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Semantic Support for Business Process Modeling -- Service Composition and Semantic Process Validation

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ABSTRACT

In order to ease the modeling of execution-level processes, we investigate opportunities of applying Semantic Web technologies in process models. This talk presents two areas of research results, namely service composition for activity implementation and the validation of semantic correctness of process models. For the enablement of these techniques, business processes modelled in graphical notations such as BPMN must be semantically annotated to specify precisely what the individual activities in the process will be responsible for – however, this talk will not address the question how to create the annotations.
In more detail, the first aspect addresses the question if a process activity can be implemented by combining the functionality of exisiting web services. Our approach applies results from AI planning to semantically annotated web services. A prototypical implementation can be shown.
With respect to the semantic validation we came up with techniques that take the annotations and the underlying ontology into account in order to determine whether the tasks are consistent with respect to each other, and with respect to the presented control-flow structure. To this end, we introduce validation tasks of interest in this context, followed by first technical contributions towards solving these kinds of problems.

SPEAKER

Ingo joined SAP Research 2005, where he currently works as a Research Associate in the "Business Process Management & Semantic Interoperability" Research Program in Karlsruhe, Germany.
Ingo received a Diploma degree from Universität Karlsruhe (TH) in 2006 and a Master of Science degree from the University of Massachusetts, Amherst in 2005, both in Computer Science. Besides his work at SAP Research, he works on his PhD thesis at IPE department of the Research Center for Information Technologies (http://www.fzi.de/ipe/) in Karlsruhe.
His research focusses on applying Semantic Web Services technology and AI to Business Process Management.