IOT Applications management, data analytic and dashboarding

Gianni Pantaleo
DISIT Lab, DINFO dept., University of Florence

https://www.disit.org, https://www.snap4city.org, gianni.pantaleo@unifi.it, paolo.nesi@unifi.it

Cell: +39-335-5668674
Snap4City is a Collaborative
No-Coding Platform to build Smart Applications (IoT devices)
Snap4City: Platform Purpose

- **interoperability** processes, data communication protocols, standards,
  - Data aggregation, transformation and integration
  - Snap4City Library on Node-RED
  - More than 100 protocols and any formats

- **access control:**
  - Snap4City: GDPR Compliant, PENTest passed

- **semantic** normalization:
  - Km4City ontology: Knowledge Base, expert system
  - Based on Virtuoso

- **data management and analysis:** multi-modal big data, data analytics and AI-based algorithms
  - DataDriven/Stream, RT: Node-RED, broker based, WebSocket, End-to-end secure, FIWARE Platform
  - Big Data storage: Elastic Search, Kibana
  - Data Analytics: Rstudio, Python, Keras, TensorFlow,
  - Visual Analytics/Dashboards: Snap4City
  - Business Intelligence: Snap4City
Health Domain: *Snap4City is a Collaborative No-Coding Platform to build Smart Applications*

**IOT Devices:**
- **Smart Ambulance:** Collecting and managing local data
- **Personal health devices (Snap4City):** for example: glucometers
- **Smart Bed (LAID project):** Monitoring sleeping conditions
  - Personal beds & beds managed by the hospital

**Contextual data:**
- COVID-19
- Environment, user behaviour, etc.

**Facts:**
- Any device can be connected
- Management GDPR compliant
- → Data Analytics, Visual Analytics
- → Dashboards, Business Analytics
Scenarios

1) Smart Ambulance:
Collecting and managing local data from tools and sensors inside the ambulance, IoT Devices, Tablets, Drones etc.

2) Personal Health devices:
e.g.: glucometers, etc.

3) Smart Bed:
Collecting and managing data from smart bed sensors, monitoring parameters in real-time
Conclusions on Snap4City

► Type of POC: Platform
► TRL: 8
► Projects (solutions) which are using (have adopted) the platform:
  ▶ SmartAmbulance, Herit-data, Mobimart, AMPERE, Italmatic, SODA, AMPERE, Herit-data, etc.
  ▶ (SmartBed, Sii-Mobility, REPLICATE, RESOLUTE, Trafair, PC4City, etc.)

► Next Steps
  ▶ Continuous improvement of system capabilities in the health domain
    • New Version of the Reasoner for dashboard composition
    • Making simpler and faster the applications production
    • Improving Ontology
  ▶ NGSI-LD FIWARE

► How to go further
  ▶ Specific domain trials are very important to improve the coverage and capabilities
  ▶ Scaled up with larger trials in terms of users and device kinds
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Paolo Nesi
DISIT Lab chair, DINFO dept., University of Florence

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