

## Facility Data Model as Integration and Interoperability Platform

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**Abstract :** Emerging Semantic Web technologies can be seen as the next step in evolution of the intelligent facility management systems. Particularly, this considers increased usage of open source and/or standardized concepts for data classification and semantic interpretation. To deliver such facility management systems, providing the comprehensive integration and interoperability platform in from of the facility data model is a prerequisite. In this paper, one of the possible modelling approaches to provide such integrative facility data model which was based on the ontology modelling concept was presented. Complete ontology development process, starting from the input data acquisition, ontology concepts definition and finally ontology concepts population, was described. At the beginning, the core facility ontology was developed representing the generic facility infrastructure comprised of the common facility concepts relevant from the facility management perspective. To develop the data model of a specific facility infrastructure, first extension and then population of the core facility ontology was performed. For the development of the full-blown facility data models, Malpensa and Fiumicino airports in Italy, two major European air-traffic hubs, were chosen as a test-bed platform. Furthermore, the way how these ontology models supported the integration and interoperability of the overall airport energy management system was analyzed as well.

**Keywords :** airport ontology, energy management, facility data model, ontology modeling

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