

Master-Thesis:

Development of Common Ontology Integrated Standard Schema to Support Big Data Interoperability

Context:

Nowadays, individual devices and functional units will generate thousands of TB data annually and building-related systems must handle millions of TB data. Semantic metadata standards present a promising path to enabling interoperability by offering uniform descriptions of building resources to application developers and building operators. Several standardization efforts have arisen to address the ad-hoc nature of building metadata. Current existing ontologies focus on one specific application. Unfortunately, there is no uniform ontology that can be used in all cross-domain applications. By reusing one ontology, it is hard to ensure the coverage of terminology and also causes ambiguities. In most cases, multiple ontologies are required for one application. Additionally, manually merging ontologies from different domains is time-consuming and requires domain knowledge. Therefore, an ontology development framework that simplifies the ontology reusing process is required. However, the precise methodologies and tools for identifying appropriate existing ontologies for specific use cases and facilitating their reuse in the ontology development process remain undetermined.

Tasks:

- Literature review of the state of the art method for ontology development framework in Energy domain
- Development of ontology development framework
- Evaluate the developed ontology with data in energy domain

Your Profile:

- Computer engineering, electrical engineering or any related field
- Good programming skill and experience in Python
- Knowledge about NLP, Data modelling and Big Data are an advantage
- Interest in learning and testing

Contact:

Zhiyu Pan, M.Sc.
Tel.: +49 (0) 241 / 80 - 49713
zhiyu.pan@eonerc.rwth-aachen.de

ACS | Institute for Automation of Complex Power Systems
E.ON Energy Research Center
RWTH Aachen University
Mathieustr. 10, 52074 Aachen, Germany