SEVENTH FRAMEWORK PROGRAMME

SMARTSANTANDER

Future Internet Research and Experimentation in the context of a Smart City: Smart Santander

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Outline

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- WPs
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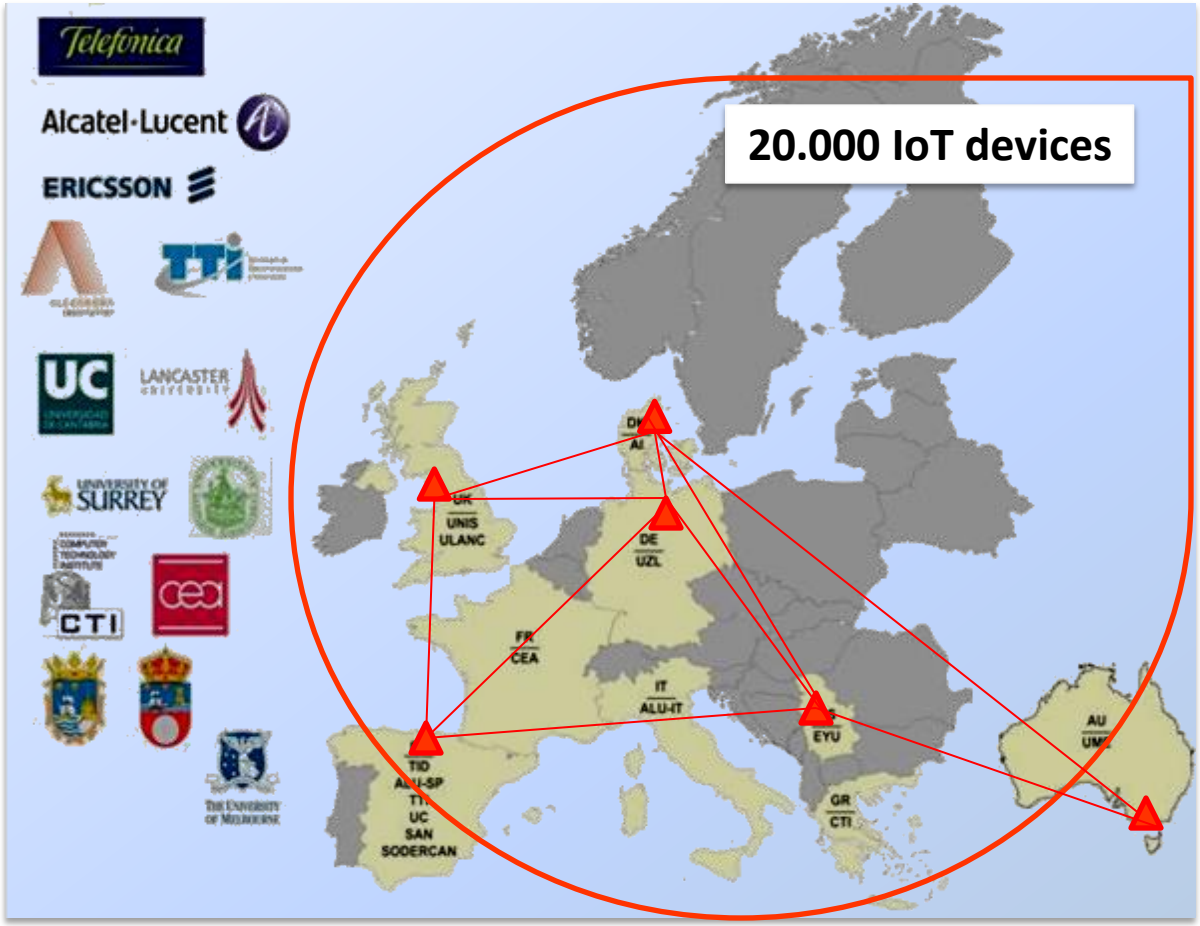
  - WP2 Specification and design of Experimental Federated open and trusted facility
  - WP3 Building an experimental facility
  - WP4 Development, evaluation and impact of use cases for research community and end-users
  - WP5 Experimentation support, dissemination and sustainable exploitation

SmartSantander objectives

Smart Santander aims at providing a European **experimental test facility** for the **research** and **experimentation** of architectures, key enabling technologies, **services** and applications for the Internet of Things (IoT) in the context of the **smart city**.



Smart Santander Highlights

- **Targeting:**
  - Researchers
  - End users
  - Service providers
- **Duration**
  36 months
- **Consortium**
  15 Organisations
  8 EU countries + AU
- **Budget / Funding**
  8.6 M€ / 6 M€
- **Resources**
  746.2 PM

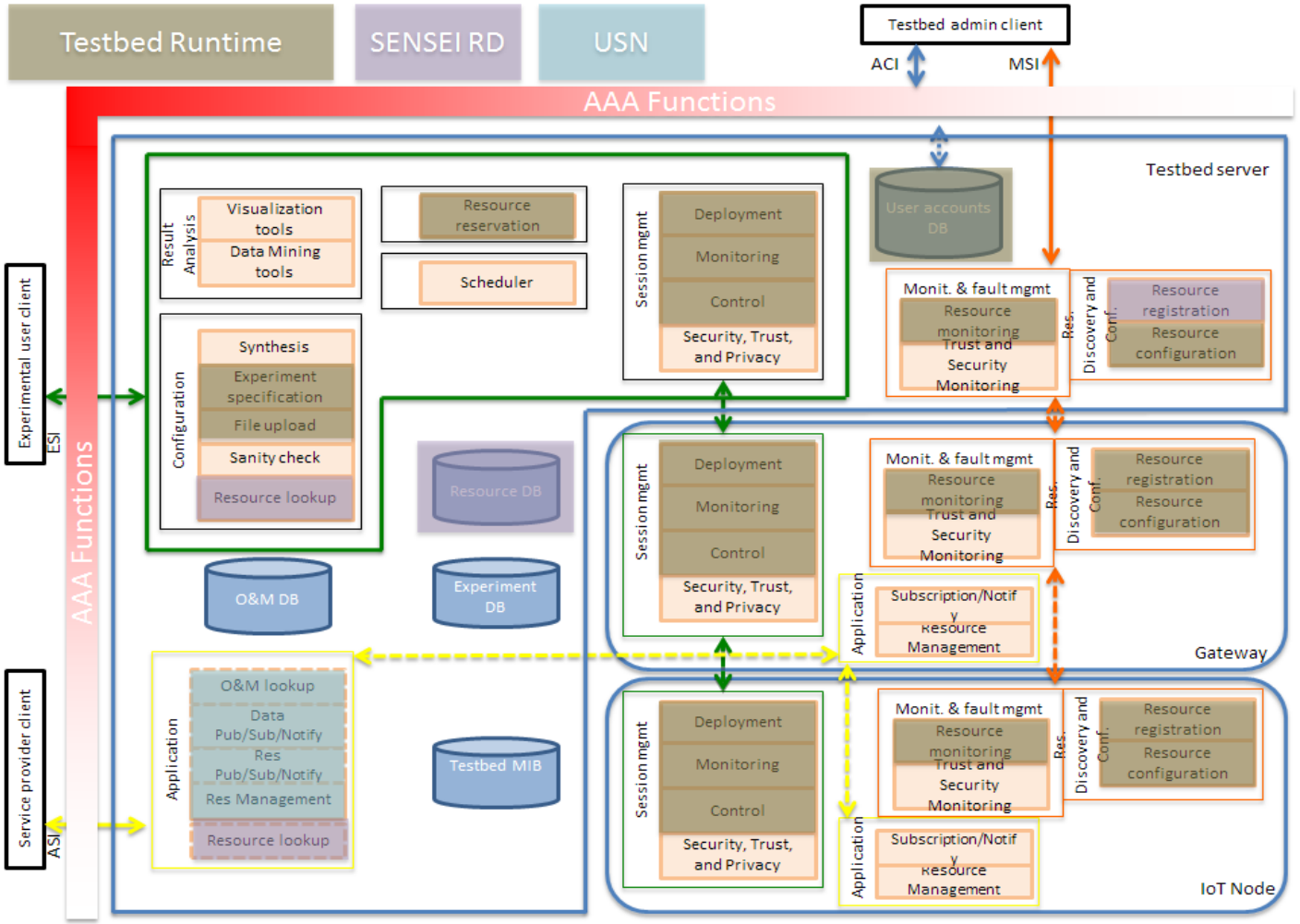
SmartSantander highlights

- Building a platform providing support to the experimentation
- City scale deployment
- Duality experimentation-service provision
- User involvement (technical and non-technical)
- Exploitation and sustainability
- Social impact

WP1 Reference model

- The overall objective is to provide a set of requirements associated to a real experimentation platform ⇒ Hostile outdoors environment with mainly wireless communications.
  - Based on a extensive set of use cases (both experimental and service planes) more than 100 functional requirements have been gathered.
  - First architecture specification
    - Related outputs: D1.1 (M8)

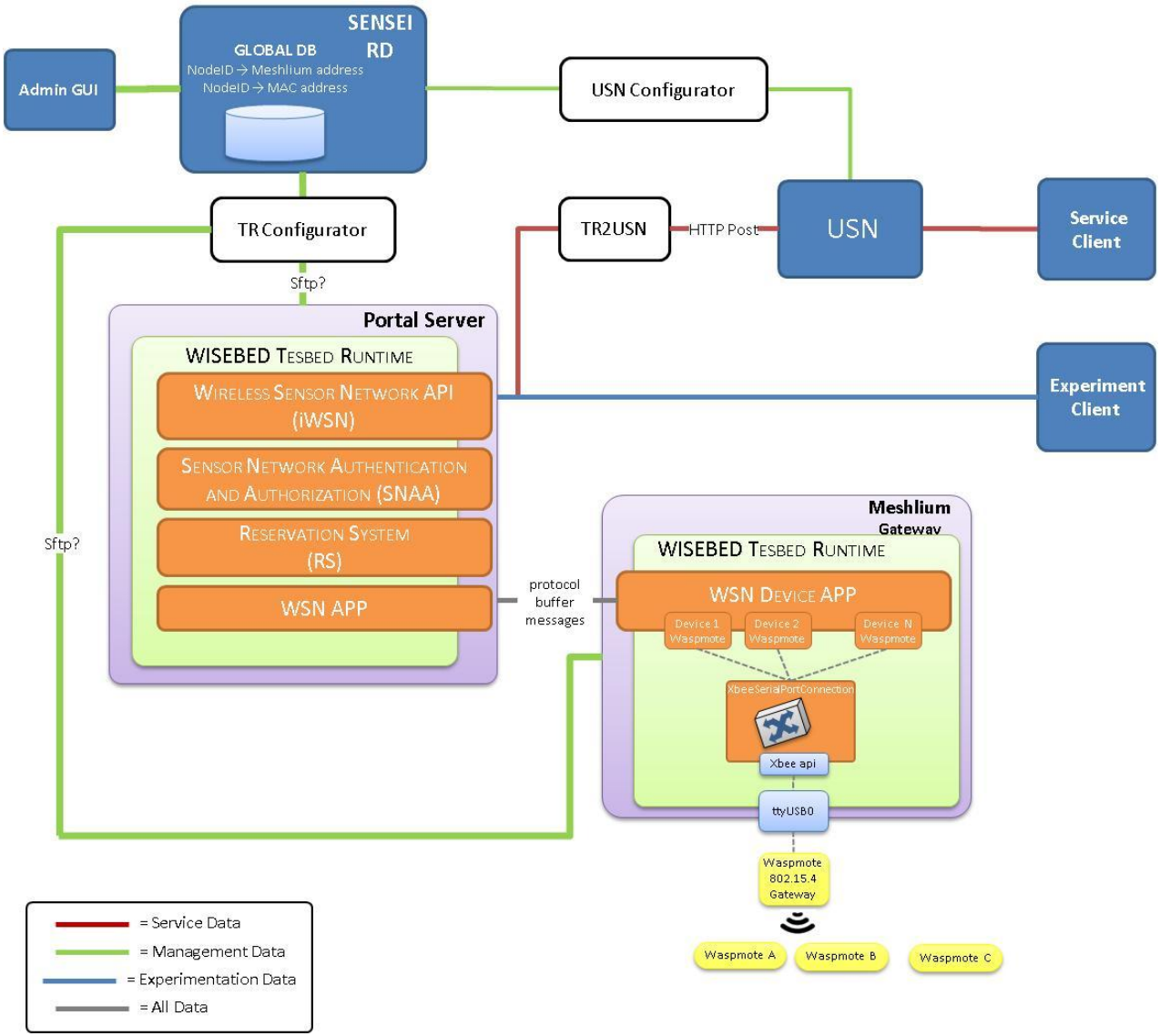
WP1 Reference model



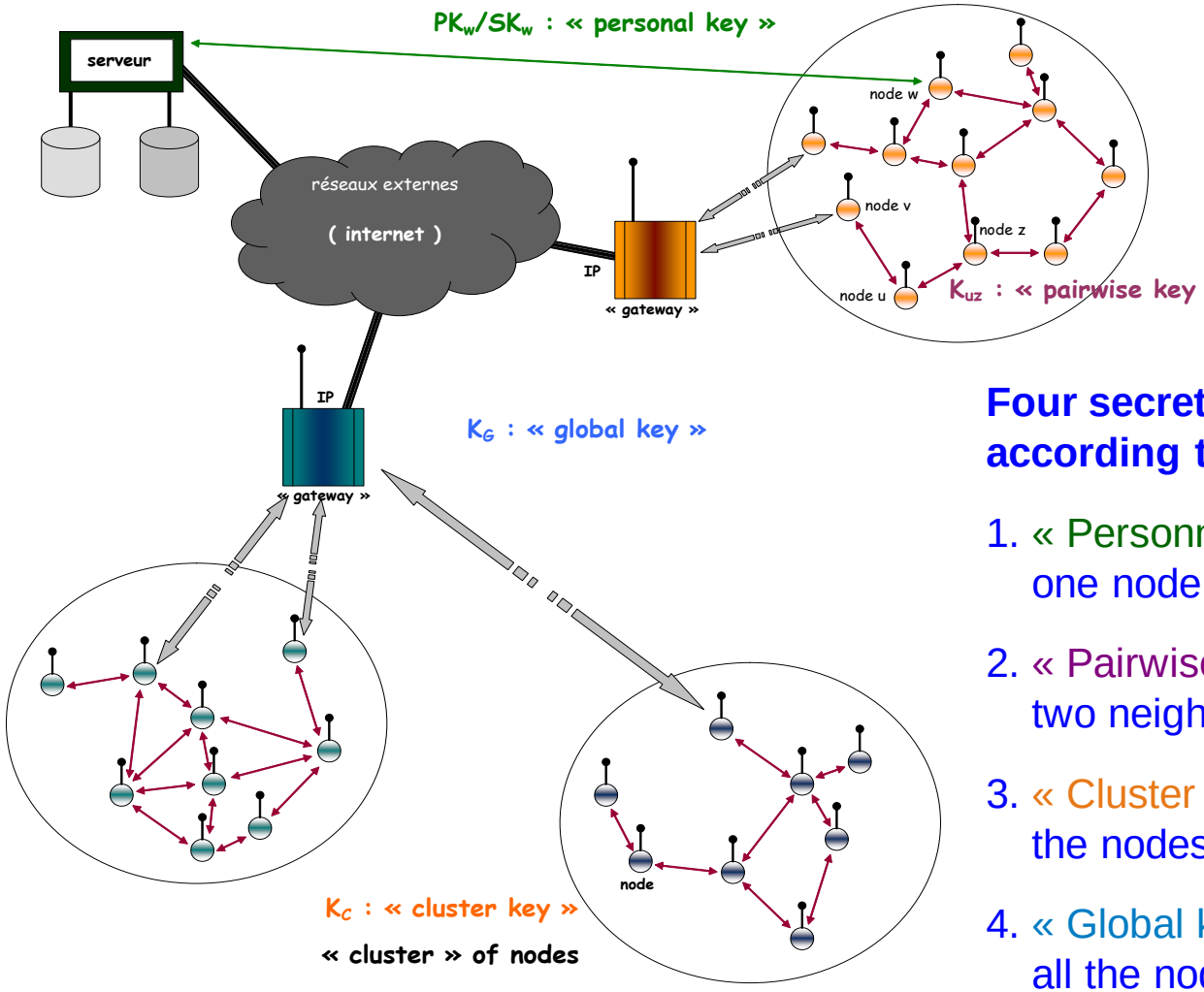
WP2 Specification and Design of Experimental Federated Open and Trusted Facility

- The main objective in this WP are related to identify the architectural constituent blocks and functionalities:
  - Some on them coming from WISEBED , SENSEI and Telco 2.0
  - Some others to be conceived in SmartSantander
  - Relevant effort focused around redesign/refinement of key APIs
    - ESI APIs
      - Session Mgt API
      - Configuration API
      - Compilation Server API
      - **iWSN API**
      - Sanity Check API
      - **Node/Link Control API**
      - Resource Reservation API
      - **Gateway Node API**

WP2 Specification and Design of Experimental Federated Open and Trusted Facility



WP2 Specification and Design of Experimental Federated Open and Trusted Facility



Four secret keys according to the architecture

1. « Personnal key » between one node and the server
2. « Pairwise key » between two neightboor nodes
3. « Cluster key » between the nodes of a same cluster
4. « Global key » between all the nodes of the network

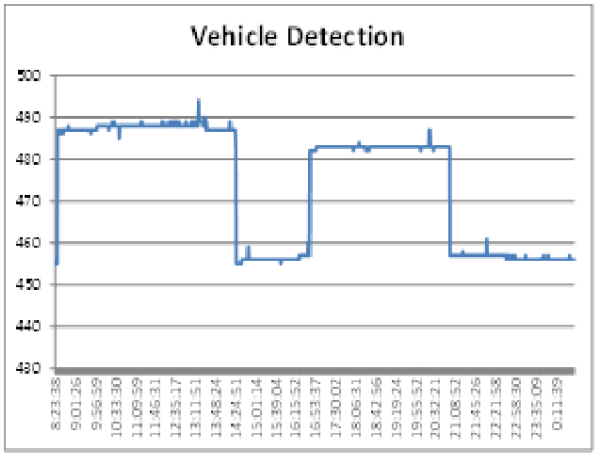
WP3 Building an experimental facility

- The main objective in this WP are related to:
  - Develop the missing blocks as well as the interfaces required
  - To elaborate an incremental deployment plan
  - To proceed with the **physical deployment**

- It has been scheduled that in month 15 around 2000 sensors will be already deployed in Santander
  - From the very beginning (October 2010) the Consortium agreed to proceed with a small scale pilot (Phase 0) to provide support both to the experimentation and service (parking control in outdoors area).

WP3 Building an experimental facility

WP3 Building an experimental facility



WP3 Building an experimental facility

From the lab to the hostile outdoor scenario!!

WP4 Development, evaluation and impact of use cases fro research community and end-users

- The main objective in this WP is to use the experimental research facility for setting up services which are of interest for the citizens
  - In this first phase traffic control application has been identified as the most interesting
    - Parking control in outdoors areas (disable, load/unload areas, bus stops,…)
    - Traffic management (inbound-outbound-prediction-routing management)

- What we have achieved so far?
  - Initial list of services
  - Questionnaires being distributed among the citizens with the objective of ranking the services
  - Initial KPIs already identified for traffic control

WP5 Experimentation support, dissemination and sustainable exploitation

- The main objective of this WP is to promote the use of SmartSantander experimental facility among the research community, end users and service providers. Last but not least, to disseminate the results as well as to obtain a sustainable exploitation model
  - Web site available from the very beginning
  - Blog also included
  - Relevant dissemination in national and international media (including national and international television)
- …and of course to give support to the open calls
  - D5.3 about regulations
  - Guide for applicants
  - General information