Multimodal data aggregation and management

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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*

- **Smart Bed (LAID project)**
  - Monitoring sleeping conditions
  - Personal beds & beds managed by the hospital

- **Smart Ambulance:**
  - Collecting and managing local data

- **Personal health devices (Snap4City):**
  - for example: glucometers

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

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

- **IOT Applications**
  - Big Data Analytics, Artificial Intelligence

- **My Dashboards, Smart Apps, Mobile App, Web Apps, Synoptics**

- **Dashboard Wizard**
  - Dashboard Editor

- **Create, save, load, delegate, grant access**
Conclusions on Snap4City

► Type of POC: Platform
► TRL: 7
► 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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