ATHENA Service-Oriented Interoperability (SOI) Framework

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1. Datasheet

Solution data	
Name	ATHENA Service-Oriented Interoperability (SOI) Framework
Result type	• Framework • Methodology and guidelines
Description/functionality	According to W3C, a service-oriented architecture (SOA) specifies a set of components whose interfaces can be described, published, discovered and invoked over a network. SOA aims to promote software development in a way that leverages the construction of dynamic systems which can easily adapt to volatile environments and be easily maintained as well. The decoupling of system constituent parts enables the re-configuration of system components according to the end-user's needs and the system's environment. Furthermore, the use of widely accepted standards and protocols that are based on XML and operate above internet standards (HTTP, SMTP, etc) enhances interoperability. This result consists of models, metamodels, profiles and methodology for modelling Web Services and autonomous agents. The model-driven development (MDD) framework for Web services described in D.A5.2 provides modelling guidelines for how to specify interoperable Web services in service-oriented architectures (SOAs). The framework consists of three main parts: • Web service models and metamodels, which describes how Web services should be specified in a service-oriented architecture. The framework covers models for how to specify service descriptions, service compositions, service addressing, service registry, semantic annotation of services, quality of service and e-contracts. • UML profile for Web services, which defines domain-specific language extensions for UML to support the specification of Web service models in UML. • Baseline methodology for SOA, which provides guidelines for developing platform-independent models for SOA and Web service models, and

	how to map between these.
Benefits to interoperability	The ATHENA Service-Oriented Interoperability (SOI) Framework provides guidelines for developing and integrating software services in service-oriented architectures (SOAs) using Web services and agent technologies. This result looks into the relationships between Web services and agents. It covers amongst other things the BDI (belief, desire and intention) metamodel for JACK agents and promotes the use of agents to build more dynamic and adaptive service-oriented systems.
Supported models/methodologies	-
Supported input interfaces	-
Supported output interfaces	-
Validation/demonstration	-
Standards compliance	-
Availability	-
License	-
Status	-
Requirements/dependencies	-
Web references	• Website: http://modelbased.net/soi/
Composed of the following solutions	
Conceptual	• PIM4SOA
Applicative	• Baseline methodology for SOA
Technical	• ATHENA Modelling Tool Suite for Eclipse/RSM • Johnson • WSDL Analyser
ATHENA metadata	
Contact person	Brian Elvesæter, SINTEF
Contributors	DFKI, ESI, SAP, SINTEF
Provided by project/activity	• A5 – Planned and Customisable Service-Oriented Architectures • A6 – Model-driven and Adaptive

	Interoperability Architectures
Deliverables representing result	• D.A5.2: Model and Specification of service description and usage as well as advanced concepts (M18) • D.A5.4: Execution Framework(s) for Planned and Customisable Service-Oriented Architectures (M21)
Contribution to key result	• 7. Guidelines and Best Practices • 12. Service Composition Framework • 13. Model-driven and Adaptable Interoperability Framework and Infrastructure
Used in pilot	• AIDIMA: eProcurement Pilot • EADS: Change management process • CRF: Automotive Pilot
Deliverable providing evaluation	D.A5.5 "Validation of Research Results" (M24)