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Semantics Utilized for Process management within and between Enterprises

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STI / networking activities

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Executive Summary

This deliverable contains information on the collaboration within STI2 (the former ESSI cluster). These collaboration activities are aimed to ensure:

- a) technical co-ordination/alignment of efforts of each of STI member. This includes low level issues such as aligning hardware and software platforms; core technical issues such as using common representation formalism and aligning it with external forces, such as industrial standard stacks (an additional benefit which stems from co-ordination is the formal and informal knowledge sharing on both technical and non-technical issues);
- b) coordination of research output and visibility towards the scientific community through the coordination and organization of conference series, joint dissemination of the project results and achievements in order to reach higher levels of awareness with lower costs.

Note on the change of the deliverable name: STI International is an initiative of the European Semantic Systems Initiative (ESSI), the European FP6 Project Knowledge Web and DERI International. The ESSI initiative¹ is continued now under the STI umbrella² Therefore it was suggested that the deliverable name “ESSI cluster / networking activities” would be changed to “STI2 / networking activities”.

¹ <http://essi-cluster.org/>

² <http://www.sti2.org>

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1 STI Mission

The mission of the Semantic Technology Institute International (STI International)³ is to exploit semantics to overcome the societal, economical and technological challenges and limitations of current means of communication and collaboration by providing the scientific foundations, technological frameworks and real-world applications necessary to make semantics an integral and transparent building block of information, communication, and collaboration systems.

Currently STI International has 42 members: 13 associated member organizations, 28 full member organization, and 1 member of honor. From these members, 27 are non-profit organizations (university, research centers) and 14 profit organizations. 36 member organizations originate from Europe, whereas 3 are from US and another 3 from Asia. Out of these members, 7 are partners in SUPER: Hanival Internet Services GmbH, iSOCO - Intelligent Software Components S.A., Leopold-Franzens University Innsbruck, National University Ireland in Galway, Ontotext Lab, Sirma AI Corp, Open University, and Poznan University of Economics. Additionally, Richard Benjamins from Telefonica is member of the STI International Advisory Board.

STI was designed as a core networking initiative around semantic technologies. Several services and events have been organized by STI to foster the creation of a semantic technology community, and SUPER was a key project which, through its members, significantly contributed to this initiative.

In this deliverable we report on the services provided by STI, as well as various events initiated and organized by STI, targeted at both academic and industrial semantic technologies communities.

³ <http://www.sti2.org/>

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2 STI Services

STI provides a set of services which are essential for the successful development of the research area, standardization, and commercial adaptation of respective technology developments that are usually beyond the scope of individual organizations or particular research projects, and cross-project collaboration where synergies are found.

STI services are categorized in three main areas: Research, Technology and Realization, and the fundamental Core Services which provide the functional spoke for these areas.

2.1 Research Service

The Research Service initiates and coordinates the specification of research roadmaps for future development of semantic technologies. A research roadmap defines a vision, strategic objectives, and a realization plan which is collectively agreed upon by the participating organizations. The aim is to provide an integrated plan for future research and development activities, which then serves as the basis for coordinating cross-project activities as well as for standardization work ensuring sustainability and global impact.

As part of this service, STI International has been inviting world-leading experts in future Internet technologies as well as semantics to a series of workshops to come up with a vision of the future of Semantic technologies and a technology roadmap towards the year 2029. So far, two workshops took place, one⁴ on September 27th 2008, Vienna, Austria, at the "Österreichische Computer Gesellschaft (OCG),⁵ and the second one⁶ on October 27th 2008, Karlsruhe, Germany, at the IHK Haus der Wirtschaft Karlsruhe GmbH. After several presentations and discussions by the invited world-leading experts, one core result of these workshops was the clustering of application areas where Semantic technologies are useful as well as a list of technologies that are expected to be mature (in the sense of wide-spread deployment) by 2014. One more workshop is expected in the near future. These workshops are expected to produce a report "Semantics 2029 - A roadmap for Semantic technology" that sets out the challenges and opportunities arising from the identified scenarios and the expected synthesis of Semantics with other computing technologies and the increasing use of Semantics in areas outside computer science. The report seeks to identify the requirements necessary to accelerate scientific advances in Semantics – particularly those driven by computing technologies other than the Web and the 'new kinds' of applications the synthesis of Semantics and other technologies is creating. The report is expected to act as a 'pathfinder' to new research directions in the area.

Further information about this service can be found at <http://roadmap.sti2.org/>.

⁴

http://roadmap.sti2.org/wiki/index.php/Saturday%2C_September_27th_2008%2C_Vienna%2C_Austria

⁵ www.ocg.at

⁶

http://roadmap.sti2.org/wiki/index.php/Monday%2C_October_27th_2008%2C_Karlsruhe%2C_Germany

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2.2 Technology Service

The Technology Service aims to transform research into technology. Major activities of STI International to achieve this goal are: definitions of standards and reference architectures (the Standardization and Reference Architectures Service), development of testbeds and the support of challenges (the Testbeds and Challenges Service).

The Standardization and Reference Architectures Service coordinates the joint standardization strategy for STI International research efforts and the development of reference architectures for semantic technologies. The aim is to strengthen the impact of STI International research by fostering the admission by acknowledged standardization bodies, and to support the software development in associated research projects by providing open and generic reference architectures for semantic technologies.

Further information about this service can be found at: <http://ras.sti2.org/>.

The Testbeds and Challenges Service provides environments for testing, demonstrating, evaluating, and comparing semantic technologies. In particular, it offers collections of (1) test beds for the technical evaluation of tools in the form of benchmarks, and (2) challenges for demonstrating and evaluating the problem-solving capabilities of semantic technologies. The service gathers existing test suites and related initiatives, and continuously develops new ones. These can be used to validate research results, compare different technical solutions, demonstrate the benefits of semantic technologies to industry and to other interested parties, and to build interwoven communities of researchers and developers.

Further information about this service can be found at: <http://testbeds-challenges.sti2.org/>.

2.3 The Realization Service

The Realization Service aims to provide a framework for the implementation and dissemination of research and technologies. Technology needs its awareness, evaluation and application in business for successfully introducing new products to the market. Major activities of STI to achieve this goal are establishment of education programs for scientists and industry, raising awareness of the technology and support the outreach to business and its commercialization.

As far as education is concerned, STI sets-up a set of educational activities in the field of Semantics and Semantic technologies for academia and industry. This includes: generation of high-quality training materials for specific target communities, development and maintenance of training repositories and expert databases, organization of different types of training and educational events, provision of different types of training, set-up of joint doctoral or exchange/internship programs between research institutions and between researchers and industry and operational support for their implementation.

Further information about this service can be found at: <http://www.sti2.org/realization/education>

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As far as commercialization is concerned, STI acts as a catalyst for sharing ideas and concepts and will facilitate the commercial exploitation of R&D results with the aim of increasing business opportunities. To achieve this aim, STI designed a set of activities for its members, including Knowledge Capitalization Structure, Market Surveillance, Comprehensive Offer Building for proving the interest of SWS and Semantic Web in general, International Position Strategy, Diffusion by consolidation of dissemination plans and activities, and Collaboration in setting up events. Several meetings took place with the aim of pairing VC with start-up potential, and events such as the Business Brunch⁷ and the OGC Forum Semantic Systems⁸ took place with the aim of enabling and further developing these services.

Further information about this service can be found at: <http://www.sti2.org/realization/commercialization>.

Another service in this category is the Showcase, which intends to provide a catalogue of semantically-enabled applications developed by the members of the STI organization, in order to demonstrate concretely what can be achieved and what sort of problems can be solved using semantic technologies. The constitution of such a catalogue is a continuous task, as it needs to be constantly updated to integrate the latest applications and to take into account the evolution of applications employing emerging technologies. It therefore requires maintaining constant contact with developers and practitioners within the STI community, providing an access point to this community from the perspective of applications. As part of this service, each month, STI International will provide a piece of semantically-oriented software developed in part by the STI International Member organizations.⁹

Further information about this service can be found at: <http://www.sti2.org/realization/showcase>.

2.4 Core Services

In addition to the services in the three areas presented above, STI provides core services which ensure the success and sustainability of Semantic technology developments and support its members and projects. STI established a mechanism to setup, run, and coordinate “Cross-Projects and Members Working Groups” (short: WG). This mechanism provides: the basis for cross-project collaboration and shared specifications which serve the basis for joint standardization efforts, definition of a process model for organizing and managing the working groups, definition of a legal framework for handling IPR and usage rights, ICT infrastructure for these WGs (email lists, web sites, wikis, document sharing, chat, phone conferences).

One example of such WG is the Conceptual Models for Services Working Group (CMS WG).¹⁰ The mission of this WG is to continue the efforts of the WSMO working group¹¹ in two ways. Firstly, the group will maintain WSMO adding updates as appropriate to fulfil requests from Semantic

⁷ <http://www.sti2.org/events/details/16-sti-international-business-brunch>

⁸ <http://www.sti2.org/other-events/ocg-forum-semantic-systems-2008-hotlink>

⁹ <http://www.sti2.org/sti-semantic-apps>

¹⁰ <http://cms-wg.sti2.org/home/>

¹¹ <http://www.wsmo.org/>

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Web Service researchers and practitioners. Secondly, building on WSMO we will create a number of new generic ontologies including:

- WSMO-Lite - a lightweight ontology which uses RDFS as the description language and defines mechanisms to annotate WSDL descriptions using SAWSDL.
- MicroWSMO - an annotation mechanism for RESTful services.
- Semantic Annotations of Processes - an ontology for describing processes which are implemented as Web services.

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3 Events Organized by STI

STI International has been running a number of prominent conferences in the Semantic Technology and Web area continuing the work initiated by ESSI which began with the European Semantic Web Symposium in 2004. Besides a series of prominent conference which are further described in the following sub-sections, STI is involved in the co-organization of several workshops and other events such as summer and winter schools. We provide more details on such events at the end of this section.

STI International currently provides core local organisational and infrastructure facilities for the following conferences, each attracting between 100 and 350 attendees each year.

3.1 Asian Semantic Web Conferences (ASWC)

The Asian Semantic Web conference is meanwhile recognized as the yearly conference on theoretical foundations, technological building blocks and practical applications of semantic technologies on the Asian continent. Targeted at both academia and industry, the conference presents the latest research and development of the Semantic Web and its related technologies. It brings together researchers in relevant disciplines such as artificial intelligence, knowledge modeling, logic, databases, social networks, Web services, distributed computing, Web engineering, information systems, natural language processing, multimedia, and human-computer interaction.

In contrast to the European Semantic Web state the Semantic Web in Asia is new and an emerging topic which marks the importance of an institutionalized and long-term event within the Asian region.

The following editions took place so far:

1. Asian Semantic Web Conference, Beijing, China (ASWC 2006). For more information: <http://www.aswc2006.org/>
2. Asian Semantic Web Conference, Busan, Korea (ASWC 2007). For more information: <http://iswc2007.semanticweb.org/>
3. Asian Semantic Web Conference, Bangkok, Thailand (ASWC 2008) (postponed to the 2nd - 5th February 2009). For more information: <http://aswc2008.ait.ac.th/>

3.2 European Semantic Technology Conferences (ESTC)

The European Semantic Technology Conference brings together the world's leading thinkers, innovators, developers, engineers, and senior practitioners within organizations responsible for information technology and systems in one place to learn about how to integrate this unparalleled technology into their operations. ESTC is Europe's most prominent and authoritative conference focusing on the growth of the ICT semantic technology markets, highlighted by showcased industry practices, advancements in the field of semantic technologies achieved in the past year, and successful marketing strategies in delivering semantic applications that generate new revenues.

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Participants know how to develop a cohesive strategy for managing semantic technology initiatives and utilizing these to evolve the operations and effectiveness of their organizations.

The following editions took place so far:

1. European Semantic Technology Conference, Vienna, Austria (ESTC 2007). For more information: <http://www.estc2007.com/>
2. European Semantic Technology Conference, Vienna, Austria (ESTC 2008). For more information: <http://www.estc2008.com/>

3.3 European Semantic Web Conferences (ESWC)

The annual European Semantic Web Conference presents the latest results in research and applications of Semantic Web technologies and also features a tutorial program, system descriptions and demos, a posters track, a PhD symposium and a number of collocated workshops.

ESWC is a focus for researchers and developers from Europe and around the world and acts as a catalyst to promote Semantic Web research results and their application in industrial settings.

The following editions took place so far:

1. European Semantic Web Symposium, Heraklion, Greece (ESWS 2004). For more information: <http://www.esws2004.org/>
2. European Semantic Web Conference, Heraklion, Greece (ESWC 2005). For more information: <http://www.eswc2005.org/>
3. European Semantic Web Conference, Budva, Montenegro (ESWC 2006). For more information: <http://www.eswc2006.org/>
4. European Semantic Web Conference, Innsbruck, Austria (ESWC 2007). For more information: <http://www.eswc2007.org/>
5. European Semantic Web Conference, Tenerife, Spain (ESWC 2008). For more information: <http://www.eswc2008.org/>

3.4 Future Internet Symposia (FIS)

The Future Internet Symposium (FIS) is a venue for European and international researchers to share their work on next generation Internet technologies. FIS is a scientific forum for the European Union's Future Internet Initiative, an effort to align European Internet research on the shared challenges presented by Europe's increasingly Internet-based society and economy. FIS is intended to bridge traditional disciplinary boundaries of Internet research, emphasizing the use of machine understandable semantics to enable diverse communities, devices, and organizational groupings to share Internet resources.

An additional and equally important role for the Future Internet Symposium is to be a home for the Future Internet community. In this respect the Symposium will serve the interest of the emerging

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community and foster new researchers (PhD students and fresh Post-docs) as they progress to become the new leaders in this emerging field. Finally, the Symposium will co-operate fully with other initiatives in the area of the Future Internet, especially those within the European Arena.

So far, one edition took: Future Internet Symposium, Vienna, Austria. For more information: <http://www.fis2008.org/>.

3.5 International Conference on Electronic Commerce (ICEC)

The International Conference on Electronic commerce (ICEC) has provided a forum for the top of the scientific research community in e-commerce from all over the world annually since its inception in 1998. The conference has a truly international feel and has been held in many diverse locations including South Korea, Austria, Hong Kong, USA, the Netherlands, China, and Canada over its now 10 year history. STI International assists in the local organization and coordination processes of the conference at the venue. Additionally, STI International is a sponsor of ICEC.

The following editions took place so far:

1. International Conference on Electronic Commerce, Seoul, Korea (ICEC 1998)
2. International Conference on Electronic Commerce, Seoul, Korea (ICEC 2000)
3. International Conference on Electronic Commerce, Vienna, Austria (ICEC 2001)
4. International Conference on Electronic Commerce, Hong Kong (ICEC 2002)
5. International Conference on Electronic Commerce, Pittsburgh, USA (ICEC 2003)
6. International Conference on Electronic Commerce, Delft, Netherlands (ICEC 2004)
7. International Conference on Electronic Commerce, Xian, China (ICEC 2005)
8. International Conference on Electronic Commerce, Fredericton, Canada (ICEC 2006)
9. International Conference on Electronic Commerce, Minneapolis, USA (ICEC 2007)
10. International Conference on Electronic Commerce, Innsbruck, Austria (ICEC 2008)

Further information about these editions as well as future editions can be found on the International Center of Electronic Commerce website at <http://icec.net/>.

3.6 International Conference on Business Information Systems (BIS)

Over the recent years BIS conference has developed to a well-respected event joining international researchers to discuss the wide range of the development, improvement, application and implementation of business applications and systems. It is addressed to the scientific community, people involved in the development of business computer applications, consultants helping to properly implement computer technology and applications in the industry.

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So far 11 editions of the conference took place, with the next one scheduled for April 27-29, 2009, Poznan, Poland. STI International assists in the local organization and coordination processes at the conference venue. Additionally, STI International is a BIS co-sponsor.

Further information about these editions as well as future editions can be found on the International Conference on Business Information Systems website at <http://bis.kie.ue.poznan.pl>.

3.7 Other Events

STI is supporting workshops, as well as summer/winter schools. As far as workshops are concerned, STI is currently involved in the following workshops:

- Workshop on Motivation and Incentives on the Web (WEBCENTIVES'09)¹²
- Workshop on the Economics of Knowledge-based Technologies (ECONOM 2009)¹³
- Enterprise X.0 Workshop: From Web 2.0 in Enterprises towards a Corporate Web X.0¹⁴
- Workshop on Integration of the Real World and the Future Internet¹⁵
- Workshop on Coordination Models and Applications (CoMA): Collaboration in the Cloud¹⁶

STI is involved in the organization of the following summer/winter schools:

- 7th European Summer School on Ontological Engineering and the Semantic Web¹⁷
- International Summer School on Semantic Computing (IEEE)¹⁸
- Reasoning Web 2009 Summer School¹⁹
- Semantic Web Services Winter Retreat²⁰

¹² <http://www.sti2.org/worskops-event-menu/details/24-webcentives09>

¹³ <http://www.sti2.org/worskops-event-menu/details/31-econom-2009>

¹⁴ http://bis.kie.ae.poznan.pl/12th_bis/wscfp.php?ws=entX2009

¹⁵ <http://www.sti2.org/worskops-event-menu/details/32-rwi-2009>

¹⁶ <http://www.ag-nbi.de/conf/COMA09/>

¹⁷ <http://sssw09.org/>

¹⁸ <http://sssc2009.org/>

¹⁹ <http://reasoningweb.org/2009/>

²⁰ <http://education.sti2.org/events/sws-retreat-09/>

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4 Summary

With more than 28 full members²¹ and 13 associate members,²² and a grouping of several EU projects (including the SUPER project)²³, STI International established a platform that enabled the creation of a long lasting semantic technology community. Through its Research, Technology and Realization, and the fundamental Core Services, as well as through the organization of various conference and events, STI provides the scientific foundations, technological frameworks and real-world applications necessary to make semantics an integral and transparent building block of information, communication, and collaboration systems.

²¹ <http://www.sti2.org/full-members>

²² <http://www.sti2.org/associate-members>

²³ <http://www.sti2.org/projects>