



# Framework for Service Composition Based on Ontologies for the Aggregation of Knowledge and Information for Intelligent Buildings (FCINT)

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## Project Progress

The **FCINT project**, co-sponsored by the European Fund for Regional Development and Romania's Government (ID551, cod SMIS-CSNR 12038), is hosted by the University Politehnica of Bucharest.



*University Politehnica of Bucharest*

During this quarter of its funded activity, the FCINT project focused on: tool design (partial), scenario demonstrations and system validation in industrial

environments (partial), publication on portal and maintenance of language for ontology description (partial), publication on portal of services and interface protocols (partial), further development of wiki portal (partial), and testing and quality control.

So far, the FCINT team has successfully delivered solutions that include multiple components such as service composition and optimization, scenario implementation and demonstration, system evaluation through simulation, scenario implementation and demonstration, system evaluation in lab, ontology modeling language, service portal, and wiki portal. Future activities are geared toward completing and enhancing those features to provide customers with services for smart building management.

## FCINT Workshop

Between 10<sup>th</sup> and 12<sup>th</sup> of May 2013, was held the 3<sup>rd</sup> Workshop – the last one in the workshops series under the project "Framework for service composition based on ontologies for knowledge and information aggregation in intelligent buildings – FCINT". This was a good opportunity for presenting the last developments to the industry specialists, who highly appreciated the FCINT frameworks' features, also introducing a selection of their companies' latest range of products for intelligent buildings.



Fig. 1. Workshop session

The FCINT projects' main objective aims to develop an execution and development environment for service composition in smart buildings.

Topics under discussion:

- SOA architecture for intelligent building management – the framework FCINT
- Software services for control devices and general purpose services in intelligent buildings
- Operating and policies for optimizing operation in intelligent buildings



- Guidelines for implementing and operating the FCINT architecture in an industrial environment

All FCINT team presentations, as well as those made by the industry specialists, integrated both theoretical and practical application approaches. From this perspective, the workshop was an effective platform relative to highlighting the potential FCINT field applications, in accordance with the newest industry solutions.

Given the encompassed activities, the workshop managed to confirm the aggregated value of the FCINT project and its R&D results. Furthermore, it revealed the steps to be followed in order to complete the project in an optimal manner.

## FCINT Publications

Cătălin Chera, Șerban Petrescu, Maria Dascălu, *A Service Oriented Framework for Intelligent Building Management*, Proceedings of the 19<sup>th</sup> International Conference on Control Systems and Computer Science, CSCS19, Bucharest, Romania, May 29-31, 2013, pp. 605-610, ISBN: 978-0-7685-4980-4.

This paper presents the current design of an intelligent building management framework built during the FCINT project (Ontology-based Service Composition Framework for Syndicating Building Intelligence). This framework consists of a simple controller that can interoperate with a variety of devices through device services, allows users to design and compose schedules and policies. This framework also permits users to contribute information about devices, schedules and control services.

Alexandra Cernian, Radu Iancu, Șerban Petrescu, *A Service Oriented Alarms System for Intelligent Building Management*, Proceedings of the 19<sup>th</sup> International Conference on Control Systems and Computer Science, CSCS19, Bucharest, Romania, May 29-31, 2013, pp. 425-429, ISBN: 978-0-7685-4980-4.

In the constantly evolving smart building context, an important aspect to address is devices and applications interoperability. The FCINT project provides a service-oriented management framework for smart building facilities through the use of ontologies, intelligent controllers and a Web-based portal. The alarms system presented in this paper is part of the effort to provide a proper framework for enhancing devices and services interoperability in smart buildings environment. Users will benefit of increased comfort, since actions can be taken as soon as an alarm occurs. Alarm conditions and policies can be easily customized and adapted to different scenarios, such as providing support to elderly people or monitoring patients with various medical conditions in their smart home environments. The alarms service provides real time feedback, thus allowing immediate action to be taken.

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## FCINT Info

FCINT project website: <http://www.fcint.ro>

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