

Tutorial title: Service Modeling with SoaML

Abstract: SoaML (Service oriented Architecture Modeling Language) is a new OMG standard for Service Modeling adopted in December 2009, with both a UML profile and a metamodel for modelling of services. This tutorial introduces the concepts and practical use of SoaML with corresponding tool and methodology support. The tutorial is provided in two parts. Part I provides an introduction to SoaML for Service Modeling and Service oriented architectures and Part II shows how SoaML can be used and extended in a wider context including a link to business modelling with BPMN 2.0, modelling of service variability, and support for semantic web services and agent modelling. It is also shown how SoaML can form a foundation for future enhancements, like support for P2P/Grid/Cloud etc. that can be build upon the SoaML metamodel and UML profile. The SoaML standard has been developed with support from the European FP7 SHAPE project and members of the SoaML standardisation team and the SHAPE project will present the tutorial. The tutorial will be using running examples, and the participants will get access to a SoaML toolkit for their own computer to use as part of the tutorial.

Keywords: Service modelling, Model Driven Architecture, Service oriented architecture

Tutorial objectives

The tutorial objective is to educate the audience on the practical use of SoaML, and to understand how SoaML can be used as a foundation for further extensions based on the SoaML metamodel and UML profile.

Target audience

The target audience are modellers, system developers and researchers familiar with standard UML and the principles of model driven engineering and architecture (MDE/MDA). The target audience should have an interest in learning how to use the new SoaML standard for service modelling, with associated methodology and tools, and also to understand how SoaML can be related to process modelling in BPMN 2.0 and how SoaML can be extended to support other relevant modelling aspects, such as service variability, semantic services and service-oriented agent modelling.

Tutorial Organization

Part 1: Overview of SoaML. Concepts and principles, Capability models and relationship to business modelling, Introduction to SoaML tool support in UML tools/Eclipse and methodology support in EPF, SoaML UML profile and metamodel, use of general MDE/MDA principles and tools. Introduction to running example and the use of tools.

Part 2: Service architecture, Service contract and Service interface. SoaML with extended use of UML collaboration models, with associated behaviour models

Part 3: Participants with Service and Request Ports. SoaML with extended use of UML 2.0 port/connector models, with associated behaviour models.

Part 4: Information models and ontologies in SoaML. Enterprise architectures with UPDM, SysML and SoaML.

Part 5: Mappings and Transformations from SoaML to Web services with XML, WSDL and BPEL

Part 6: Extensions to SoaML – supporting heterogeneous architectures.

Tutorial Presenters

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The tutorial might involve other presenters from the SoaML development team.

Short bio of the presenters

Arne J. Berre is a chief scientist at the SINTEF research institute, and an associate professor at the University of Oslo, Norway. He has been co-chair for the development of the SoaML standard in OMG in the development period from 2007 to 2010. He has been working with distributed architectures and system interoperability for more than 20 years, and is actively involved in the development and standardisation of methodologies and reference architectures around service oriented computing. He has been involved in OMG standardisation since the early 1990's and was also the project leader for the ISO 19119 standard on a service architecture for geospatial services. He is currently managing a number of European research projects in the areas of service modelling, semantic web services and architectures for enterprise interoperability, and is the leader of the Norwegian Computer Society groups on Application integration and service oriented architectures. He is currently leading the FP7 SHAPE project on service modeling and the ENVISION project on

Environmental services infrastructure with Ontologies, and is involved in the Norwegian SiSaS project on Scientific Software as a Service.

Dumitru Roman joined SINTEF ICT as a research scientist in September 2009. Previously he worked as a senior researcher at the Semantic Technology Institute Innsbruck, Austria, where he was involved in several large projects on developing and applying semantic technologies in the area of service-oriented computing and the Web. His general research background and interests lay at the border between knowledge representation and reasoning, and large scale, dynamically distributed systems.

Dima Panfilenko is a PhD candidate at DFKI IWI, he has been involved in the relationship between SoaML and Business modeling, adapting and using concepts from BPMN 2.0 for service modeling.

Tutorial developers

The team of tutorial developers has been involved in the development of the SoaML standard through the European SHAPE project, and was also responsible for the finalisation of the SoaML standard through OMG in 2009 and 2010.

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