25th January, 2008

SLA@SOI

Empowering the Service Economy with SLA-aware Infrastructures

SLA@SOI is an Integrated Project (IP) researching the systematic management service-oriented infrastructures on basis of formally specified service level agreements (SLAs).
SLA@SOI is a NESSI strategic project realizing one core pillar of the overall NESSI vision.

At a Glance

Projects:
SLA@SOI is an Integrated Project (IP) researching the systematic management of service-oriented infrastructures on basis of formally specified service level agreements (SLAs).
SLA@SOI is a NESSI strategic project thus realizing one core pillar of the overall NESSI vision.

Projects coordinator
SAP AG

Partners from:
Austria, Ireland, Italy, Germany, Slovenia, Spain and United Kingdom

Duration:
3 years

Total cost:
15.209.904 €

Programme:
Objective ICT-2007.1.2: Service and Software Architectures, Infrastructures and Engineering

Further information:
Project Web site: http://www.sla-at-soi.eu

NESSI (Networked European Software & Services Initiative): http://www.nessi-europe.com/

Motivation

The ongoing transformation of a product-oriented economy towards a service-oriented economy has come to a critical point. IT-supported service provisioning has become of major relevance in all industries and domains. However, the nature of these setups is typically quite static because it requires significant effort to create service offers, to negotiate provisioning details with customers and to manage and control provided services.

Project goal

The research project SLA@SOI will provide a major milestone for the further evolution towards a service-oriented economy, where IT-based services can be flexibly traded as economic good, i.e. under well defined and dependable conditions and with clearly associated costs. Eventually, this will allow for dynamic value networks that can be flexibly instantiated thus driving innovation and competitiveness.
SLA@SOI will provide 3 major benefits to the provisioning of services:

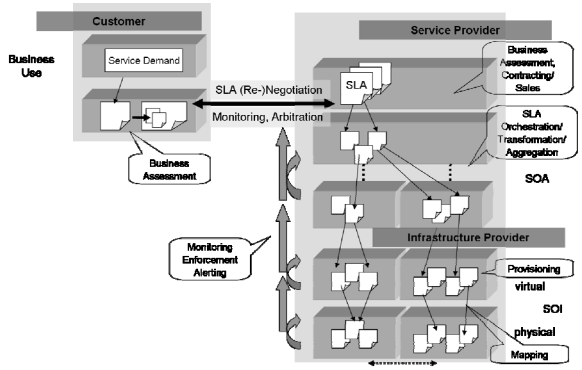
- **Predictability & Dependability**: The quality characteristics of service can be predicted and enforced at run-time.
- **Transparent SLA management**: Service level agreements (SLAs) defining the exact conditions under which services are provided/consumed can be transparently managed across the whole business and IT stack.

- **Automation**: The whole process of negotiating SLAs and provisioning, delivery and monitoring of services will be automated allowing for highly dynamic and scalable service consumption.

Business benefits

Eventually, all the main stakeholders in a service-oriented economy will benefit from the project results:
Software providers will be empowered to produce components with dependable behaviour for arbitrary scenarios. Service providers can offer services (possibly stemming from different software providers) flexibly according to different customer needs but always balancing these with IT capabilities and business strategies. Service aggregators can offer composed services well managed according to IT and business needs. Infrastructure providers are empowered to allocate infrastructure elements exactly according to higher-level customer needs. And last but not least service customers are empowered to precisely specify and negotiation the actual service level according to which they buy a certain service.

The following figure gives a high-level overview of the anticipated SLA-driven process for service provisioning, detailing the SLA management activities across customers, providers and the various layers of a Business/IT stack



Expected results

SLA@SOI will provide its results in 3 complementing ways.
First, an open source based SLA management framework will allow for realizing the benefits of predictability, transparency and automation in an arbitrary service-oriented infrastructure. Second, in-depth guidance for industrial stakeholders will be given explaining the best practise on how to transform their service business into an SLA-driven one.
Finally, SLA@SOI will provide an open reference case which allows for stakeholders to re-run, re-validate and even modify SLA experiments in the context of a concrete application.

Technical approach

The technical approach of SLA@SOI is to define a holistic view for the management of service level agreements (SLAs) and to implement an SLA management framework that can be easily integrated into a service-oriented infrastructure (SOI). The main innovative features of the project are (1) an automated e-contracting framework, (2) systematic grounding of SLAs from the business level down to the infrastructure, (3) exploitation of virtualization technologies at infrastructure level for SLA enforcement, and (4) advanced engineering methodologies for creation of predictable and manageable services.

Industrial relevance

The research topic of this project is highly relevant for many industry domains. Therefore, the project is based on various highly relevant but also complementary industrial use cases. These use cases will drive the project in terms of requirements but will also serve for validating project results.
The industrial use cases include scenarios from hosted Enterprise Resource Planning systems, Enterprise IT management, service aggregation in telecommunication, e-Government and Finance Industries.
Apart from use case specific evaluations the project will also derive an overall industrial assessment which then can be used in arbitrary domains for establishing an SLA-driven business.

Consortium

The consortium of SLA@SOI comprises world-class players in academia and industry representing all the relevant industrial and technical perspectives required for materializing the vision of this ambitious project.

NESSI contributions

The project seeks to contribute its results into the NESSI Open Framework. These include:

- an e-contracting platform between service consumers and providers
- a framework for mapping, planning and coordination within multiple levels in an organizational/IT structure
- access and provisioning layer for SLA-aware infrastructure