Workshop on Enterprise Interoperability (IWEI 2008)

Summary by K. Kosanke CIMOSA Association e.V. (kosanke@cimosa.de)

The workshop was organised by the IFIP Working Group 5.8 on Enterprise Interoperability and was held in Munich, on 2008-09-18, as part of the 12th IEEE International Enterprise Computing Conference (EDOC 2008). A total of 9 papers have been presented during the workshop, which addressed the themes Ontologies and semantic web, service-orientation, inter-organisational interoperability and maturity models. The papers have been published by M. van Sinderen et al (Eds.) as part of the CTIT workshop proceedings series WP08-05 (ISSN 1574-0846), Enschede 18.09.2008.

Paper abstracts:

J. Ullberg et al. "Framework for interoperability analysis on the semantic web using architecture models" describe a framework to assess interoperability on systems communicating over the semantic web. Semantic web interoperability is defined as the probability for successful retrieval of information on the web. It is influenced by five concepts: transmission protocol compatibility, discoverability, ontology completeness, quality of formal denotation markup and quality of requirements description markup. The assessment is carried out using an extended influence diagram and a meta-model to support the creation of architectural models. An example of using the framework is included in the paper.

N. Zouggar et al. "Semantic enrichment of enterprise models by ontologies based semantic annotations" propose a methodological approach using ontologies-based semantic annotation for model elaboration to keep their semantic throughout the life cycle. Following a short introduction to semantic in enterprise modelling and semantic conflict types, the authors compare enterprise model creation with knowledge creation and relate the different phases of both methods to each other in order to apply solutions applicable in knowledge creation to model creation as well. To use semantic enrichment to solve the interoperability problems of heterogeneous system interaction the modelling concepts and objects will be associated to reference ontology. A 6-step structured approach for semantic enrichment is described.

Elvesæter et al. "Towards enterprise interoperability service utilities" presents vision and initial results on the EU project COIN (Collaboration and interoperability for networked enterprises). These results will be integrated into a coherent pool of EI (enterprise interoperability) services as a contribution to the SaaS-U (Software-as-a-service Utility) vision following the ISU (Interoperability Service Utility) concept defined in the EU interoperability research roadmap. Such services will be realized according to the COIN EI services framework which is based on the ATHENA interoperability framework (AEF) and harmonized with the European interoperability framework (EIF). Based on the state of the art analysis a set of baseline EI services were specified (reference COIN deliverable D5.1.1) that will be implemented as Semantic web services to be tested in industry pilots.

Zhang et al. "An interoperability service utility platform for automobile supply chain management" proposes a federated approach-based methodology to guide the establishment of interoperability between supply chain enterprises. This guidance is applied to the design of an interoperability service utility platform that delivers interoperability as a SaaS-based ISU. The specifications of ISUs are introduced and an interactive framework for establishing interoperability between two SaaS applications is introduced. *(paper not presented at the workshop, but included in the proceedings)*

Mantovaneli Pesso et al. "Enterprise interoperability with SOA: a survey of service composition approaches" proposes a conceptual framework for service composition allowing to study different approaches to service composition life cycle and provides basic guidelines for analysis, evaluation and comparison. Five different approaches have been analyzed. Focusing on four service life cycle phases (discovery, process model creation process model verification and execution) the results indicate that none of the approaches analyzed cover all the life cycle phases, but focus mainly on service design time oriented phases and neglecting others like support for end-users service composition at run time. Not addressed in the current study are ontological technologies

Truyen and Joosen "A reference model for cross-organizational coordination architecture" proposes a reference model for coordination architectures that will support analysis and comparison of coordination architectures and allow proposals for their improvements. The reference model has 3 main di-

mensions: type of agreement, language for describing agreements and middleware for establishing and executing agreements. Focus is on technological and infrastructural aspects of cross-organizational organization. Therefore the language and middleware dimension have been further detailed into 4 and 2 sub-divisions, respectively. 7 different coordination architectures have been mapped to the reference model to compare those and identify potential improvements. An overview and a summary of these mappings are provided.

Kassel, "Design of services as interoperable systems – an e-commerce case study" presents foundations of a decision support model for a full-service e-commerce provider, providing a SaaS business model. The decision model will be guide communication between service provider and customer, addressing explicitly interoperability issues. The aim is to compose automatically reliable software systems from service components. The project is still under development in cooperation with an industrial partner.

Withalm and Wölfel, "Improvement model for collaborative networked organization" discuss the needs to assess the performance of the process areas (domain and collaboration oriented ones) in SME operations. To assess the collaboration oriented process area Capability Maturity Model® Integration (CMMI) is investigated as a potential way to resolve collaboration issues. The concept will be developed for the tourism domain as part of the European project COIN (Collaboration and interoperability for networked enterprises).

Santana Tapia et al. *"Towards a business-IT aligned maturity model for collaborative networked organisation"* present a systematic approach for the development of a maturity model for collaborative networked organizations. In addition the authors propose a maturity model from the literature for assessing process related business-IT attempts integrating multiple perspectives.

Quartel, "Model-driven development of a mediation service" presents a framework to guide the development of mediators, with the following objectives: (i) uncover and capture the actual interoperability problem that needs to be solved; (ii) allow the involvement of non-IT (i.e., business) experts in the development of the solution; (iii) support evolution of the solution and re-use of results in case of changing interoperability requirements; (iv) facilitate automation of parts of the process. The framework is based on service-oriented, model-driven and semantic web techniques. Available tool support for the different steps in the framework is indicated.

(paper presented at the workshop, but not included in the proceedings - the paper was presented at the EDOC conference as well)

For additional information contact M. van Sinderen (m.j.vansinderen@ewi.utwente.nl).