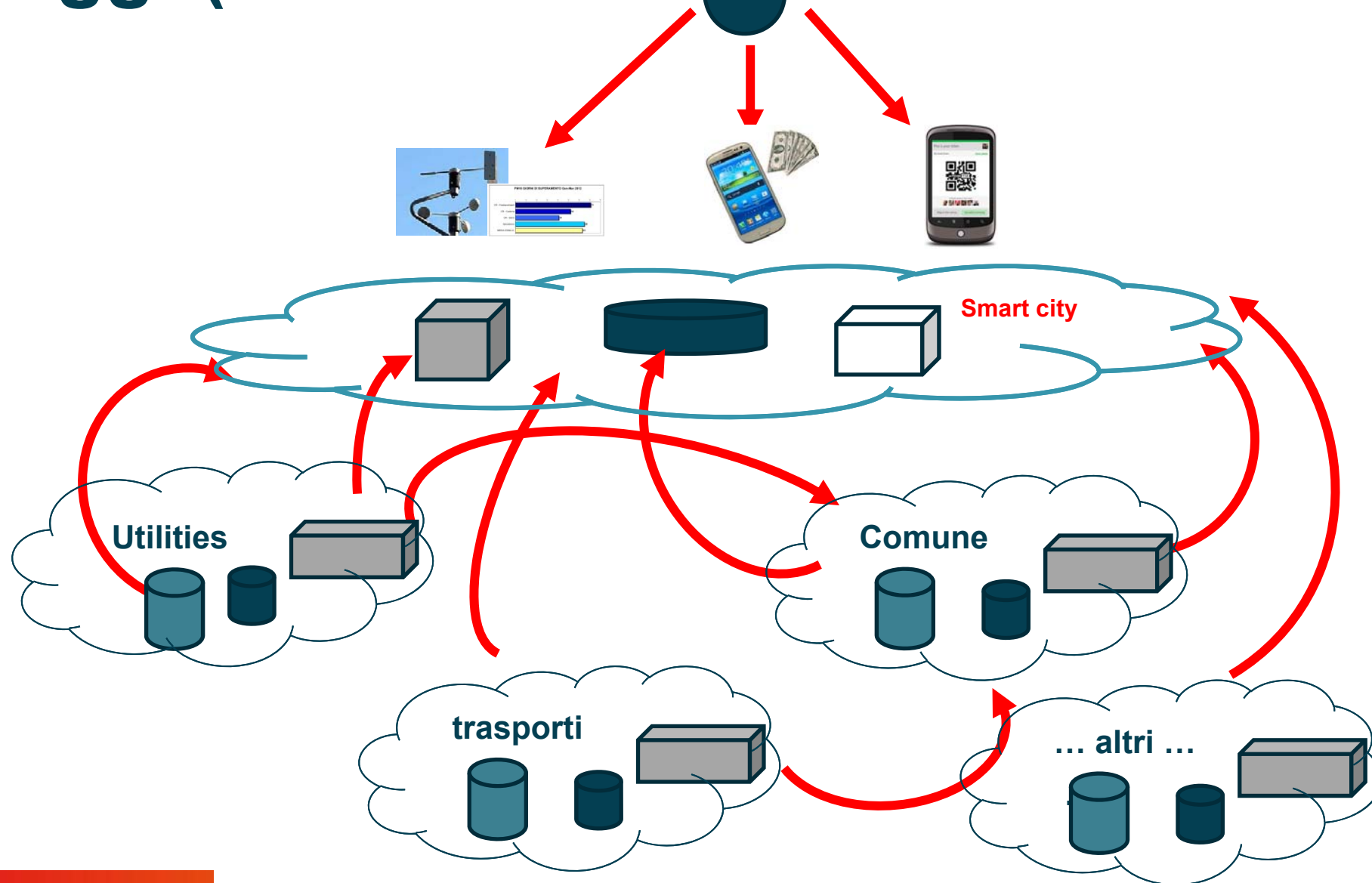
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# COME EVOLVONO LE APPLICAZIONI CON FIWARE

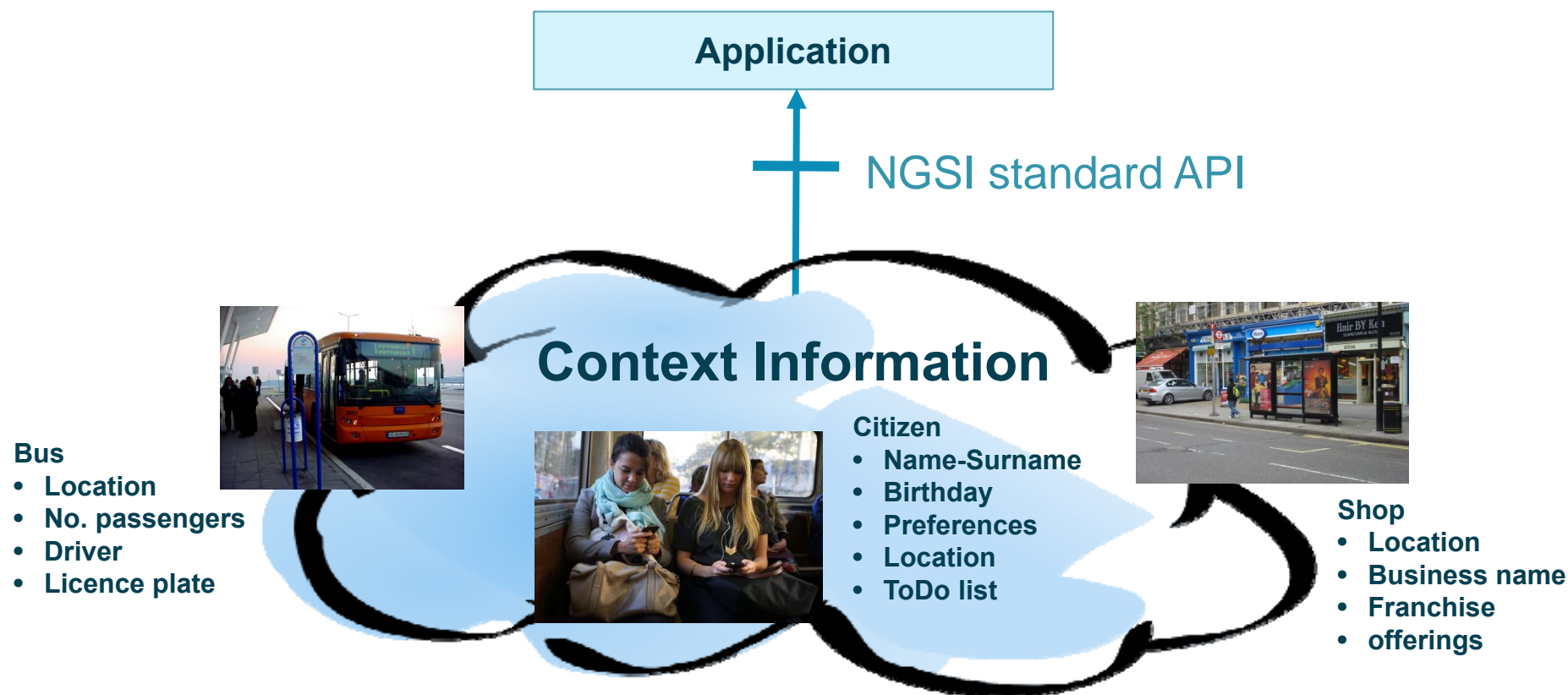
# Ieri...



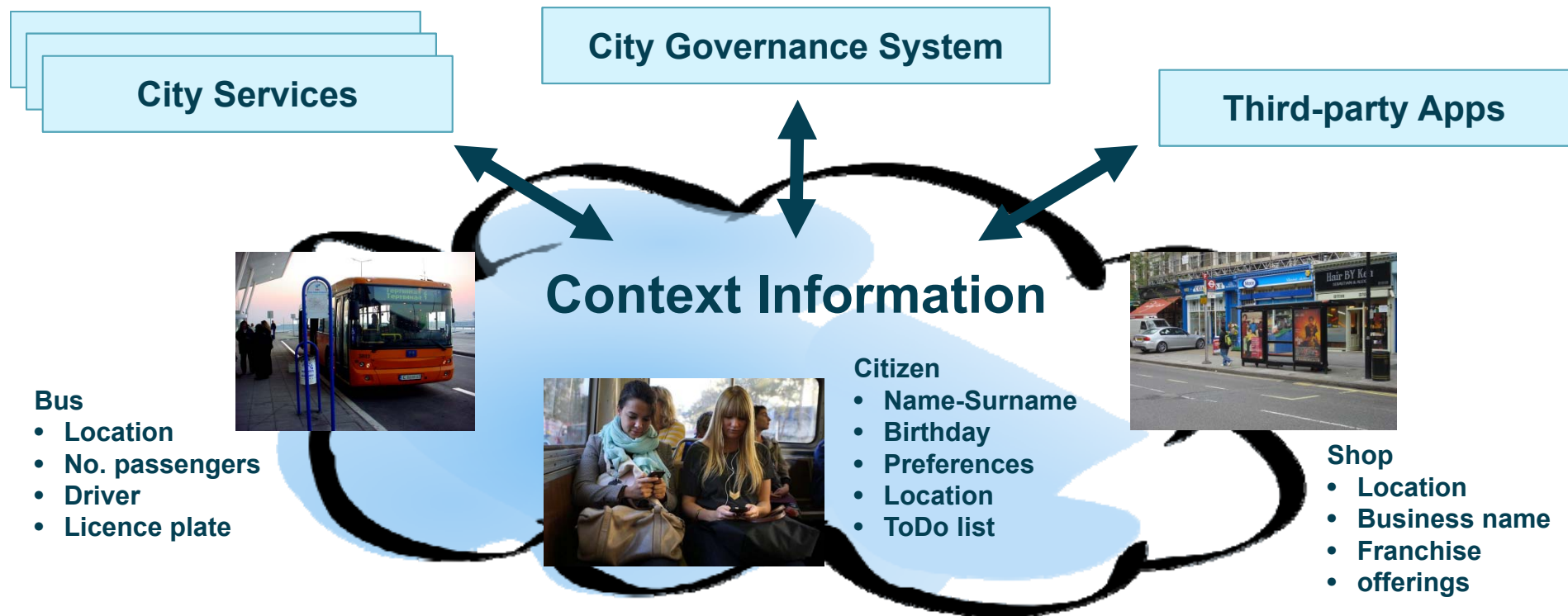
# Oggi (non domani!)



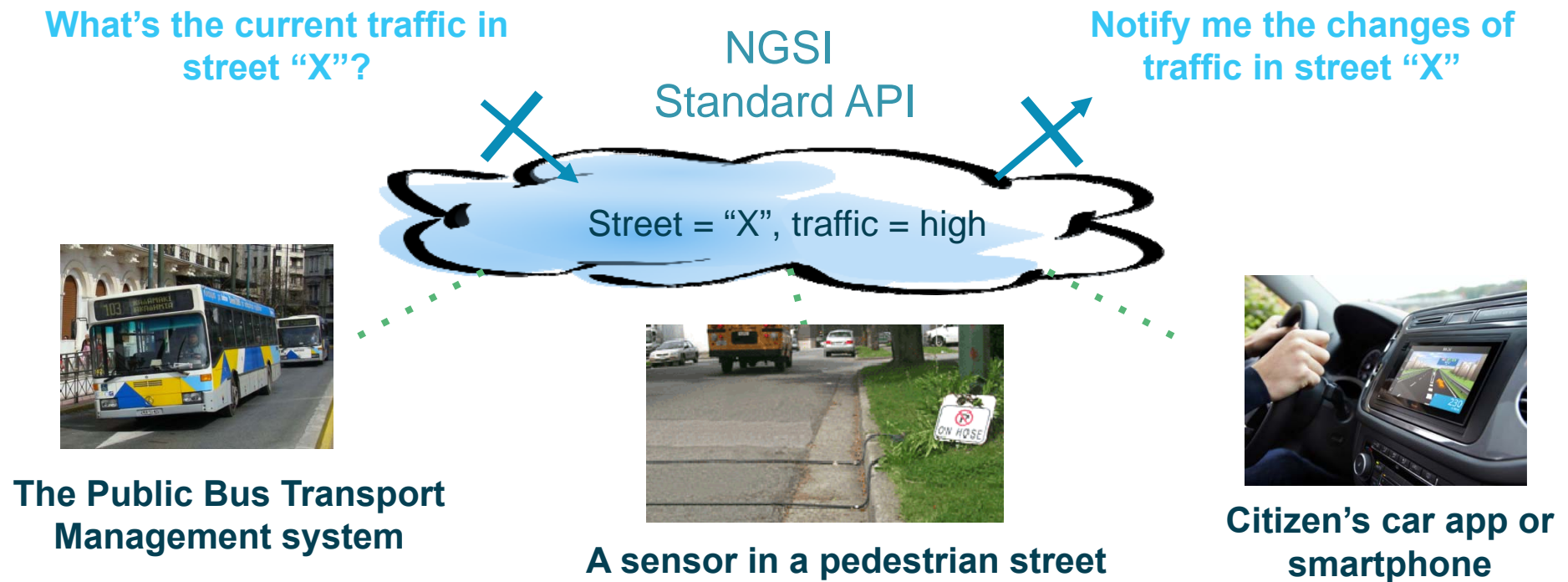
# Essere “Smart” richiede prima di essere “Aware”



# Multiple system/apps can exploit context info

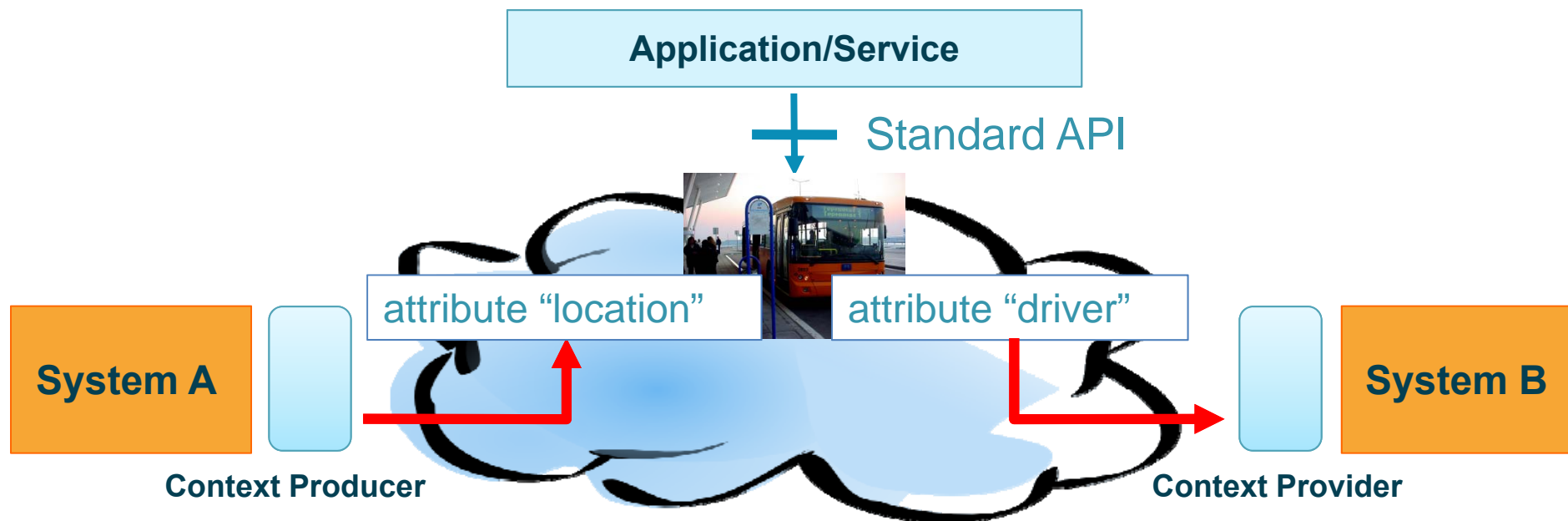


# Different sources of context need to be handled





# Approccio non-intrusivo



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# QUALE È IL NOSTRO CONTRIBUTO A ITS

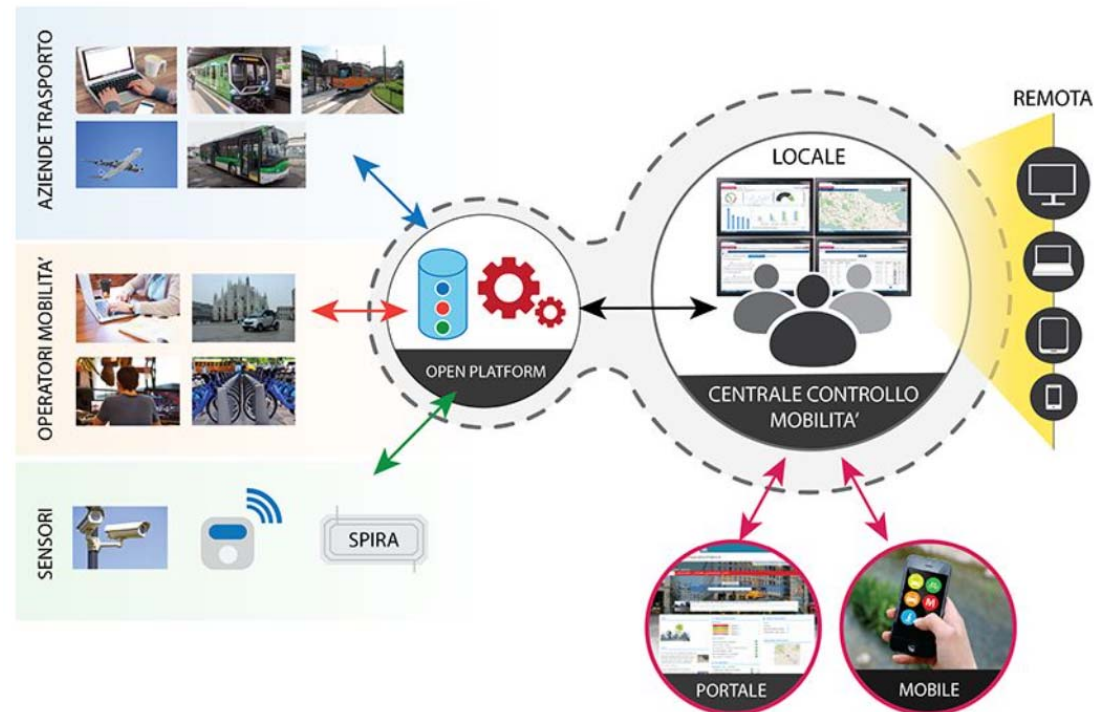
# Le soluzioni di Engineering in tema "ITS - Intelligent Transportation Systems".

Le piattaforme Centrali di Controllo Innovative, locali o distribuite, per quanto riguarda:

- la mobilità in una città
- il trasporto pubblico
- le merci pericolose
- la sicurezza sulle strade.

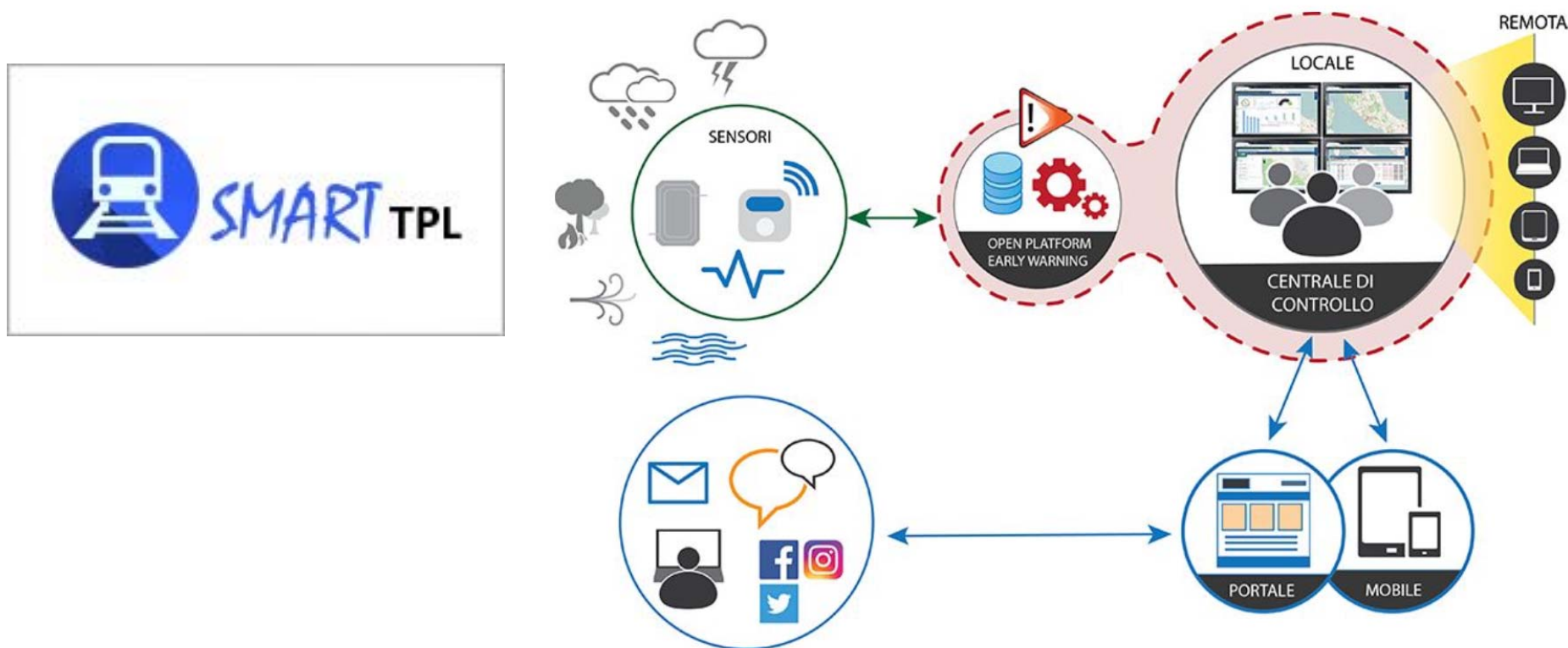
è una open platform per la realizzazione di centrali di controllo della mobilità ed è rivolta agli Enti che vogliono:

- monitorare e controllare la mobilità del proprio territorio
- vogliono trasferire ai cittadini informazioni e soluzioni di mobilità sempre aggiornate in tempo reale.



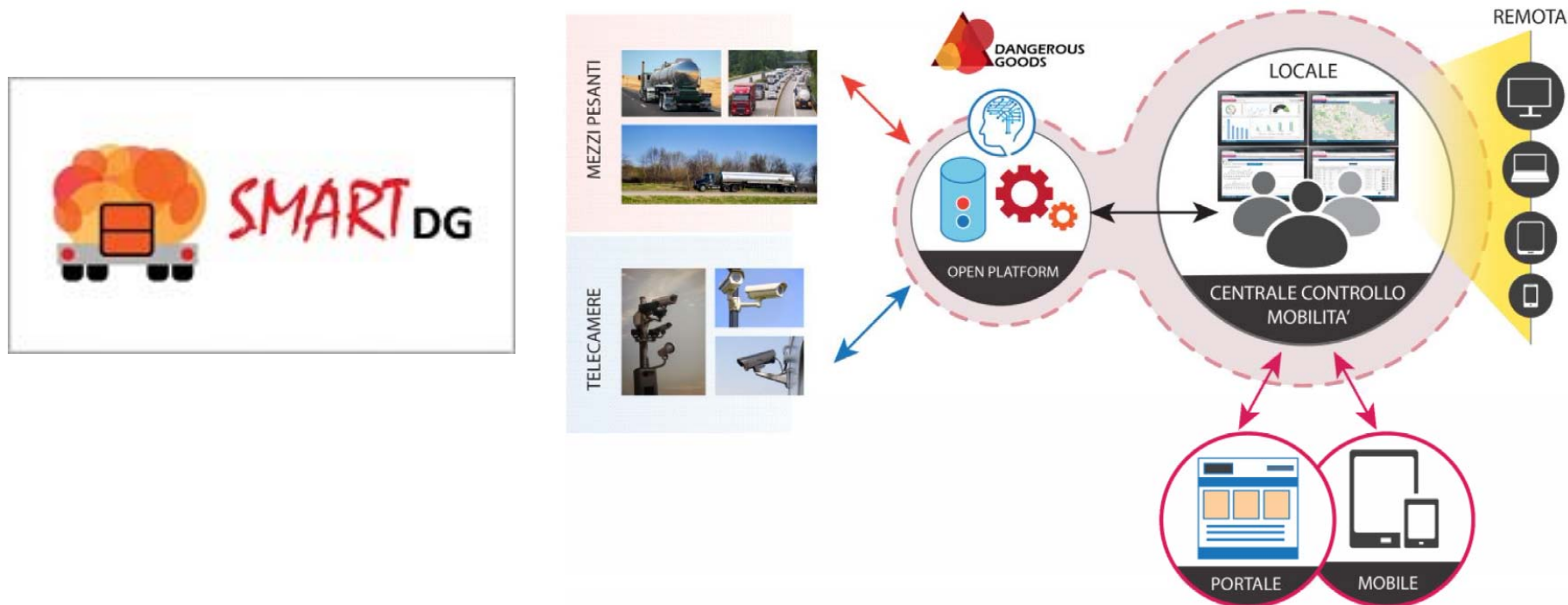
## Smart-TPL e in particolare il modulo *Smart-TPL Tracking* implementa un Centro di Controllo del Trasporto Pubblico Locale

- per le Aziende che hanno necessità di monitorare e controllare i propri mezzi,
- per Regioni, Bacini, Città Metropolitane, Comuni, che svolgono attività di gestione e controllo.

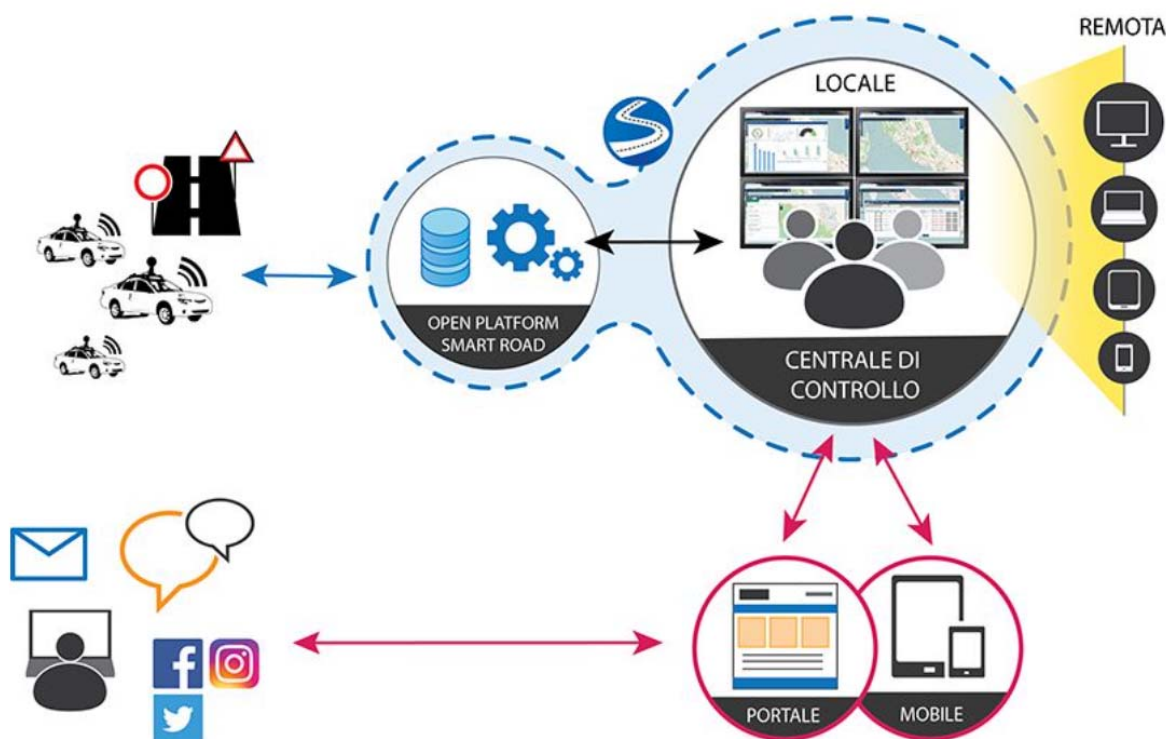


## Smart-DG implementa un Centro di Controllo per il monitoraggio del Trasporto delle Merci Pericolose, per

- Enti per il monitoraggio del territorio ed elaborazione di Mappe del Rischio
- Aziende per la pianificazione e il monitoraggio dei propri mezzi.



- **Smart-ROAD** è una open platform per il monitoraggio della sicurezza stradale rivolta agli Enti che, in riferimento al Piano Nazionale per la Sicurezza Stradale (PNSS), hanno necessità di un sistema che consenta di disporre di dati di incidentalità costantemente aggiornati e di informazioni utili al miglioramento delle condizioni di sicurezza relativi alla rete e alle infrastrutture stradali di propria competenza.



## FIWARE, relevant domestic documents

<https://ec.europa.eu/digital-single-market/en/news/communication-digitising-european-industry-reaping-full-benefits-digital-single-market>

<https://ec.europa.eu/digital-single-market/en/news/staff-working-document-advancing-internet-things-europe>



# International relationship & network (sept

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### The White House

Office of the Press Secretary

For Immediate Release

September 26, 2016

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## FACT SHEET: Announcing Over \$80 million in New Federal Investment and a Doubling of Participating Communities in the White House Smart Cities Initiative

*"If we can reconceive of our government so that the interactions and the interplay between private sector, nonprofits, and government are opened up, and we use technology, data, social media in order to join forces around problems, then there's no problem that we face in this country that is not soluble." – President Barack Obama*

With nearly two-thirds of Americans living in urban settings, many of our fundamental challenges—from climate change to equitable

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NIST and its collaborators are announcing a new international coalition dedicated to developing an **Internet of Things-Enabled Smart City Framework**, with an initial release planned for next summer. Through an open, technical working group studying real-world smart city applications and architectures, the coalition will identify **pivotal points of interoperability**, where emerging alignment on standards can enable landscape of diverse but interoperable smart city solutions. Coalition members include the American National Standards Institute, the U.S. Green Building Council, the Republic of Korea's Ministry of Science, ICT, and Future Planning, **the Italian Energy and Innovation Agency**, the European Telecommunications Standards Institute, and the **FIWARE Foundation**.

Vetoed Legislation

Nominations &  
Appointments

Disclosures

*forces around problems, then there's no problem that we face in this country that is not soluble." - President Barack Obama*

With nearly two-thirds of Americans living in urban settings, many of our fundamental challenges—from climate change to equitable

## contact



[www.eng.it](http://www.eng.it)



@lmarasso

@EngineeringSpa



[lanfranco.marasso@eng.it](mailto:lanfranco.marasso@eng.it)



lanfranco.marasso

# Grazie per la Vostra attenzione



<http://fiware.org>

<http://lab.fiware.org>

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