D7.4

Version: 1.00
Date: 2009-01-27
Dissemination status: PU
Document reference: D7.4

Report of collaboration activities and updates of the collaboration activities plan

Project acronym:	COMPAS
Project name:	Compliance-driven Models, Languages, and Architectures for Services
Call and Contract:	FP7-ICT-2007-1
Grant agreement no.:	215175
Project Duration:	01.02.2008 – 28.02.2011 (36 months)
Co-ordinator:	TUV Vienna University of Technology (AT)
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 Universita degli Studi di Trento (IT)
	TARC-PL Telcordia Poland (PL)
	THALES Thales Services SAS (FR)
	PWC Pricewaterhousecoopers Accountants N.V. (NL)

This project is supported by funding from the Information Society Technologies Programme under the 7th Research Framework Programme of the European Union.

Project no. 215175

COMPAS

Compliance-driven Models, Languages, and Architectures for Services

Specific Targeted Research Project

Information Society Technologies

Start date of project: 2008-02-01 Duration: 36 months

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

Revision 1.00

Due date of deliverable: 2009-01-31

Actual submission date: 2009-01-27

Organisation name of lead partner for this deliverable:

UNITN University of Trento, Italy

Contributing partner(s):

USTUTT Universitaet Stuttgart, Germany

TUV Vienna University of Technology, Austria

Project funded by the European Commission within the Seventh Framework Programme		
Dissemination Level		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

History chart

Issue	Date	Changed page(s)	Cause of change	Implemented by
0.1	2008-11-05	All sections	New document	UNITN
0.11	2008-11-24	All sections	Document structure and abstract	UNITN
0.12	2008-12-03	Section 2, Section 4. Section 3	Added information about ICSOC and NEXOF-RA. Added information about SSAI events	TUV,UNITN
0.13	2008-12-07	Section 2, Section 4	Added information about FMCO and NEXOF-RA	CWI
0.14	2008-12-09	Section 2, Section 4	Added info about COMPAS-MASTER meeting and standardization efforts	USTUTT
0.25	2008-12-13	All document	Prepared to the first review	UNITN
0.27	2008-12-19	All document	addressing TUV and USTUTT comments	UNITN
0.28	2009-01-08	Section 1.3 has been added, section 1.4 has been reformatted, preliminary plan for standardization offers has been added to section 4.2	Document improvement and additional contribution of USTUTT concerning future work on standardization	USTUTT
0.29	2009-01-12	All document	Input from THALES (focusing on NESSI although not exclusively)	THALES
0.30	2009-01-13	All document	Some minor fixes and accepting input from THALES and USTUTT, changes according to TARC-PL review	UNITN
0.40	2009-01-15	Section 3.2 added	Added information about Formal methods for SOA and Internet of the future working group	CWI
0.95	2009-01-14	All document	Prepared the final version	UNITN
0.96	2009-01-27	All document	Addressing reviewers' comments	UNITN

Authorisation

No.	Action	Company/Name	Date
1	Prepared	CWI, THALES, TUV, UNITN, USTUTT	2008-01-29
2	Approved	TUV	2008-01-29
3	Released	TUV	2008-01-30

Contents

List of figures

Abstract

This deliverable provides an update of the collaboration plan and reports on standardization activities and collaboration with other projects done during the first 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. This deliverable also updates the plan of collaboration with respect to that defined in [D7.2]. The plan is defined in terms of the identification of projects related to COMPAS, the list of events and working groups COMPAS participants might be involved in.

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. The dissemination, exploitation and usage of COMPAS results will be described in [D7.3].

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 SSAI (Service and Software Architectures, Infrastructure and Engineering) 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.

COMPAS definitions of terms were shared with NEXOF-RA and as such were an input to NEXOF-RA Glossary (http://www.nexof-ra.eu/?q=node/187).

1.4. Abbreviations and acronyms

CWG	Collaboration Working Group
DIVA	Dynamic Variability in Complex, Adaptive Systems
ETP	European Technology Platform
FP6	Sixth Framework Programme
FP7	Seventh Framework Programme
FMCO	Formal Methods for Components and Objects
MASTER	Managing assurance, security and trust for services
MOST	Marrying Ontology and Software Technology

NESSI	Networked European Software and Services Initiative
NEXOF-RA	NESSI Open Framework - Reference Architecture
OCC	Open Construction Cycle
PERSIST	Personal Self-Improving Smart Spaces
S-CUBE	Software Services and Systems Network
SeCSE	Service Centric Systems Engineering
SHAPE	Semantically-enabled Heterogeneous Service Architecture and Platforms Engineering
SSAI	Service and Software Architectures, Infrastructure and Engineering

2. Collaboration with other projects

Regarding collaboration with the MASTER[1] project, a joint meeting on the monitoring architecture has been organized. The motivation was to find similarities between the projects with respect to the monitoring architecture, and to jointly discuss such similarities. This meeting was hosted in the University of Trento on 4-5 August 2008 and the main result of the meeting was the design of the monitoring architecture and examples of using the architecture. This design is available in the COMPAS repository at https://svn.compas-ict.eu/meetings/2008-08COMPAS-MASTER/. Moreover the COMPAS and MASTER projects were compared, similarities have been identified and differences have been pointed out. The MASTER project focuses on security while the COMPAS project concentrates on compliance in general.

CWI participated in the technical concertation meeting on Formal Methods for Components and Objects (FMCO'08) http://www-sop.inria.fr/oasis/FMCO/fmco08.html which took place 21-23 October 2008 in Sophia-Antipolis, France. The outcome of this meeting is collaboration with the EU IST CREDO project http://old-www.cwi.nl/projects/credo/, and in particular, with Technical University of Dresden on application of model checking tools to compliance-aware business process analysis.

2.1. Organizing conferences and workshops

ICSOC-2008: Vincenzo D'Andrea (UNITN) and Frank Leymann (USTUTT) are general chairs of the conference, Mohand-Said Hacid (UCBL) is a panel chair, Florian Daniel (UNITN) is a publicity chair, Fabio Casati (UNITN) and Mike Papazoglou (TILBURG) are in the steering committee. Mike Papazoglou is also an area coordinator for Service Management. Salima Benbernou (UCBL), Fabio Casati (UNITN), Schahram Dustdar (TUV), Dimka Karastoyanova (USTUTT), Mike Papazoglou (TILBURG) are in the program committee. Schahram Dustdar is also in the demonstration committee, and, together with Mike Papazoglou are in the PhD symposium committee.

PESOS2008: Frank Leymann (USTUTT), Mike Papazoglou (TILBURG) are in the steering committee, Schahram Dustdar (TUV) is a program co-chair, Fabio Casati (UNITN), Dimka

[1] http://www.master-fp7.eu/ . MASTER project - Managing Assurance, Security and Trust for Services.

Karastoyanova (USTUTT), Willem-Jan van den Heuvel (TILBURG), and Uwe Zdun (TUV) are in the program committee.

A joint COMPAS-MASTER workshop (Compliance and Security Governance in organizations with ICT based on SOA) was organized at ServiceWave but cancelled.
This joint workshop will be revived in the context of the next ServiceWave Conference (ServiceWave'09).

There are also plans to setup a NESSI workshop devoted Security between RESERVOIR and MASTER (both NESSI Strategic Projects) and COMPAS (NESSI Project).

3. SSAI collaboration activities

3.1. Service Engineering Working Group

3.1.1. Background

The European Commission, DG Information Society, "Software and Service Architectures and Infrastructures" (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.

3.1.2. Plan

In the first meeting in Brussels (4-5 March 2008) several projects and people signed in their interest in participating in this working group. An invitation was sent out to all of those addresses provided by the EU commission and the following people attended the first meeting of the working group on 29 August 2008 in Vienna.

1. Arnor Solberg (DiVA, SHAPE)
2. Michael Crotty (PERSIST)
3. Carlos Iglesias (ROMULUS)
4. Andrea Zisman (S-CUBE, SeCSE(FP 6))
5. Martin Treiber (S-CUBE)
6. Uwe Zdun (COMPAS)
7. Paolo Bresciani (European Commission)
8. Schahram Dustdar (S-CUBE, COMPAS)

Apologies:

1. Uwe Assmann (MOST)

2. Michael Leuschel (DEPLOY)
3. Vincenzo D'Andrea (COMPAS)

In the first meeting the working group participants identified the following research challenges:

1. Specification of Services
2. Engineering of Service Compositions
3. Service Engineering Methodology
4. Relationship to Software Engineering Methodology
5. Relationship to Business Process Modeling techniques
6. Relationship to Ontology-driven techniques
7. Model-driven approaches
8. Mashup-approaches
9. Autonomic Adaptation - Service Engineering Techniques
10. Engineering of Self-* properties
11. Service Testing and Simulation
12. Service Governance Techniques
13. Management and Monitoring techniques for services
14. Service Evolution and Versioning
15. Engineering techniques for Human provided Services

These research challenges will provide the basic underlying structure of the planned scientific book with Springer. The book will be based on one case study which will be the basis of all chapters discussing the novel research contributions. Hence, the plan is that the book is not merely an aggregation of project outcomes but all novel contributions in the field of Service Engineering will be focusing on a shared case study. This will make it easier for the reader to fully grasp and value the novelties as well as make it easier to follow the current state of the art of the involved EU research projects in this area. The book is planned to be released in the end of 2009 – first quarter of 2010.

A first discussion of the structure, topics and planned contribution was presented on 22-23 September 2008 in Brussels at the SSAI event "Internet of Services: collaboration meeting for FP6 and FP7", where most of the above members were present as well.

The results of this work will be committed to NESSI (mainly NESSI SRA Committee and NESSI Working Group on Service Engineering) and the NEXOF-RA project (as the first project materializing NEXOF Concept – concept of Open Service Framework).

3.2. Formal Methods for SOA and Internet of the Future

3.2.1. Background

Formal Methods for SOA and Internet of the Future http://www.deploy-project.eu/mediawiki/index.php5?title=Formal_Methods_for_SOA_and_Internet_of_the_Futu

re is a CWG coordinated by Michael Leuschel from the University of Düsseldorf. This CWG aims at determining how formal methods would contribute to the specification, design, development and deployment of service oriented architectures, based on potential or real error risks analysis.

This analysis would rely on:

- experience gained through non-formal developments, as well as the reasons why some SSAI FP7 Call 1 projects are making explicit use of formal methods or plan to develop a formal framework (e.g., project SLA@SOI).
- "Negative" testimony/feelings (justified or not) explaining why formalities are not welcome in SOA are also expected to contribute to the analysis.

3.2.2. Plan

All projects participating to FP7 Call 1of Objective "Services and Software Architectures, Infrastructures and Engineering" are invited to contribute to the CWG discussion. The CWG is still organizing, gathering expression of interest from the projects.

A first discussion of the structure, topics and planned contribution was presented on 22-23 September 2008 in Brussels at the SSAI event "Internet of Services: collaboration meeting for FP6 and FP7". A number of projects, including COMPAS, DEPLOY, GRID4ALL, CREDIA, ProTEST and SmartLM, have expressed their interest in this discussion group.

The CWG plans a Workshop on Formal Methods for SOA and Internet of the Future at the iFM 2009 conference, February 2009 in Düsseldorf, Germany. On behalf of COMPAS, Farhad Arbab (CWI) will give a talk "Using Reo for Composition of web Services" and Natallia Kokash (CWI) will give a talk "From Compliant Business Process Specifications to Code".

4. Other collaboration activities

4.1. NESSI

NESSI ETP classifies COMPAS as a NESSI project, so it has the following main duties:

- significantly advance the state of the art in the focused area of compliance to the broad sense which is of utmost importance/relevance in the context of NESSI (SRA) and NEXOF (Concept of Open Service Framework),
- significantly contribute to Conceptual Reference Model (including Glossary) and Reference Architecture (including Specifications) of the NESSI Open Service Framework. This while being compliant to open source and open standards principles which are core to NESSI.

As such the participants of the COMPAS project are involved in relevant NESSI Working Groups (e.g. Service Engineering, Business Process Modeling, Trust, Security and Dependability). They are also direct contributors to NEXOF and NEXOF-RA Project. This is done, for instance, through Open Construction Process [NOASP] whose schedule is reported in Figure 1.

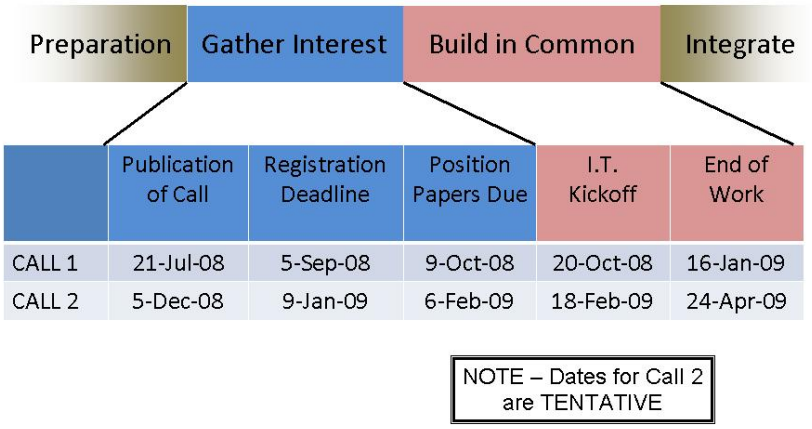

Figure 1 Calls of the open construction process.

COMPAS partners contributed to 1st Open Construction Cycle (OCC). Topics open to this first OCC were:

- Core Service Framework Area
  –Service Description
  –Design Time Service Composition
  –Service Discovery
  –Interoperability of Message-Based Service Interaction
- User Interaction Area
  –Declarative Authoring Language for User Interfaces
  –Context Model and Universal APIs
- Infrastructure Area
  –Definition of Infrastructure Services
- Security Area
  –Dynamic Identity Management for SOA
  –Privacy Management in SOA
- Quality of Service Area
  –Scalable Approaches to Service Oriented Infrastructures
  –Highly Availability for Multi-Tier Architectures

The main effort of COMPAS was put on Core Service Framework Area and more specifically Service Discovery and Design Time Service Composition topics where two position papers were submitted:

- A position paper titled “Collaborative web service discovery” and authored by Aliaksandr Birukou, Vincenzo D’Andrea (UNITN), and Natallia Kokash (CWI) [BDK08] has been submitted and accepted to the Service Discovery topic. The proposed approach has been included in the conceptual summary of contributions[2].

[2] http://www.nexof-ra.eu/sites/default/files/NEXOF-RA-ItC-SERVICE%20DISCOVERY.pdf

- A position paper “Design-time Service Composition with Reo Coordination Tools” authored by Farhad Arbab, Natallia Kokash and Ziyan Maraikar [AKM08] has been submitted and accepted to the “Design-time Service Composition” track.

Design patterns derived from the proposed approaches are now under review of the NEXOF-RA coordinators.

For next period, COMPAS Project and partners will continue to support NESSI and NEXOF through appropriate instruments would it be through NESSI Working Groups and/or Investigation Teams resulting from current and next OCC(s). With respect to 2nd OCC we give hereafter a list of possible topics (so called candidates topics) as reported during the Investigation Teams Kickoff of October 20, 2008.

- Core Service Framework Area
  –Federated Registries
  –Distributed Intelligent Deployment
  –Service Lifecycle Management
  –Event-Driven Architecture
  –Access to Current Assets / Legacy Integration
  –Service Creation
  –Semantic Interoperability
  –Semi Dynamic Service Composition and Service Goal Decomposition
  –Intelligent Service Discovery - Service Capability Extraction
- User Interaction Area
  –Context Binding Models and Policies
  –Expressing Service Front-End Resource's Metadata
  –Standard APIs for the Service Front-End Resource's Execution Environment
- Infrastructure Area
  –Service and deployment description languages for infrastructure services
  –Infrastructure service reference points (usage and management)
- Security Area
  –Dynamic Security in SOA and SOI
  –Multi-level Security in Interconnected Systems
- Quality of Service Area
  –Description of non Functional Aspects
  –SLA and QoS
  –Federated and Autonomic Management in SOA
  –Transactional Support for SOA

The list of topics for the 2nd OCC has not been finalized yet but will be announced soon. In any case, COMPAS and partners are committed to answer this second cycle and further cycles, if any.

COMPAS is aware of and using where possible the NEXOF-RA glossary of terms and as a NESSI Project contributed to it by sharing definitions with the NEXOF-RA Project.

Till Jan 2010, COMPAS activities for NESSI will be mainly governed by detailed plans of each NESSI Working Group as published on the Web site (www.nessi-europe.com), successive OCCs run by NEXOF-RA (announced on NEXOF-RA Web Site), and also including dedicated meeting/workshop between COMPAS and other NESSI Strategic Projects (e.g. MASTER, RESERVOIR) that will be organized when necessary. This is in order to make visible and tangible (e.g., concepts, architectural patterns, software artefacts) the contribution of COMPAS to the NEXOF-RA overall objectives (Conceptual Reference Model, Reference Architecture Specifications, Proof-of-Concept and NEXOF Roadmap).

4.2. Standards

Task T7.3 Standardization in Work Package 7 [DoW] is dedicated to continuously monitor the project advancement to detect the eventuality of submitting some work to standardization committees. Therefore USTUTT, as responsible partner for standardization, is in close contact with all other project partners to identify and recognize the possibility for standardization of certain COMPAS results as soon as possible. The responsibility of USTUTT as lead for standardization does not cover the standardization process itself, but the collection and submission of COMPAS results to feasible standardization bodies with the purpose of pointing out possible standardization material. The standardization of certain COMPAS results may have a significant impact on the application and employment of the COMPAS approach in industry.

It is an objective to possibly propose new standards from ideas coming out of the project. The envisioned outcomes of COMPAS as mentioned in [DoW] are a standard for an XML-based language for specifying user requests and standard extensions of BPEL for dynamic, reusable, and adaptable service orchestrations. The preliminary plan about standardization efforts until the end of the project prescribes that we need to frequently check for, elaborate on and thoroughly discuss possible contributions within the project. In detail, the leader (USTUTT) for the Task T7.3, Standardization, will therefore conduct the following steps:

- Send out a questionnaire (via e-mail) to the COMPAS consortium quarterly in order to assess
  - What the possible contributions of the partners are
  - What the status of a certain contribution is in terms of maturity, proof of concept and degree of elaboration
  - The material available for submission to a standardization body
- Depending on the responses of the questionnaire, in other words if a possible proposal for a standard is recognizable, USTUTT will invite the according partner(s) for a workshop in order to identify a feasible standardization body and help preparing the material for submission

THALES will promote COMPAS results from the specific viewpoint of Standards to NESSI and NEXOF (represented by NEXOF-RA Project) through NESSI Standardization Committee.

5. Summary and conclusions

This deliverable reports on the collaboration activities done in the first year of the COMPAS project and provides an updated collaboration plan with other projects and in the SSAI and NESSI activities. It also provides a plan of starting the work on standardization activities.

The report of the collaboration activities for the second year of project and the plan for the third year of project will be delivered at M24, according to [DoW].

6. Reference documents

6.1. Internal documents

[DoW] "Description of Work", version 15 of 2007-09-25

[D7.1] "Public Web-Site", http://www.compas-ict.eu

[D7.2] "Collaboration activities plan"

[D7.3] "Plan for the use and dissemination of foreground and Technology Implementation and Business Plan (TIBP)"

6.2. External documents

[AKM08] F. Arbab, N. Kokash, Z. Maraikar: "Design Time Service Composition with Reo Coordination Tools". NESSI Open Framework - Reference Architecture (NEXOF-RA), 2008, available at http://www.nexof-ra.eu/?q=rep/term/157.

[BDK08] A. Birukou, V. D'Andrea, N. Kokash: "Collaborative Web Service Discovery". NESSI Open Framework - Reference Architecture (NEXOF-RA) – Service Discovery, 2008, available at http://www.nexof-ra.eu/?q=rep/term/158.

[NOASP] Open Architecture Specification Process – Open Construction Cycle #1 Invitation to Contribute http://www.nexof-ra.eu/sites/default/files/NEXOF-Invitation.pdf