



Phd in Computer Science and Mathematics – XXXIII cycle

Pattern-based Business Process Digitalization

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Abstract

Effective digitalization of business processes (BPs) is fundamental for offering efficient services. The Digital Transformation of business processes is a complex task that small and medium-sized enterprises (SMEs) have difficulties to sustain, making necessary to maximize the reuse of well-established solutions to recurring problems in different contexts. The goal of this research is the definition of methodologies and tools for pattern-based digital transformation of BPs in Smart Communities and Industry 4.0.



Industrial partner

Sincon is an ICT company with its headquarter in Taranto, Italy. It offers to Public Administrations and Private Companies system integration, development of process automation solutions and advanced services.

In the Phd project, Sincon provides the industrial use cases to validate the overall research approach



International partner

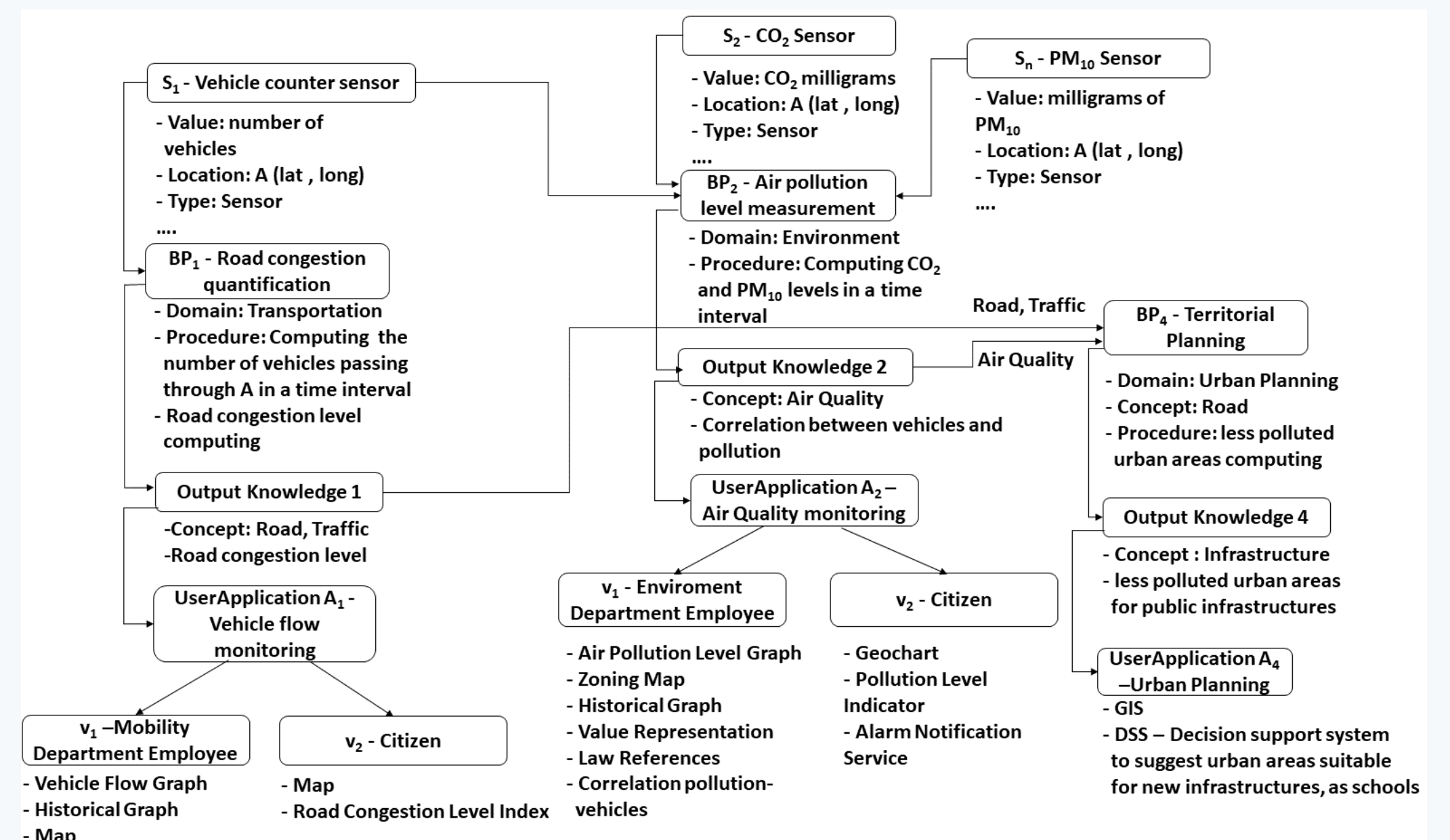
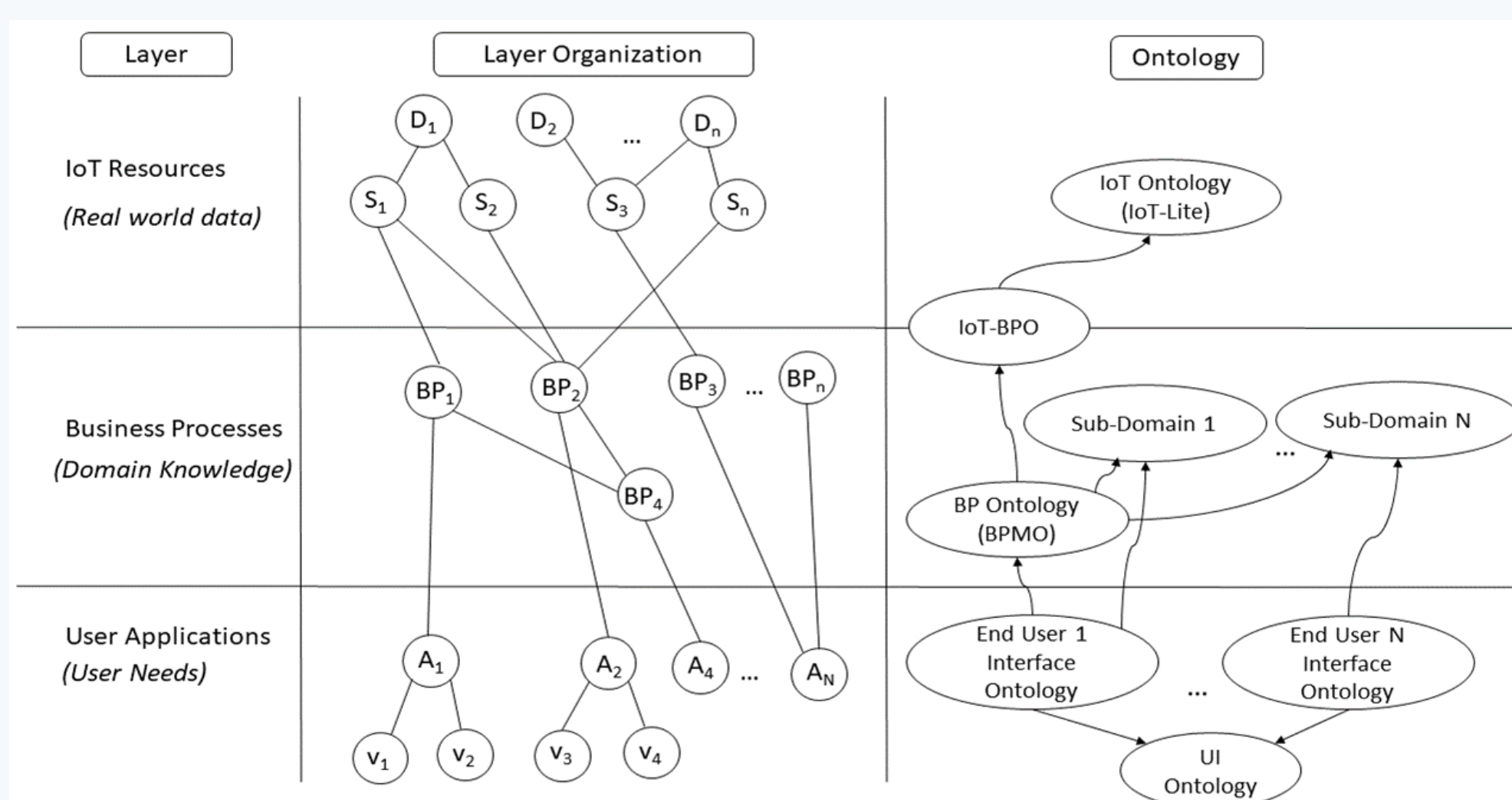
AQC Lab is located in Ciudad Real, Spain. It is the only ENAC-accredited European laboratory under ISO/IEC 17025 to perform software quality evaluation tests.

In the Phd project, AQC Lab offers knowledge and tools to verify the quality of the software created using digitalization patterns

Current results

Representing the knowledge grasped from the data acquired by IoT devices is challenging, since different types of users interact with such data with different goals. In order to transform data in knowledge, data have to be organized in a proper way and meaningfully provided in an IoT application specific for that type of user. A semantic approach is proposed.

Knowledge Stratification Model



Next Steps

- Development of BPMn 2.0 (Business Process Model and Notation) extension integrating IoT/IoE interaction in business processes modeling tool.
- Design of advanced user interaction paradigms to reduce user-perceived process complexity.
- Definition of a Digitalization Pattern set with particular focus on usability and quality of the software.

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