



PROJECT PROFILE

Semantics make middleware easy

Providing business support for service-oriented architecture

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The major goal of SEMEASY is to enable better collaboration between large organisations and allow them to share information across boundaries securely. SEMEASY intends to build on the various middleware components developed in the framework of the ITEA LASCOT decision support system project to meet real business needs. The new project intends to better specify and develop the LASCOT components, and provide ease of application to business users by developing a common semantic infrastructure.

Management of business or organisations at large has become extremely hard because of the increasing complexity of business requirements to operate in a highly competitive environment. To cope with this, businesses and organisations need to re-energise their business-support systems and transform their business processes into high performance e-business procedures.

Currently, services-oriented architecture (SOA) is promising to solve the well-known issues of information systems agility. However, existing real-world deployments show limitations:

- **At the technical level**, the middleware layers needed to support the deployment of SOA bring their own complexity, due in particular to the number of components that have to be integrated and managed; and
- **At the business level**, there is an inherent difficulty to find common vocabulary to describe the complexity of business processes.

Achieving interoperability

A primary objective of SEMEASY is to ensure interoperability of e-businesses. The main challenges are:

- How to provide business operational managers with tools that allow them to really drive a dynamic e-business and be able to modify important business parameters and processes and in a much faster way than is common today?
- How can these tools be used in a network of businesses and organisations that are inter-operating/collaborating? What are the standards to enable this?
- How can these tools be made robust, usable and safe enough? How can the right quality of service (QoS) be provided on these tools for this e-business environment?
- How to share knowledge efficiently and effectively between multiple companies? How to ensure the relevance of the information? How to deal with the diverse nature of information, both in form and content?

Innovating in multiple areas

SEMEASY will innovate in multiple areas to reach these ambitious objectives:

- **Innovative process-oriented communications models** – the project will develop advanced features to cope with some known limitations of orchestration;
- **Innovative SOA approach** – the ability to register, discover and govern web services is an essential requirement for any SOA implementation. Large organisations will typically need to support a large number of web services and, as the

SEMEASY (ITEA 05016)

Partners

4C/kZen
 ATOS Origin
 Bull
 Cronos
 Evidian
 Faculté Polytechnique de Mons (FPMS)
 Fundaciòn European Software Institute (ESI)
 IT-OPTICS
 Multitel
 THALES Communications
 Universidad Politècnica de Madrid (UPM)

Countries involved

Belgium
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number of services deployed grows to dozens or hundreds, centralised facilities for access and control of service metadata and artefacts become critical;

- **Innovative security approach** – the new approach for security services in SEMEASY will be to link, as seamlessly as possible, organisation security policies and functional application needs to technical security configurations and activity;
- **Enhanced secured common data web services** – the ‘common information view’ concept demonstrated in LASCOT will be pushed further to facilitate collaborative activities between companies. This will lead to a toolkit for delivering enhanced secured common data web services; and
- **Innovative semantic engine for content processing and knowledge management** – a key aspect in content processing and knowledge management is the ability to reuse and to share information to facilitate collaboration between companies. A first step was already performed in LASCOT in which information was organised by undertaking similarity-based retrieval and browsing using clustering engines. However, the content of the databases involves more and more multimedia. The

semantic engine will address these new sources of data.

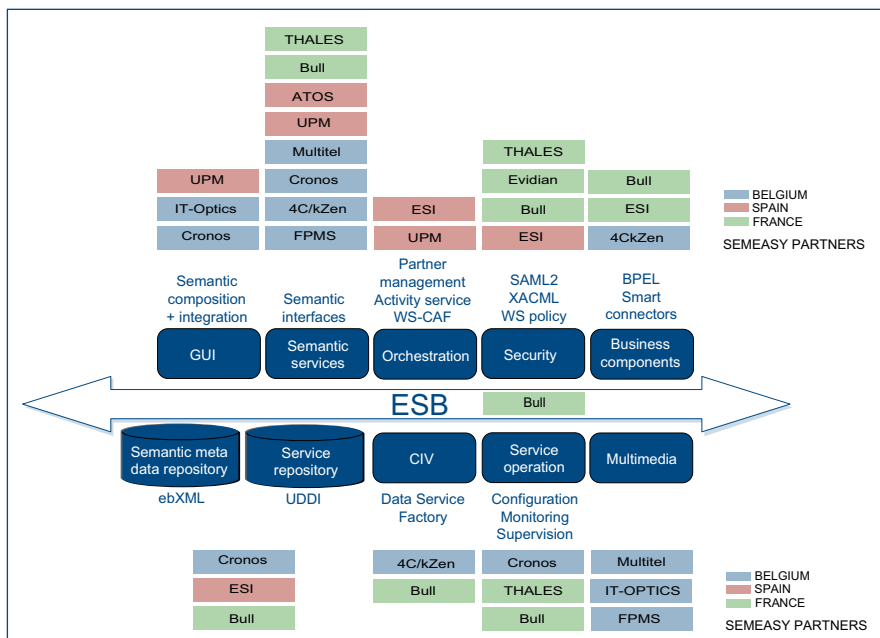
Meeting real business needs

The architectural principles of SEMEASY are based on an enterprise service bus (ESB) approach that promotes a way to build an SOA using semantic interfaces. The main result of the project will be a demonstrator applied to an existing complex business problem.

To impact the market, SEMEASY will be solutions-oriented and will first address two market sectors already identified:

1. **Healthcare:** medical information sharing, biotechnology resource centres, ...; and
2. **E-government:** e-procedures, e-administration, e-inquiries, e-bank, ...

The SEMEASY solution, tailored to real business needs, will enable the partners to offer advanced software components in the domains of middleware, security and knowledge management, and to propose new services to their customers. In particular, the semantic interoperability would make it possible to foresee new systems flexibility useful in several domains requiring resources co-ordination – such as human resources, fire services, police and doctors, but also equipment or vehicles.



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