

The Role of Foundational Ontologies for Enterprise Conceptual Modeling

In recent years, there has been a growing interest in the application of Foundational Ontologies, i.e., formal ontological theories in the philosophical sense, for the ontological analysis and (re)design of conceptual modeling languages. By using a Foundational Ontology as a Reference Model, it is possible to: (i) provide real-world semantics for these modeling languages; (ii) providing methodological guidelines for the correct use of their modeling primitives; (iii) systematically evaluate these languages w.r.t. *representation adequacy*, i.e., how truthful are these languages to the underlying domain in reality they are supposed to represent. Enterprise Conceptual Modeling brings two additional challenges from this perspective.

The first of these is due to the facts that Enterprise Modeling requires the construction of not one but multiple models capturing complementary viewpoints of the Enterprise, but also that these viewpoints can be produced in different modeling grammars. In this scenario, besides from addressing the general requirement of representation adequacy of each of these languages, one has to face the issue of semantic interoperability of these representation grammars put together. As we demonstrate in this talk, ontological analysis can play an important role in making explicit the ontological commitments of each of these modeling languages, as well as systematically relating their underlying concepts via their ontological semantics.

The second challenge refers to the nature of the Foundational Ontologies used as reference models. Traditionally, these reference models are limited to the top-most concepts used to conceptualize reality, hence, comprising general ontological distinctions among the categories of Objects, Events, Intrinsic and Relation Properties, Relations (e.g., parthood, causality, dependence), Conceptual Spaces, etc. The view defended in this talk is that an Ontology used as a reference model for Enterprise (Language) Engineering must also explicitly take into account the Social and Intentional Aspects of Reality, thus, extending the grounding model of classical ontological categories with notions such as Agency, Intentionality, Social Commitments, Social Processes, Social Roles, Social Objects (including Normative Descriptions) and Services, among others.

Short Bio

Giancarlo Guizzardi obtained a PhD degree (with the highest distinction) from the University of Twente, in The Netherlands. Since 2003 he has been a Visiting Scientist, Research Collaborator and Associated Researcher at the Laboratory for Applied Ontology (LOA), Institute for Cognitive Science and Technology (ISTC), in Trento, Italy. He is currently an Associate Professor at the Computer Science Department at the Federal University of Espírito Santo, in Vitória, Brazil, where is one of the coordinators of the Ontology and Conceptual Modeling Research Group (NEMO – <http://nemo.inf.ufes.br/>). He is one of the initiators of the Workshop series VORTE (Vocabulary, Ontologies and Rules for The Enterprise), a satellite event of IEEE EDOC and is (together with Lea Kutvonen) the EDOC 2010 PC Chair. He is an editorial board member of journals such as *Applied Ontology*, the *International Journal of Information Systems Modeling and Design* and the *Semantic Web Journal*. He has been working for about thirteen years in the development of Domain and Foundational Ontologies and their application in computer science and, primarily, in the area of Conceptual Modeling. Recently, he has been involved in initiatives regarding the use of Ontologies for Government Interoperability. In that respect, he was invited to coordinate the panel on Semantic Interoperability at the UNDP GIF (Global Interoperability Framework) Global Meeting. Finally, he is a member of the Executive Council of the International Association of Ontology Applications (IAOA – <http://www.iaoa.org/>).