Interoperability Utility for SMEs

Commius aims to deliver an adaptable and customisable software prototype, providing SMEs with “zero-cost of entry” into interoperability. Commius will hook into the email infrastructure and will establish interoperability agreements with the peers of the SMEs at the levels of system, semantics and process.

At a Glance:

The Project:
Commius partners envision a future in which SMEs enjoy a zero-cost entry into interoperability based on non-proprietary protocols. Following the suggestion of the IST Enterprise Interoperability Research Roadmap, the project conceives interoperability as a utility-like capability.

Project coordinator
The Project Coordinator, Softeco has over 25 year experience in large project coordination. Softeco is an SME and brings into the project direct and concrete requirements which derive form the SMEs' business processes.

Partners from:
Austria, Germany, Greece
Italy, Slovakia, Spain, United Kingdom.

Duration:
The project, started on February 1st 2008, will last 36 months.

Total cost:
3.8 M€

Programme:
FP7 - THEME 1.3
ICT in Support of The Networked Enterprise

Commius, a solution for SMEs Enterprise Interoperability.

There are 19 million SMEs within Europe, representing 99.8% of all registered businesses, and the economy depends upon their contribution to wealth creation and employment. With an average of seven people per SME, and with the Internet-scale email systems which are flexible and easy-to-use, emails are widely used to express business requests and cooperation between customers and SMEs and among SMEs. Thus, email-based messages not only act as a means for conducting businesses but also provide vast sources of knowledge for Enterprise Interoperability. But how to exploit email messages, tools, and systems to achieve Enterprise Interoperability in a systematic manner that preserves the flexible, easy-to-use, highly user-oriented email usage?

Commius research objectives are to answer the above-mentioned question. The main objective of the Commius project is to support the SMEs with a zero, or very low-cost, entry into interoperability, based on email systems.

The Commius Conceptual Architecture to Enterprise Interoperability

The Commius architecture applies Commius’s answers to research challenges in Email-based Enterprise Interoperability by integrating system, semantic and process interoperability techniques to provide an extensible and interoperable platform for individual SMEs and their cooperative networks.
- **System Interoperability**: Using emails for sending and receiving business requests, documents, and cooperation activities.

- **Semantic Interoperability**: Automatic extracting email contents and documents, mapping them to existing document types.

- **Process Interoperability**: Seamless entry into a community of interoperable companies at the document level will be augmented by process-level collaboration.

**Research Challenges for Enterprise Interoperability**

To effectively exploit the capacity of emails for Enterprise Interoperability, Commius relies on joint efforts from different research fields:

- **Architectures for Enterprise Cooperation and Interoperability over Emails**: Such architectures must be open and customizable to be accepted by SMEs. Also, they have to allow new interoperability solutions to be plugged in, as there are no single solutions for all. These architectures cannot neglect the fact that SMEs not only rely on their own diverse legacy systems but also are increasingly utilizing new models, such as the Cloud Computing and Software-as-a-Service models.

- **Email Content Analysis and Knowledge Extraction for Enterprise Interoperability**: The rich knowledge hidden in emails, such as social networks, types of requests, and types of documents attached, can be harvested and utilized for finding the right enterprise resources, in databases, services or other SMEs, and for configuring the right modules to handle requests. Hence, not only novel content analysis techniques but also semantic mapping ones are utilized, developed and integrated.

- **Interconnection of Email Contents and Enterprise Resources**: Without the interconnection of email contents to enterprise resources in an automatic way, emails remain isolated from the enterprise context. Such interconnection is complex because in the interconnection not only legacy resources are diverse but also new resources, e.g., based on the Software-as-a-Service model, could potentially be utilized by SMEs.

- **Collaborative Agile Interaction and Convergent Self-Customization**: Achieving Enterprise Interoperability via emails also means to achieve adaptive and customizable business processes. But these processes are not pre-defined and are evolvable. Novel relevance detection and ranking algorithms based on business and email context will be combined with interactions and business patterns to detect and map requests and changes to processes. These interactions and patterns provide detailed information about network and organization of cooperative SMEs. Furthermore, (auto-)configuration techniques are applied at multiple levels, such as business modules, networks of SMEs, and the interconnection to resources.

- **User Activity Smart Assistance**: How user participation concepts in the Web 2.0 phenomenon could help to address Enterprise Interoperability? While many tasks can be supported by utilizing knowledge from content analysis and extraction, configuration, and historical actions, certainly user-generated knowledge can be used to solve conflicting situations due to unclear email messages and new types of requests and their attached documents and to enrich content understanding. User-generated knowledge is captured through annotation tools for email messages and for recommendations. Users will receive recommendations which are presented in their typical email clients and Web browsers.

**Join the Commius Research Community.**

The research direction Commius follows is multi-disciplinary. Commius aims to tackle some specific targets but many challenges could be addressed by a bigger community. Join the COMMIES Community, by visiting our website: [http://www.commius.eu/](http://www.commius.eu/).

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