



IoT & Crowd Sourcing

Supporting smart cities

WSIS 2015

Geneva



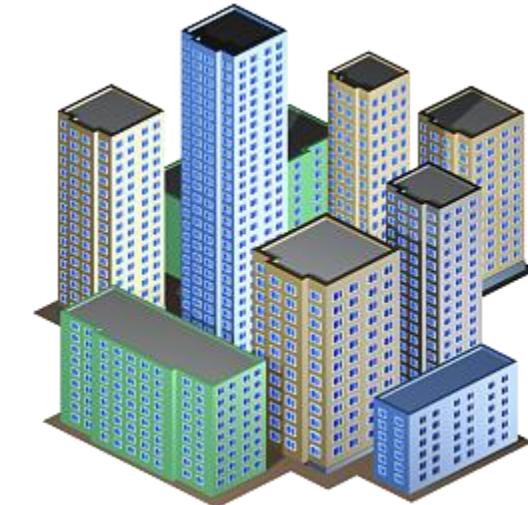
Sébastien Ziegler
sziegler@mandint.org
May 25 2015

IoT Lab
European Research Project

Many opportunities for IoT use:

- Environmental monitoring**
- Transportation and mobility**
- Waste management**
- Energy efficiency and smart grid**
- Water management**
- Security and Safety**
- eHealth**
- eGovernance, etc.**

Dual set of requirements



Technical requirements

Scalability

Reliability and QoS

Interoperability

Security / privacy

Portability

Cost

Sustainability



User requirements

User acceptance

Priority management

Citizens satisfaction

Resource allocation

Customization

Cross-domain integration





**To research the potential of crowdsourcing
for the Internet of Things (IoT)**

**To extend test bed infrastructures
for multidisciplinary experiments
with more end-user interactions.**



Interrelated projects



IoT Lab
European Research Project

**MANDAT
INTERNATIONAL**

 UNIVERSITY OF
SURREY

 UNIVERSITÉ
DE GENÈVE


computer
technology
institute & press



UNIS Smart Campus

200 fixed IoT units: SmartPlogg (1000+ sensors), 100 embedded GWs,
100 mobile IoT units, 10 smart displays, 30 smartphones



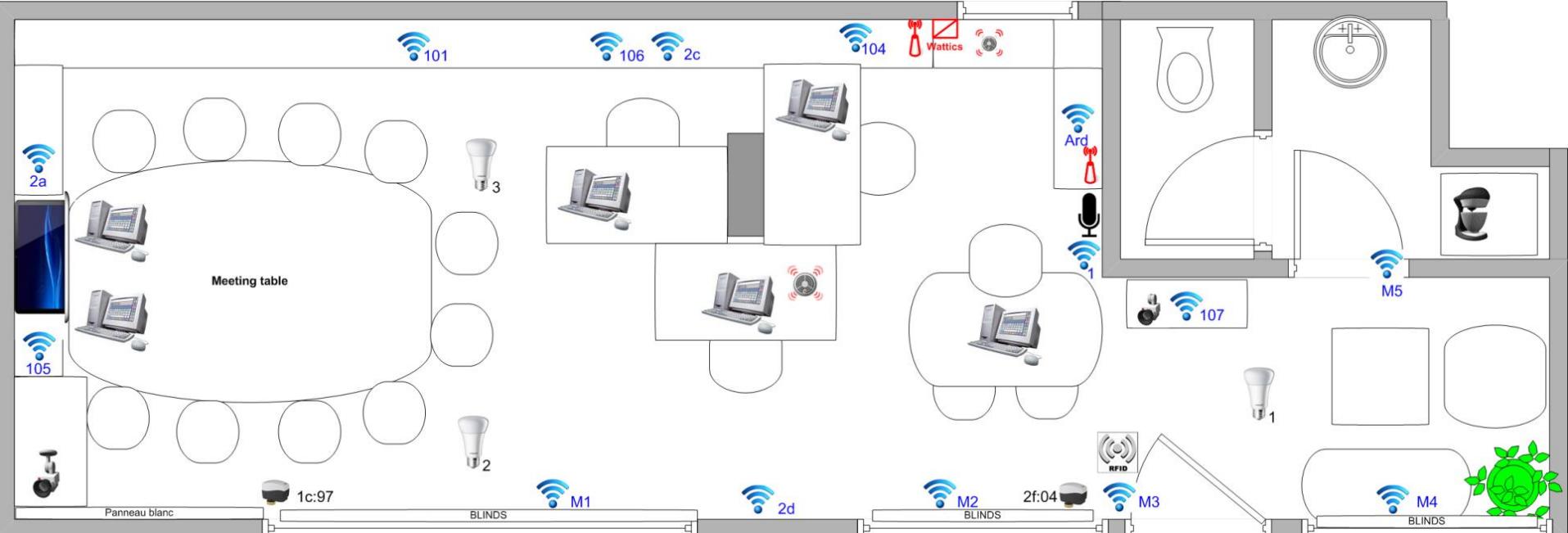


Heterogeneous sensors
and actuators + energy metering

Functional areas:

- Meeting space
- Office desks / work stations
- Lounge area
- Kitchen / Toilets

IPv6 and 6LoWPAN/CoAP environment + heterogeneous communication protocols





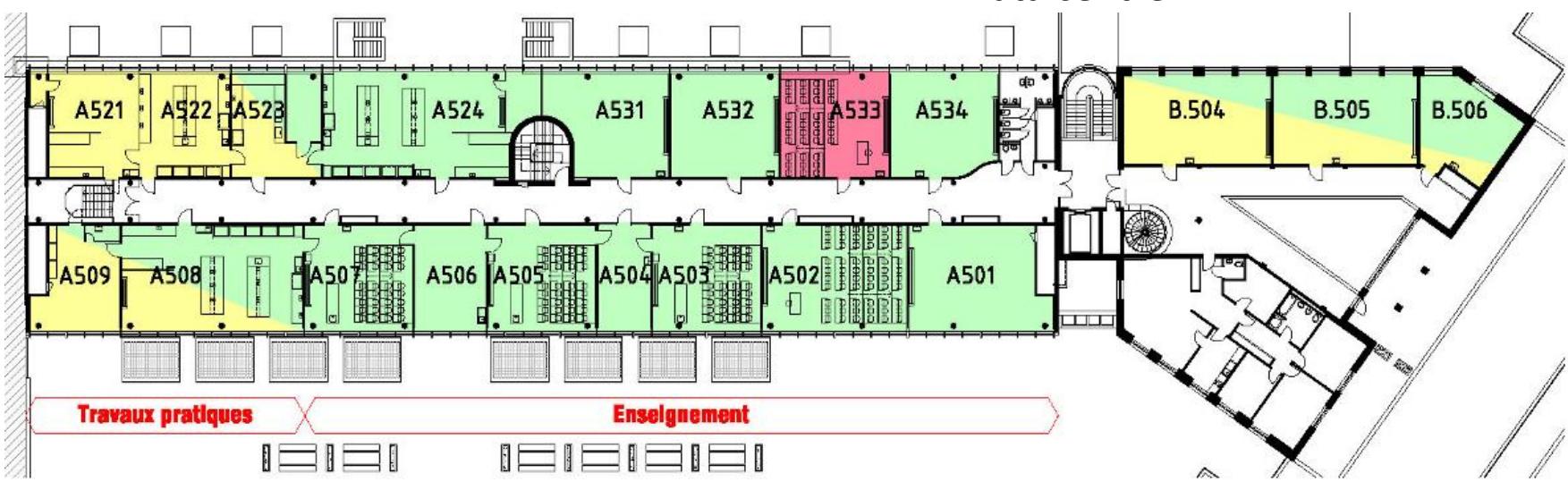
Focus: 4th and 5th floor

Facades exposition: South and North

Sensors, actuators and energy meters

Functional areas:

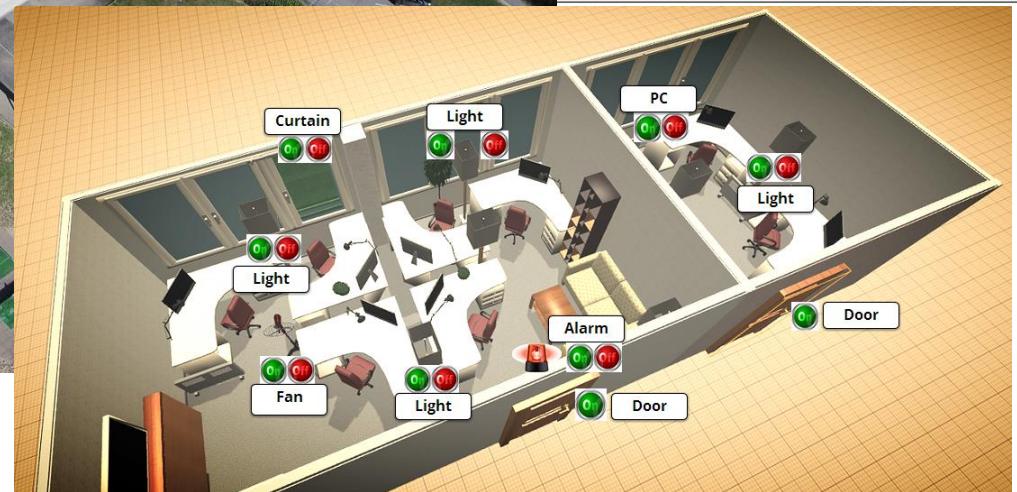
- Class rooms
- Office spaces
- Lobby
- Toilets
- Technical areas
- Data centre



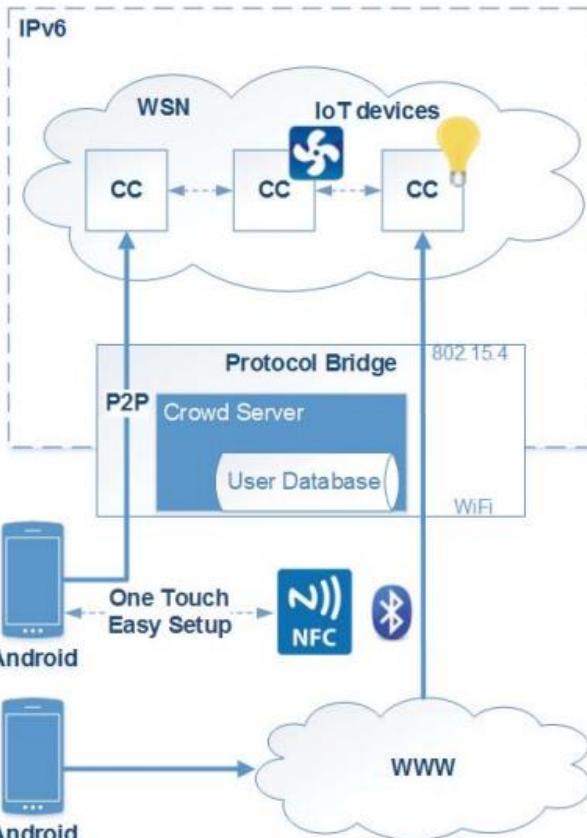
University of Geneva



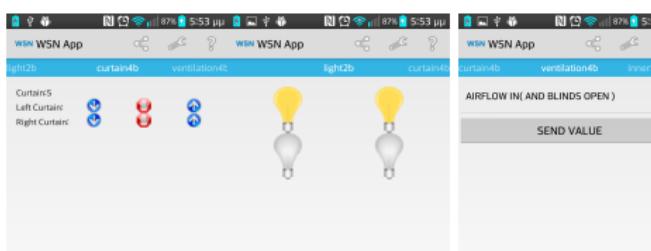
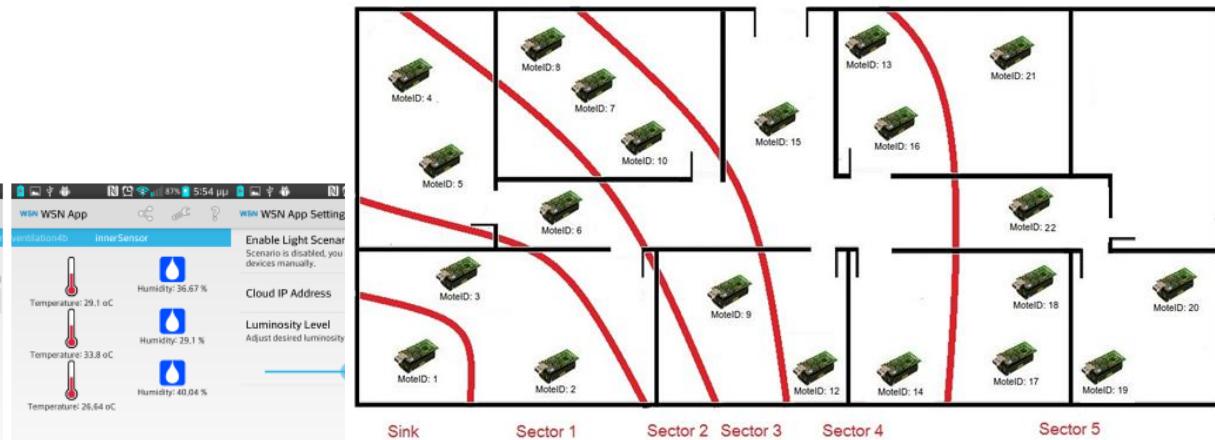
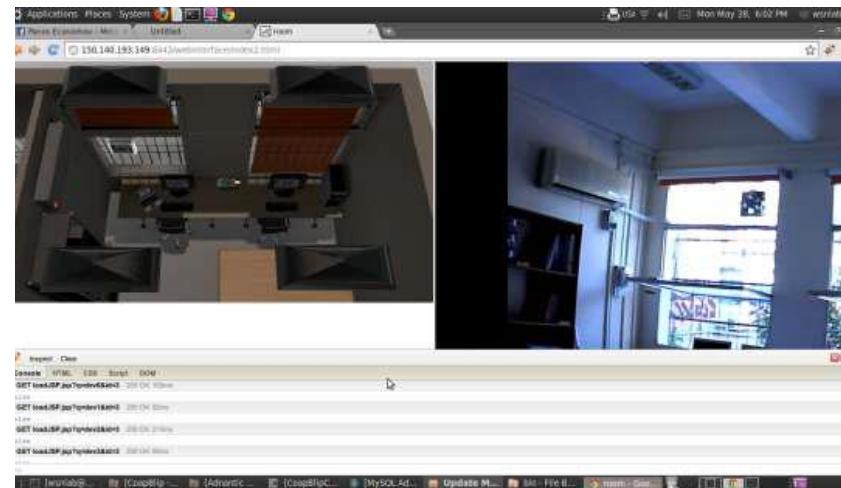
WSN TelosB, Waspmotes,
actuators, RFID, etc.
CoAP environment



CTI Patras

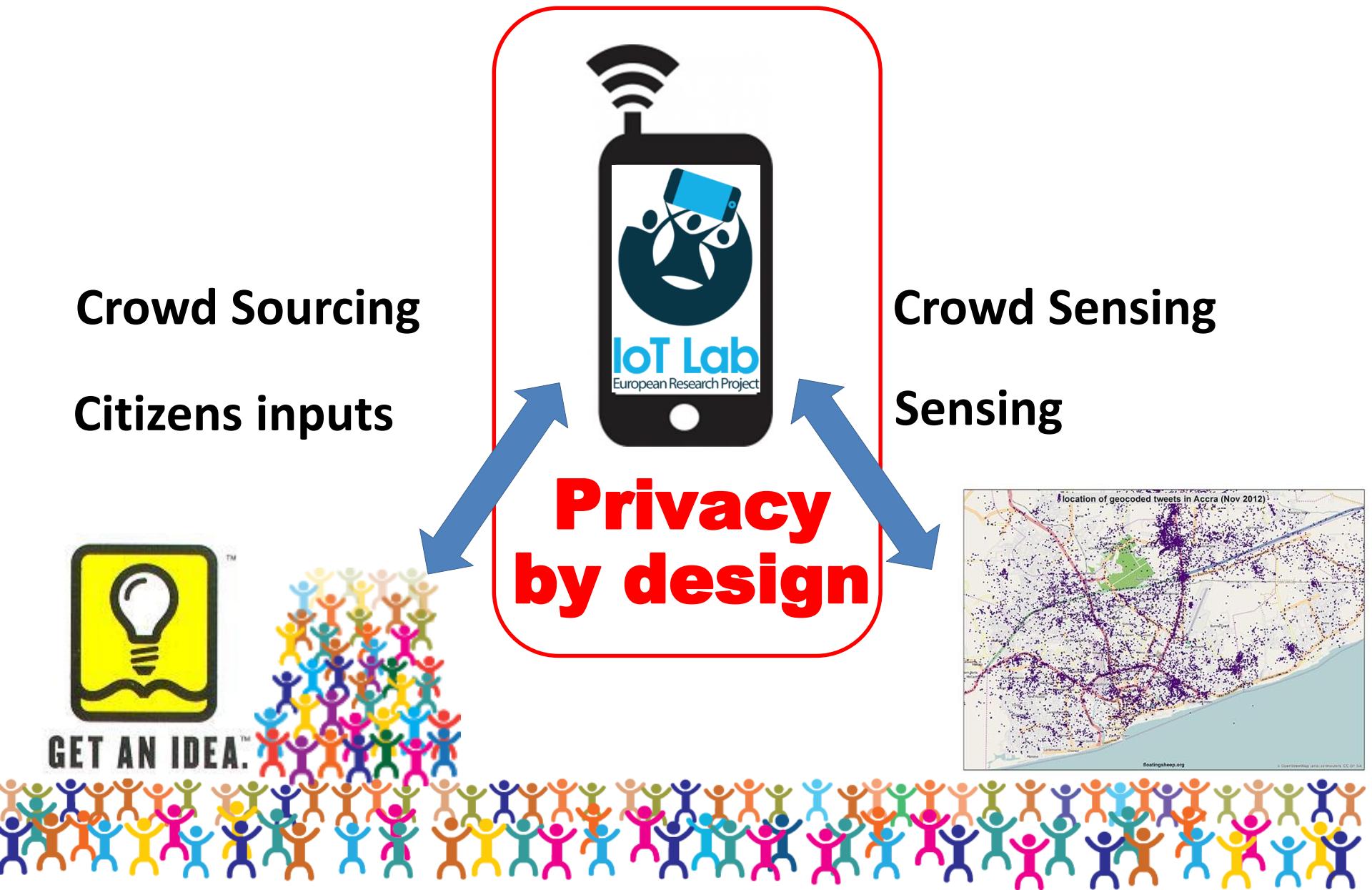


Diverse sensor motes (TelosB, Iris), Android smartphones
 Electricomechanical devices (lights, HVAC, curtains, etc.)
 Control Cube actuators, Smart power meters, etc.



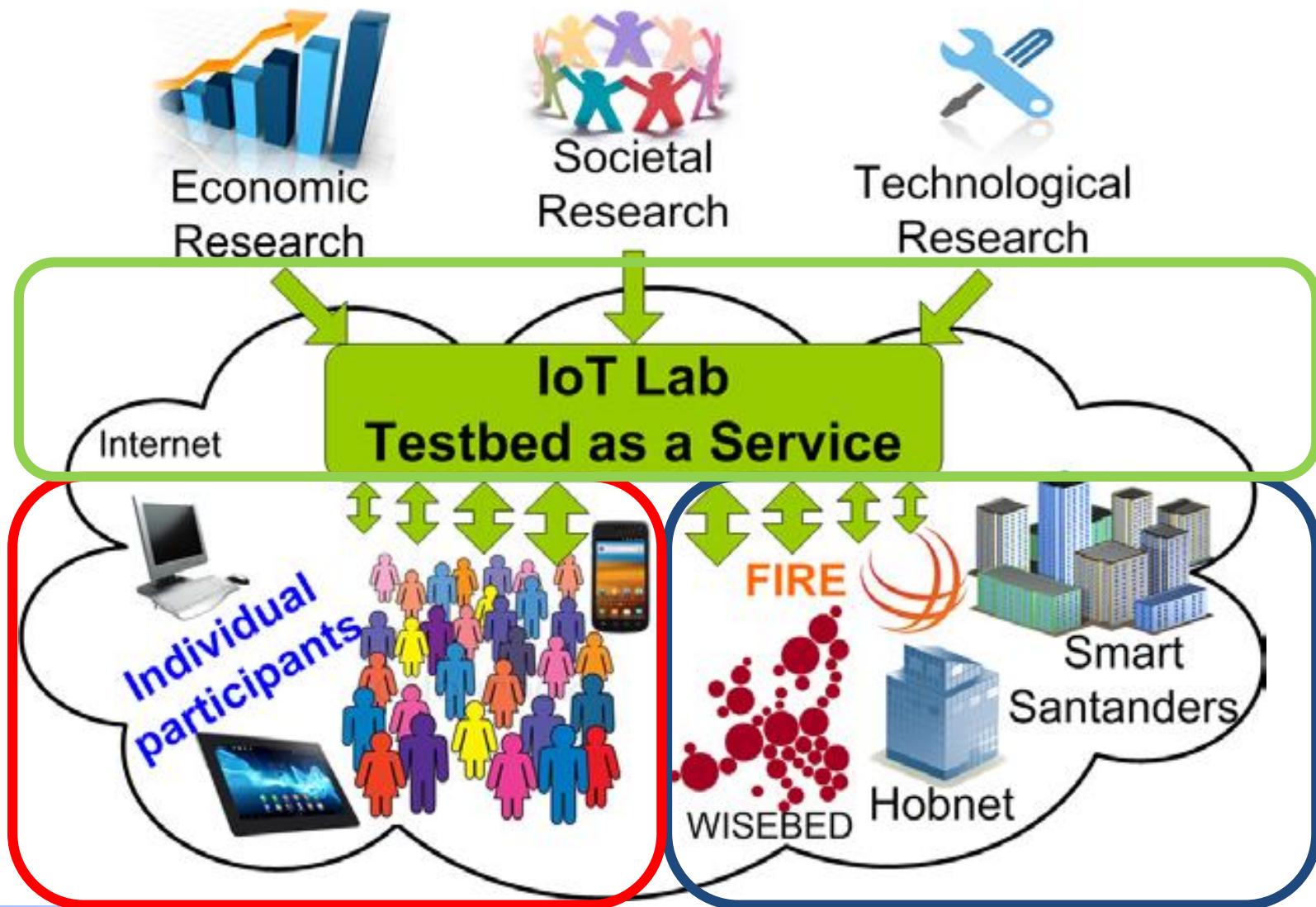


Crowd Sourcing Tool



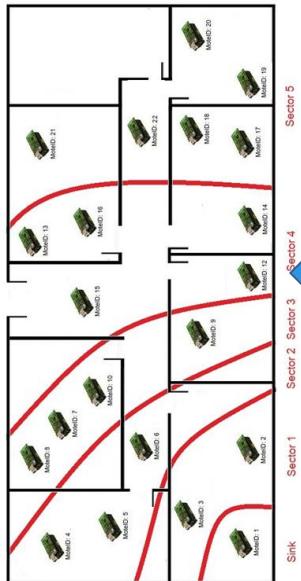
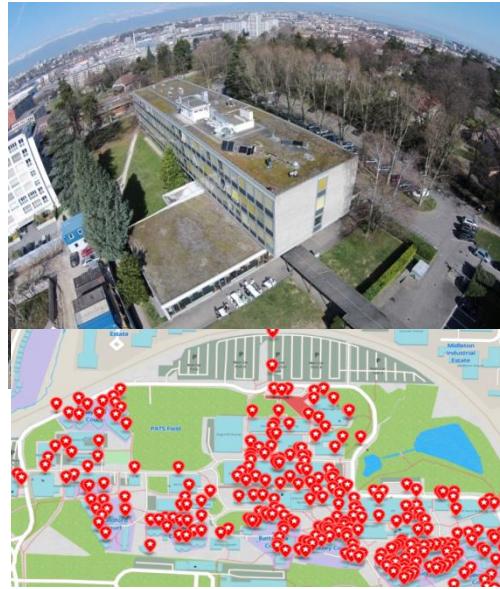


IoT Lab as a Service





Paradigm shift





New venues



Anywhere

Pervasive urban testbed



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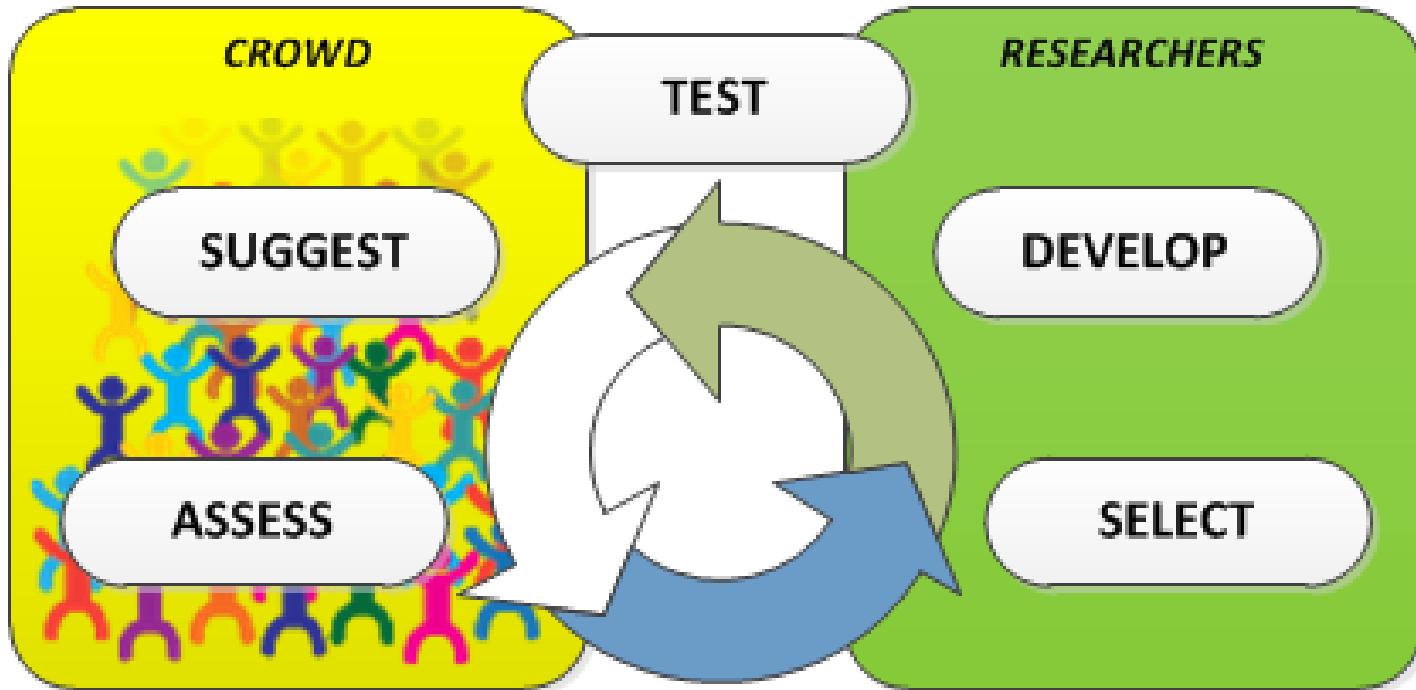
Exploring
Testing
Validating
Improving

devices identification transactions interaction analysis real-time autonomous volume
people big data insights taggings petabytes end-users incremental complexity
wireless time database governance structure NFC surveillance applications instantaneous
information barcodes innovation speed human virtual development
knowledge relationships cluster integration life synergy physical
transformation objects intelligence sensors network search technology
relationships communication record data capture discovery digital public
objects massive connected internetconnected RFID interoperability infrastructure services
intelligence communication record data capture privacy watermark exchange transfer
sensors network communication record data capture environmental global cooperation
network communication record data capture cloud GPS collaboration exchange transfer
communication record data capture smart distribution automation

INTERNET OF THINGS

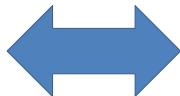


Crowd driven research



Bridging the gap between researchers and end-users

Cross domains



Participatory / Co-design process
Energy efficiency
Mobility
Environmental improvement

...

Scaling up citizens participation



Citizen engagement
Bottom-up codesign
End-user driven



Sustainable Smart City



ITU SSC KPI

Quality of Life
Environmental sustainability
ICT deployment and optimization
Infrastructure monitoring
Equity and social inclusion
Productivity and efficiency
Quality of services

Open invitation

You are welcome to join and collaborate

IoT Lab platform is available to:

- Smart cities
- Researchers

Demonstration in the exhibition booth.

Contact us:

contact@iotlab.com www.iotlab.eu





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THANK YOU!

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