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Report of collaboration activities and updates of the collaboration activities plan

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Partners: CWI Stichting Centrum voor Wiskunde en Informatica (NL)

UCBL Université Claude Bernard Lyon 1 (FR)

USTUTT Universitaet Stuttgart (DE)

TILBURG UNIVERSITY Stichting Katholieke Universiteit Brabant (NL)

UNITN Università degli Studi di Trento (IT)

TARC-PL Telcordia Poland (PL)

THALES Thales Services SAS (FR)

PWC Pricewaterhousecoopers Accountants N.V. (NL)

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Project no. 215175

COMPAS

Compliance-driven Models, Languages, and Architectures for Services

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D7.4 Report of collaboration activities and updates of the collaboration activities plan

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Abstract

This deliverable, due at M36 of the COMPAS project, reports on standardization activities and collaboration with other projects done during the third year of COMPAS.

1. Introduction

1.1. Purpose and scope

The purpose and scope of this deliverable is to report on the standardization efforts and the progress of collaboration activities between the participants of COMPAS and other projects.

We would like to remind the readers that the public COMPAS Web-Site [D7.1] is employed for announcement of upcoming and ongoing collaboration and dissemination activities. For latest details see <http://www.compas-ict.eu/collaborationNews.php>. The dissemination, exploitation and usage of COMPAS results will be described in [D7.3c].

1.2. Document overview

This deliverable is structured as follows: Section 2 describes activities of COMPAS partners in collaboration with other projects, Section 3 reports on the Service and Software Architectures, Infrastructure and Engineering (SSAI) collaboration activities, and Section 4 describes other collaboration activities, including participation in NESSI, and standardization efforts.

1.3. Definitions and glossary

The most important terminology concerning the COMPAS project is listed on the public COMPAS Web-Site [D7.1] available at <http://www.compas-ict.eu> section terminology. This helps to make the overall COMPAS approach more comprehensive for the general public.

1.4. Abbreviations and acronyms

ALLOW	Adaptable Pervasive Flows
CRL	Compliance Request Language
CWG	Collaboration Working Group
EC	European Commission
ETP	European Technology Platform
FP7	Seventh Framework Programme
MASTER	Managing assurance, security and trust for services
NESSI	Networked European Software and Services Initiative
NEXOF	NESSI Open Framework
S-CUBE	Software Services and Systems Network
SOA	Service-Oriented Architectures
SSAI	Service and Software Architectures, Infrastructure and Engineering

2. Collaboration with other projects

2.1. Organizing conferences and workshops

Members of COMPAS and MASTER projects (TUV, UNITN, UCBL, TILBURG, USTUTT, CWI) co-organized the 1st workshop on Engineering SOA and the Web (<http://www.infosys.tuwien.ac.at/linksites/events/ESW10/>). The workshop was at the 10th International Conference on Web Engineering (ICWE 2010), <http://icwe2010.webengineering.org/>, which took place in Vienna on 5-9 July 2010.

2.2. Joint activities for exchange, dissemination and training

Researchers from COMPAS gave several talks on results of their collaboration with other projects:

- David Schumm from the COMPAS project and Daniel Schleicher from the MASTER project, both working at the University of Stuttgart (USTUTT), gave a presentation on compliance management in automated business processes at IBM Global Business Services in Ehningen, Germany. In this presentation the fundamentals of compliance management were discussed. This included a discussion of the different sources of compliance requirements, the problems when dealing with requirements of different levels of abstraction, the impact of compliance on an organization and its business processes, as well as the challenges of compliance management in general. Regarding the COMPAS approach in particular, David Schumm presented the concept of compliance fragments which can be used to augment a given business process with process structures related to compliance. The discussion and the positive feedback that followed the presentation confirmed that the problems, which are addressed in COMPAS and MASTER are relevant, in other words, compliance is an important topic in industry.
- Compliance-driven Models, Languages, and Architectures for Services: Invited talk presented by Huy Tran (COMPAS) at the First Workshop on Software Services (WoSS), Sep 23-26, Timisoara, Romania as a result of the collaboration between COMPAS and the EU FP7 SPRERS project.

COMPAS and MASTER (<http://www.master-fp7.eu/>) projects presented several joint papers:

- Carlos Rodríguez, Patrícia Silveira, Florian Daniel and Fabio Casati. Analyzing Compliance of Service-Based Business Processes for Root-Cause Analysis and Prediction. Proceedings of the 1st Workshop on Engineering SOA and the Web (ESW'10) in conjunction with ICWE'10, Springer, 2010.
- Patrícia Silveira, Carlos Rodríguez, Aliaksandr Birukou, Fabio Casati, Florian Daniel, Vincenzo D'Andrea, Claire Worledge, Zouhair Taheri. Aiding Compliance Governance in Service-Based Business Processes: The next Step in SLA Management. In: Handbook of Research on Non-Functional Properties for Service-Oriented Systems: Future Directions, edited by S. Reiff-Marganiec and M. Tilly. IGI Global, 2011.
- D. Schumm, T. Anstett, F. Leymann, D. Schleicher, S. Strauch: Essential Aspects of Compliance Management with Focus on Business Process Automation. Proceedings of the 3rd International Conference on Business Process and Services Computing

(BPSC 2010), Gesellschaft für Informatik e.V. (GI), Lecture Notes in Informatics, 2010.

- D. Schumm, T. Anstett, F. Leymann, D. Schleicher: Applicability of Process Viewing Patterns in Business Process Management Proceedings of the International Workshop on Models and Model-driven Methods for Service Engineering (3M4SE 2010), in conjunction with the 14th IEEE International EDOC Conference (EDOC 2010), IEEE Computer Society Press, 2010
- Schleicher, Daniel; Anstett, Tobias; Leymann, Frank; Schumm, David: Compliant Business Process Design Using Refinement Layers. In: R. Meersman, T. Dillon et al. (Hrsg): OTM 2010 Conferences.
- Schleicher, Daniel; Weidmann, Monika; Leymann, Frank; Schumm, David: Compliance Scopes: Extending the BPMN 2.0 Meta Model to Specify Compliance Requirements. In: Proceedings of SOCA 2010.
- Brandic, Ivona; Anstett, Tobias; Schumm, David; Leymann, Frank; Dustdar, Schahram; Konrad, Ralf: Compliant Cloud Computing (C3): Architecture and Language Support for User-driven Compliance Management in Clouds. In: Proceedings of the 3rd International Conference on Cloud Computing (IEEE Cloud 2010)

A joint paper has been published by COMPAS, MASTER and ALLOW projects:

- Eberle, Hanna; Leymann, Frank; Schleicher, Daniel; Schumm, David; Unger, Tobias: Process Fragment Composition Operations. In: Proceedings of APSCC 2010.

A joint paper resulted from the collaboration of COMPAS and S-CUBE

- Schumm, David; Karastoyanova, Dimka; Leymann, Frank; Strauch, Steve: Fragmento: Advanced Process Fragment Library. In: Proceedings of the 19th International Conference on Information Systems Development (ISD'10), Prague, Czech Republic, August 25 - 27, 2010

The results of the collaboration between COMPAS and collaboration working group on Service Engineering has been published as a book:

- Schahram Dustdar, Fei Li, Service Engineering--European Research Results, Springer, 2011

COMPAS, together with other NESSI projects was presented at ICT 2010 in Brussels (http://ec.europa.eu/information_society/events/ict/2010/index_en.htm). The presentation took place at the NESSI stand and the event was announced in September's NESSI newsletter (<http://www.nessi-europe.com/LinkClick.aspx?fileticket=Cs9IG3%2F3mq4%3D&tabid=589>)

3. SSAI collaboration activities

3.1. Service Engineering Collaboration Working Group

3.1.1. Background

The European Commission, DG Information Society, SSAI Unit organised a two day event on 4-5 March 2008. The objective of the event was to prepare the Work Programme 2009-10 and to launch the FP7 projects (concertation meeting). As a result of the concertation meeting, initial SSAI Collaboration Working Groups (CWGs) have been set up.

Amongst these CWGs is the “Service Engineering” group, which is coordinated by Schahram Dustdar (the coordinator of the NESSI project COMPAS and participant in S-CUBE). The objective of the CWG is to enable the creation of a research agenda and plan for the area of Service Engineering. The participating partners in this service engineering CWG consist of a number of EU projects involved in service engineering research.

Previous Meetings related to the Service Engineering CWG:

- 29th August 2008 – Vienna - Initial kickoff meeting service engineering CWG meeting [D7.4a]
- 22-23 September 2009 – Brussels – Discussion on structure, topics and planned contributions.

3.1.2. Results

One of the main tools through which to achieve the aims of the CWG was to publish joint work on the research done by the different partners. A joint case study was used to demonstrate the partners' work. Initial drafts of the case study chapter, that is considered the common chapter for all participating partners, were circulated in July 2009, followed by a revised version September 2009. The case study describes a scenario involving mobile phone services portability and shall act as the basis for (project) partner specific chapters. Drafts of the partner specific chapters were planned for the December 2009, reviewed February 2010 and resubmitted March 2010. Final camera-read copies for the chapters were submitted in May 2010. The resulting book "Service Engineering: European Research Results" went into production August 2010 and published by Springer in 2011 (<http://www.springer.com/computer/communication+networks/book/978-3-7091-0414-9>).

4. Other collaboration activities

4.1. NESSI

COMPAS is classified as a NESSI Compliant Project, so it plays a key role in the overall elaboration of NEXOF-RA.

Ernst Oberortner, Aliaksandr Birukou and Pascal Bisson participated in the NESSI Project summit (<http://www.nessi-europe.eu/NewsEvents/NESSIProjectsSummit/tabid/688/Default.aspx>), which took place on the 12th-13th of April 2010, in Valencia, Spain. They have demonstrated the COMPAS booth showcasing project results and making useful contacts. Also, together with MASTER they organized a session on compliance management where compliance management approaches of both projects have been presented in details.

4.2. Standards

In order to propose potential standardization material and to ensure the usage of COMPAS results especially beyond the project duration two specifications have been written and published.

The first specification on Compliance Requirements Specification Language proposes a compliance request language (CRL), founded on temporal logic and property specification patterns, for the formal specification of compliance requirements, which enables automated

verification and analysis techniques. A series of compliance patterns has been developed to support the definition of frequently recurring requirements in business process compliance context and is provided within the specification. This proposal on potential standardization of CRL was done by the COMPAS partner from European Research Institution on Service Science (ERISS) at Tilburg University. The specification is available at https://svn.compas-ict.eu/final/CRL_Specification/.

The second specification introduces a WS-BPEL Extension for Compliance Fragments (BPEL4CFrags) and enables the specification of reusable compliance fragments for implementing compliance requirements. The current version of this specification allows and eases the realization and creation of reusable solutions for compliance requirements from domains internal policy, licensing and security at design time. But the specification is, however, not limited to these domains. Concrete compliance fragments specified using BPEL4CFrags are provided in graphical as well as XML representation including source code. Additionally to the BPEL4CFrags XML schema a transformation of compliance fragments to executable WS-BPEL is defined using XSL Transformation. This specification was created by the COMPAS partner from Institute of Architecture of Application Systems (IAAS) at the University of Stuttgart. The specification is available at https://svn.compas-ict.eu/final/BPEL4CFrags_Specification/. One can find the source code of the graphical representations and the XML representations of the compliance fragment examples contained in the BPEL4CFrags specification at https://svn.compas-ict.eu/final/process_fragments/watchme/. Moreover you can find the XML schemas and XSL style sheet referenced and used within the BPEL4CFrags specification at https://svn.compas-ict.eu/final/BPEL4CFrags_Specification/xml_xsd_files/.

COMPAS as a NESSI project contributed to the Survey on Standardization Activities [NRA-S] in NESSI on February 28, 2010. NEXOF NSP Survey on Standardization Document
The goals of this survey have been as follows:

1. Assess concrete contributions from your project to standards organizations and standards
2. Assess also the general development status of the concerned standards
3. Collect references (such as publications, documents, links to specs, other assets such as Open Source components) to substantiate the contribution
4. Assess supporting organizations of the contribution and further potentials for support via NESSI and NEXOF
5. Assess related collaboration activities between NESSI projects that imply cross-project work on the standards contributions
6. Establish a link between the NEXOF patterns and standards contributions

5. Reference documents

5.1. Internal documents

- [D7.1] "Public Web-Site", <http://www.compas-ict.eu>
- [D7.3] "Plan for the use and dissemination of foreground and Technology Implementation and Business Plan (TIBP)", Version 4.0 of 2011-01-30.
- [NRA-S] NEXOF-RA DeliverableD9.2b. 2nd Report on Standardization Activities
<http://www.nexof-ra.eu/?q=node/707>