# TRESCIMO

Testbeds for Reliable Smart City Machine-to-Machine Communication

# TRESCIMO Workshop on alternative ways to collect information for Smart Cities

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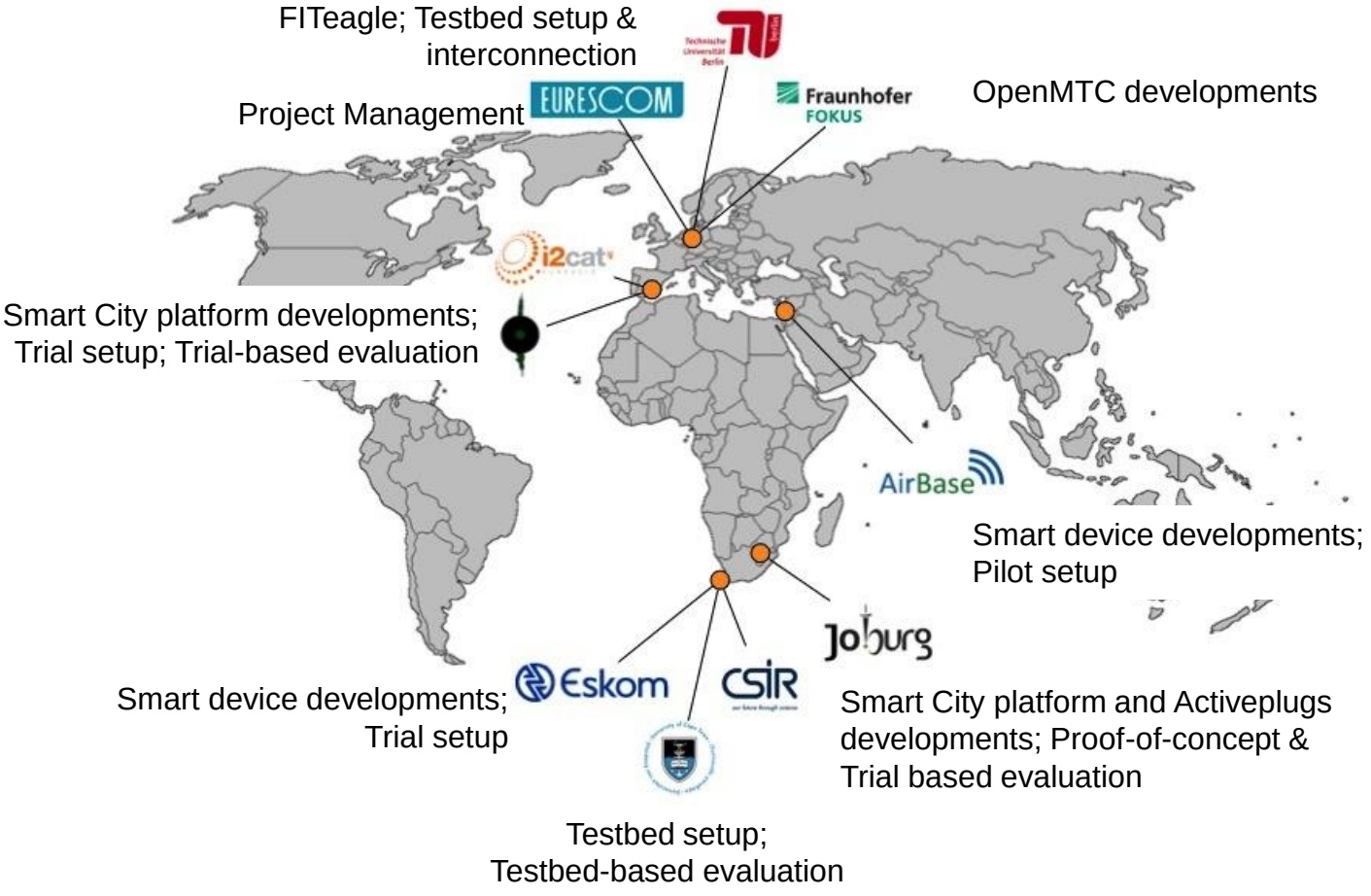
# Workshop Agenda

- “The SmartSantander experience”, Luis Muñoz, Chief researcher for the SmartSantander project
- “How buses can collect more than passengers: The Sant Vicenç dels Horts experience”, Marisa Catalan, Head researcher at Fundacio i2CAT
- “Using the citizen smart phone to collect data”, Xavier Puig, Telecom & Workplace Solutions Manager at CTTI
- “Sigfox as a network for M2M”, Javier Marcos, Responsible Technology Innovation
- “The Smartcitizen project as the involvement of the citizen on city sensorization”. Guillermo Camprodon, SmartCitizen project lead researcher
- “On-car smartphone as a source of smartcity data”, Josep Paradells, Head of the Wireless Networks Group at UPC
- “UrVAMM: How buses can be used as a distributed environmental station. Tarragona experience”, Alejandro Alija, Innovation Director at Ingenieros Asesores

# TRESCIMO

- A FIRE (Future Internet Research Experimentation) project for the deployment and **federation** of testbeds across countries and continents
- Co-funded by FP7 (European Union's Seventh Programme) and DST (South African Department of Science and Technology)
- To improve **Future Internet Research Experimentation testbed** capabilities in Europe and in South Africa, linking smart and green technological and social innovation
- Through the:
  - Usage of autonomic communication methods for end-to-end M2M communication in Smart Cities focusing on **smart energy management** and **smart city environmental monitoring**
  - **Integration** of software-based cross-industry horizontal M2M frameworks with real world sensors and IoT device deployments
  - Combination of **delay tolerant** communication with crowd-sensing approaches to support opportunistic information transmission

# Collaboration between Europe and South Africa



# TRESCIMO Trials

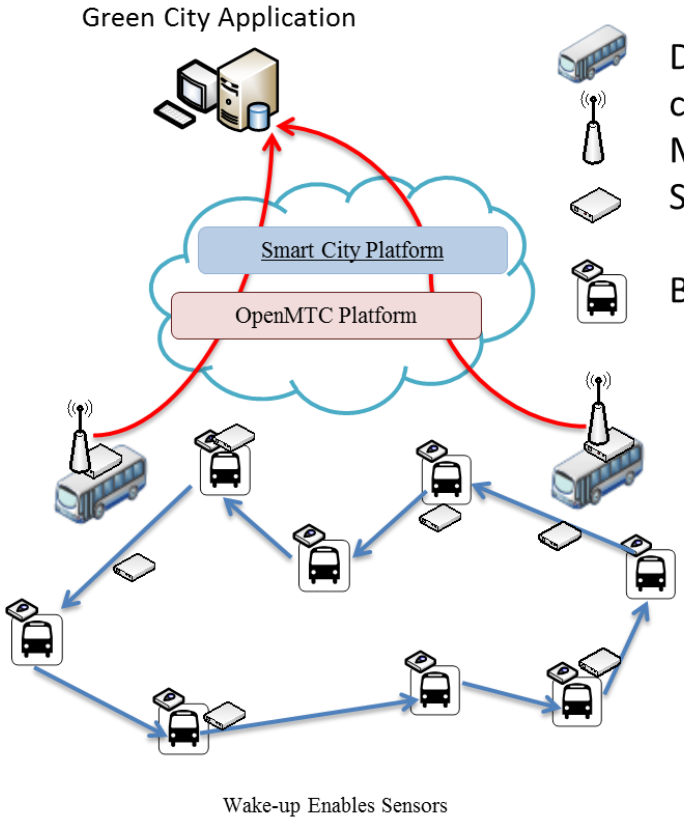
**San Vicenç dels Horts, Spain | Smart City Environmental Monitor Trial**

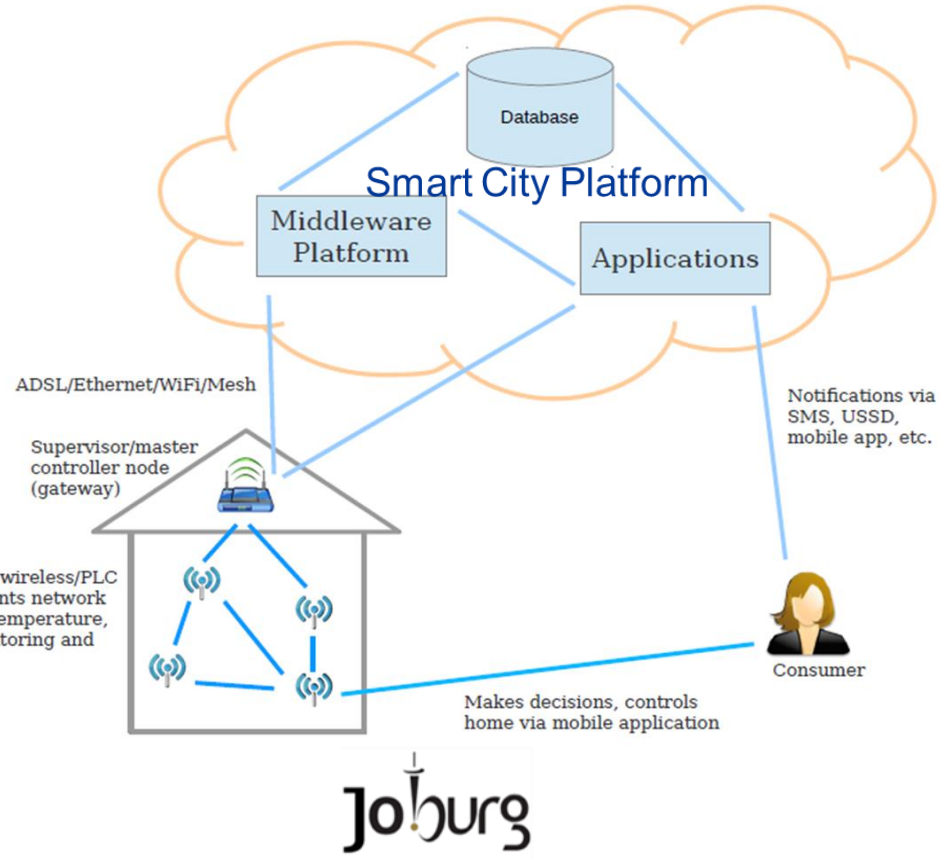
The trial consists in the deployment of a Delay Tolerant Networks (DTN) based system for Environmental Monitoring in Smart Cities with no need of an on-purpose infrastructure for interacting with the sensors distributed through the city. It is an energy efficient solution based on enhanced radio wake-up system mechanisms and bidirectional communication with the sensors.

**Gauteng, South Africa | Smart Energy System Trial**

The platform used in this trial will be implemented in an end-to-end scenario linking a number of households to the Smart City Platform. The aim of the trial is to establish means for demand-side management (i.e. data acquired, communicated, processed and the result communicated to a device or to a person). The interface to the person is provided by a mobile application.

# TRESCIMO Solutions – Trials

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# TRESCIMO – a FIRE Testbed

- TRESCIMO is already integrated into the Fed4FIRE SFA client, powered by FITeagle2, running under the following URL: https://federation.trescimo.eu
  - It is the first testbed based on the new semantic RSpec testing tool (valuable source of evaluation for this kind of resource description)
  - It is one of the first completely virtualized testbeds with real use-case background (Smart Cities)
  - It is the first and only testbed that offers a virtualized Smart City Software Stack as a Service to FIRE
  - It is a TOSCA (Topology and Orchestration Specification for Cloud Applications) based cloud federation testbed (valuable source of evaluation)

# Thank you!