SUPER

Semantics Utilized for Process management within and between Enterprises

SUPER Annual Report

Covering period 01 of April – 22 of November 2006

Project Coordinator: SAP

October, 2006
Table of Contents
1 Project Overview 1
2 Summary of Activities 2
3 Important work areas 3
4 User Involvement, Promotion and Awareness 4
5 Future Work or Exploitation Prospects 5
6 Further Information 6
1 Project Overview

Project Title: SUPER
Semantics Utilized for Process management within and between Enterprise

URL: www.ip-super.org

Description of the project
By applying semantic technologies to business processes resulting in “Semantic Business Processes (SBP)”, SUPER aims to make a quantum leap with regard to efficiency and effectiveness in modelling and managing of business processes.

Impact
SUPER will enable companies to use information technology more efficiently and to improve the alignment between IT and business. In particular SUPER will enable companies to
- Overcome the gap between business and IT.
- Implement new business processes more quickly and efficiently.
- Make business processes accessible to reasoning and (advanced) querying.

SUPER’s main innovation
A consistent, holistic and “semantic” view on business processes that ranges from a more abstract business level to the implementation level.
2 Summary of Activities

- Finalization of the overall architecture for semantic business process management
- Development of a comprehensive ontology stack that allows to model business processes on an ontological level.
- Development of a composition and discovery framework
- Development of a mediation framework
- Development of a first prototype of a semantic business process execution engine
- Preliminary specification of use cases in the telecommunications domain
- Standard assessment

2006 was characterized by framing the business process management domain in the context of SUPER. SUPER will focus on the appliance of semantic technologies in the business process domain in 2007.
3 Important work areas

- **SUPER ontology stack**: The ontological representation of business process management artefacts (BPEL, BPMN) is needed in order to allow for reasoning and advanced querying support.

- **SUPER composition and discovery framework**: It is necessary to provide functionality to allow a business user to discover and compose services that implement a process that has been specified in a high modelling language like BPMN in order to be able to close the business IT gap. Business users are enabled to identify suitable compositions of web services by using semantic annotations. Annotations include non functional properties as well as behavioural aspects and functional aspects.

- **SUPER mediation framework**: Mediation refers to the ability to overcome heterogeneity between services and processes (semi)-automatically. In general, two types of mediation can be distinguished: data- and process mediation. While data mediation deals with bridging heterogeneity on messages, process mediation is concerned with mediating between differing behavioural interfaces of processes, e.g., different ordering of expected messages for both business partners.

- **SUPER modelling environment and execution engine**: It is necessary to provide semantic support for all important tools in order to fully exploit semantic annotations of business process artefacts. Thus, SUPER implements modelling and execution components that are capable of creating and using semantic annotations of artefacts in order to ease business process management tasks such as discovery, composition, mediation, binding, etc.
4 User Involvement, Promotion and Awareness

Interacting and shaping the approaches of the different EU funded projects focussing on similar topics or similar areas such as DIP, TripCom, FUSION, and Genesis, was tremendously important. Thus, a cluster workshop prior the review of the project FUSION was conducted in September. Prior this cluster activity the SUPER and TripCom consortium aligned their activities during a joint workshop in Sofia/Bulgaria in June 2006. Besides these inter-project activities SUPER presented their approach and results at different conferences. The important ones are outlined below.

Conference Participation

<table>
<thead>
<tr>
<th>List Number</th>
<th>Participants and conference</th>
<th>Partners Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1st Asian Semantic Web Conference (ASWC 2006), Beijing, China, 3rd September 2006; Semantic Web Services – State of Affairs</td>
<td>LFUI</td>
</tr>
<tr>
<td>3</td>
<td>Prof. Frank Leymann, Keynote Speech at Business Process Management Conference (BPM 2006), Recent BPEL-Trends, September 2006.</td>
<td>USTUTT</td>
</tr>
<tr>
<td>5</td>
<td>SUPER (Semantics Utilised for Process Management within and between Enterprises), Ana Karla Alves de Medeiros, Business Process Management Conference (BPM 2006), Special Session.</td>
<td>TUE</td>
</tr>
</tbody>
</table>
5 Future Work or Exploitation Prospects

Research in SUPER will concentrate on the following tools and concepts:

- SBP Modelling Ontologies
- SBP Methodology
- SBP Composition
- SBP Mediation
- SBP Modelling & Analysis Environment
- SBP Execution Environment
- SBP Overall Architecture & Integration Environment
- SBP Reference Application in the Telecommunications Domain
6 Further Information

www.ip-super.org