Grant Agreement N° 215483

Title:	***Plan for Joint Publications***
Authors:	*UniDue, Tilburg, CITY, CNR, FBK, INRIA, Lero@UL, POLIMI, SZTAKI, TUW, UCBL, UoC, UPM, UHH, USTUTT, VUA, University of Manchester*
Editor:	*Neil Maiden, Ângela Kounkou (City University London).*
Reviewers:	*Schahram Dustdar (TUW),*
	Dimitris Plexousakis (UoC).
Identifier:	*CD-SoE-1.2.5f.*
Type:	*Deliverable*
Version:	*1*
Date:	*29th February 2012*
Status:	*Final*
Class:	*External*

Management Summary

This deliverable reports co-authored S-Cube publications that are in progress, submitted and accepted but not published at M48 of the S-Cube Network of Excellence. A commentary is also provided to describe deviations from the publication plan, and how we deal with them through internal cooperation.

The research leading to these results has received funding from the European Community's Seventh Framework Programme FP7/2007-2013 under grant agreement n° 215483 (S-Cube).

1 Planned Co-Authored Publications

The following are the planned research publications at the end of the S-Cube Network of Excellence. For each publication this section reports the S-Cube work package for which the research was undertaken, other work packages, tasks an deliverables that the work also relates to, and the institutions of the co-authors of the publication. The planned publications represent research outputs in three states: (i) still in progress – being written; (ii) submitted for review; (iii) accepted for publication but not yet published. These states are reflected in the planned publications – some have clear titles and author lists, whilst others are simple descriptions of early collaborative research outcomes.

The collaborations undertaken to complete these publications have been and will continue to be carried out using different methods, ranging from student visits through the S-Cube mobility program, conference calls, S-Cube meetings, meetings at conferences and workshops, etc. and contribute to the integration of each partner's research agenda.

The remainder of this section reports the planned research publications by activity, and by work package with activity, starting with work package JRA1.1.

1.1 JRA-1: Engineering & Adaptation Methodologies for Service-based Applications

At M48 the consortium is still planning the production of **25** research publications in JRA-1.

1.1.1 WP-JRA-1.1: Engineering Principles, Techniques & Methodologies for Hybrid, Service-based Applications

WP-JRA-1.1 will integrate design and discipline knowledge from the related fields that impact on engineering of service-based applications. The workpackage has three individual tasks to coordinate design knowledge about software-based systems (T-JRA-1.1.1), codify human-computer interaction (HCI) discipline knowledge relevant to service-based application engineering (T-JRA-1.1.2) and to codify contextual discipline knowledge relevant to service-based application engineering (T-JRA-1.1.3). At the end of the project the consortium is still planning **12** research publications in JRA1.1. Of these 12, 7 are still in progress, 2 has been submitted and are pending the review decision, and 3 have been accepted for publication but not yet published.

Collaborators	Description	Also Relates or contributes to	Status
TILBURG UCBL/UPD	Service evolution is the continuous process of service development through a series of consistent and unambiguous changes, and focuses on shallow changes, i.e. changes that do not affect their context and therefore do not require the adaptation of the interacting with the service parties. This publication will formalize aspects of service description and demonstrate how the principles and best practices of software evolution apply to them. A series of publications have already been produced and more have been planned for submission in the immediate future.	JRA1.2	Accepted: Andrikopoulos, V., Benbernou, S., and Papazoglou, M. "On the Evolution of Services," in IEEE Transactions on Software Engineering (TSE) (to appear)
LERO@UL VUA	The collaboration will focus on how to take software process quality into account when developing services. This work will investigate the	JRA-1.1	Submitted to Service-Oriented

	gaps that currently exist between software process quality (focusing particularly on the maintenance of the software product) and the adaptability of services software (as shown in the S-Cube life-cycle left-hand side in deliverable CD-IA-3.1.1). A software process model will be devloped for the services maintenance cycle based on the gap analysis.		Computing and Applications Journal
LERO@UL POLIMI	This paper aims to address the issues faced by globally dispensed software development projects by making use of cloud computing. The solution space presented in this paper is based on literature review on both cloud computing and GSD. In addition, we input industrial data into our research that was collected through interviews with 20 software professional working on 2 different GSD projects and were distributed across multiple geographical sites. The outcome of this research is a model that proposes the use of the cloud paradigm for different communication and knowledge transfer problems associated with the technical processes involved in distributed software development. The proposed model can be used by software organizations that are involved in multisite software development. In addition, it can provide a solid rationale for software project managers who plan to conduct GSD in an efficient as well as in a cost effective way.	JRA-1.1	Still in Progress
POLIMI VUA	Analysis of the impact of service-specific aspects on the life cycle of SBAs and on identifying proper viewpoints for the design of adaptable service-based applications. Such viewpoints serve as guidelines to support designers in the development process.	This WP only	Still in progress
POLIMI CITY	Service-based applications start to be preferred by organizations since they are able to offer complex functionalities by guaranteeing interoperability and flexibility. However, the design of such applications is not a trivial task since developers have to guarantee the alignment between the designed business process and the available services. In fact, these applications are executed by composing and invoking a number of available web services, which are often not under the control of systems developers. Services are simply exploited to obtain a specific functionality and they can be unavailable or change without notice. At the same time, any change in business processes will also cause a conflict between the business process and its supporting services. All the unforeseen changes might cause critical failures in the service discovery phase. This paper has been rejected from MONA 2009, will be revised to be resubmitted to another workshop. It proposes a framework that supports the alignment between the design of the process and the available knowledge about services in order to support the design of adaptive service-based applications and improve their dependability.	This WP only	Still in progress
LERO@UL CITY	End-users often communicate their needs and wishes using natural language. These statements are then used as input to start requirements elicitation and negotiation supported by requirements analysts. Although this approach allows overcoming several issues regarding natural language requirements descriptions (e.g., ambiguity, incompletes) it does not allow to react immediately on end-user needs in terms of software provision. Furthermore this time and resource intense approach often does not allow tailoring software to particular needs of individual stakeholders. This paper presents initial ideas towards using codified context knowledge to help elicit more contextual requirements, with the goal of configuring a service-	JRA-1.1	Still in progress

	oriented software systems without the help of analysts and software engineers. Our approach tries to bridge software product lines and requirements engineering to come up with a better understanding of the users' needs.		
FBK, POLIMI	A Variable Context Model for Adaptable Service-based Applications When building service-oriented systems the evolution of requirements and context is the norm rather than the exception. Therefore, it is important to make sure that the system is able to evolve as well without necessarily starting a completely new development process, and possibly on the fly. The literature offers technical approaches to manage the context-aware on the fly adaptation of service-based applications. However, to our knowledge, a comprehensive approach to design and develop adaptable Service Based Applications (SBAs) is still missing. Our work tries to fill this gap. In this work we focus on the role of the context in the adaptation activities. In a paper accepted at the workshop PESOS 2010 a proper context model has been proposed together with the definition of a preliminary framework that defines the situations that trigger the adaptation or evolution of a service-based application, and, at runtime, enables the identification and the collection of the proper context information. Currently, the work is focused on the definition of a mature framework able to support both quality- and context-aware adaptation of SBAs.	CD-JRA-1.1.5	Accepted for publication in IJARAS Journal
VUA UPM	Service-oriented Architecture is an emerging paradigm for the execution of business-oriented as well as technical infrastructure processes by means of services. Automating the execution of services is of paramount importance in order to fulfill the needs of companies. However we have found that automation -although important- is seldom addressed explicitly as a concern when stating requirements or designing the software architecture of the service-based applications (SBAs). In this paper we define three architectural viewpoints framing the concerns about service automation. These three viewpoints, called 3D (Decisions, Degree, Data), respectively: express architectural decisions about automation; help identifying the level (degree) of automation required, and represent the specific data required to support automation in services. They have been applied to threeindustrial case studies and one academic experiment. Results show that they successfully support both technical and non-technical stakeholders in understanding how, and communicating upon, their concerns related to service automation have been addressed. The application of the 3D service automation viewpoints to different domains exhibits promising reusability.	This WP only	Submitted to Journal of Systems and Software
Lero@UL, FBK, POLIMI	The loose coupling of services and Service-Based Applications (SBAs) have made them the ideal platform for context-based run-time adaptation. There has been a lot of research into implementation techniques for adapting SBAs, without much effort focused on the software process required to guide the adaptation. This paper aims to bridge that gap by providing an empirically grounded software process model that can be used by software practitioners who want to build adaptable SBAs. The process model will focus only on the adaptation specific issues. The process model presented in this paper is based on data collected through interviews with 10 practitioners occupying various roles within 8 different companies. The data was analyzed using qualitative data analysis techniques. We used the output to develop a set of activities, tasks, stakeholders and artifacts that were used to construct the process model. The outcome of the data analysis process was a process model identifying nine sets of adaptation process attributes. These can be used in conjunction with an	JRA-1.1	Accepted for publication in Information and Software Technology Journal

	organisation's existing development life-cycle or another reference life-cycle. The process model developed in this paper provides a solid reference for practitioners who are planning to develop adaptable SBAs. It has advantages over similar approaches in that it focuses on software process rather than the specific adaptation mechanism implementation techniques.		
USTUTT, POLIMI	Investigating Software-Engineering approaches for modelling Scientific- and Manufacturing Workflows	WP-JRA-2.2	Still in progress
PoliMi, VUA	*Global* Software Engineering (GSE) comprises teams distanced in space, time and culture. In organizational research, this interplay is called an "Organizational Social Structure" (OSS). Previous literature in GSE shows that its OSS is highly dynamic and unpredictable. This paper presents a mapping of OSS types on GSE organizational factors, and vice versa, based on empirical evidence. We made two key observations: first, current OSS types don't support factors related to GSE process management and organizational efficiency (e.g. risk management, language, reporting, etc.). Second, OSS's in GSE has attributes which don't match any GSE factors but rather introduce new ones, and they all concern localization (e.g. visibility of skills to others, their (re-)localization as needed, etc.). Our conclusions are twofold. On one hand, research in OSS's for GSE should focus on increasing its support to process management and organizational efficiency factors. On the other hand, research in GSE should include factors focusing on localization.	IA-3.1	Still in progress
VUA,INRIA	*Global* Software Engineering (GSE) is a volatile and unstable process in which many actors interact together with unpredictable premises, often producing unexpected outcomes. Moreover, distances in space, time and culture among these actors, make GSE dynamics even more unpredictable. Agile Service Networks (ASNs) provide an efficient and scalable way to represent and support communication in (GSE). We concluded this through a case-study, by simulating ASNs' behavior in a (common) "wicked-problem" scenario from GSE practice.	IA-3.1	Still in progress

1.1.2 WP-JRA-1.2: Adaptation & Monitoring Principles, Techniques & Methodologies for Service-based Applications

This workpackage will define principles and techniques for the cross-layer monitoring and adaption of service-based applications. It is split into three tasks that analyze existing adaptation and monitoring principles, techniques and methodologies, their integration and the emerging area of contextual monitoring. The consortium is planning **4** research publications in JRA1.2, 3 of which are still in progress, and 2 of which has been submitted for publication.

Collaborators	Description	Also Relates or contributes to	Status
FBK POLIMI	A comparison of different approaches to monitoring and adaptation from a holistic point of view, aiming at their integration in a coherent whole.	None	Still in progress
FBK POLIMI	Fuzzy-logic based adaptation strategy selection Selecting an appropriate adaptation strategy in service-based systems	This WP Only	Still in progress

	is a complicated issue. Basically a problem in the system can be addressed using various sets of adaptation actions where each one has different consequences. We benefit from CLAM (cross-layer adaptation manager) that is an impact analysis approach to discover alternative adaptation strategies. The final decision for selecting the best strategy among alternatives is evaluated in a ranker module using fuzzy logic. The best path is taken by inferring adaptation selection criteria using a fuzzy inference system. We consider criteria such as degree of QoS improvement and path (strategy) value. While QoS improvement for the whole SBS relies on the improvements in the process execution time, process cost (cost of service invocations) and the underlying infrastructure cost; path value relies on the summation of the enactment time and cost of the adaptation actions on a path. Enactment time of adaptation action is the total time required to apply an adaptation to the SBS. Enactment cost of an adaptation action is decided based on (i) the penalties and new contracts that the application owner should pay due to an adaptation, (ii) the cost of the labour required by human, i.e., whether the enactment is automatic or requires human involvement.		
FBK CITY	Adaptation of monitoring rules to handle SBA changes Monitoring is a key issue in SBA life-cycle that enables all forms of proactive and reactive adaptation at the different layers of the application. Monitoring techniques are based on a set of captors attached to different entities in the system and in the environment capturing the events that are relevant for the application, and on a set of monitoring formulae aggregating and correlating these events into complex system properties. The dynamicity and adaptability of SBA may affect the entities to which the captors are attached and thus invalidate/alter the system properties to be monitored. The objective of this research question is to investigate new techniques dealing with the (semi-) automatic adaptation of SBA monitors as a reaction to changes/adaptation in the application.	This WP only	Still in progress, o be submitted to PESOS2012
Tilburg UPD	Services operate in a very dynamic environment, requiring them to be able to evolve on demand to face various challenges. Service developers need to be able to manage this evolution in order to ensure that it is consistent, non-disruptive and unambiguous. Useful lessons toward this effort can be drawn from the experiences in software evolution. A number of service-specific issues however also need to be addressed, requiring a revisit of the concepts and techniques for compatibility, versioning and development lifecycles in the context of services.	JRA 1.1	Submitted to Encyclopedia of Software Engineering

1.1.3 WP-JRA-1.3: End-to-End Quality Provision & SLA Conformance

This workpackage aims to define the principles, techniques and methodologies for specifying, negotiating and assuring end-to-end quality provision and SLA conformance. It will do this through defining the interfaces and interrelationships between the functional layers (i.e., between service infrastructure, service composition and co-ordination and business process management). This work is split into three tasks: T-JRA-1.3.1 will produce a quality reference model for service-based applications whilst tasks T-JRA-1.3.2 and 1.3.3 devise and ensure the principles, techniques and methodologies for specifying and negotiating end-to-end quality requirements and quality aspects of SLAs. The consortium has planned **8** research publications in JRA1.3 for the last period. Of these 8, 5 are still in progress, 2 have been submitted and are pending the review decision, and 1 has recently been accepted for publication.

Collaborators	Description	Also Relates or contributes to	Status
UCBL POLIMI	This work has the objective of aligning semantic service descriptions and descriptions of their quality of service. The aim is to use these descriptions to enhance matchmaking algorithms so that semantic and quality requirements can be simultaneously taken into account and fulfilled as much as possible.	WP-JRA-1.3 WP-JRA-2.2	Still in progress
POLIMI, UCBL, VUT, UPM, SZTAKI, TILBURG	The goal is to compare the approaches to QoS description nowadays presented in the literature, where several models and meta-models are included. Our survey is done by inspecting the characteristics of the available approaches, to reveal which are the consolidated ones and to discuss which are the ones specific to given aspects, and to analyze where the need for further research and investigation is. The approaches here illustrated have been selected based on a systematic review of conference proceedings and journals spanning various research areas in Computer Science and Engineering including: Distributed, Information, and Telecommunication Systems, Networks and Security, and Service-Oriented and Grid Computing.	This WP only	Submitted to ACM Computing Surveys
UniDue, UPC	This joint work has set out in order to exploit the experience gained in usage-based testing of software systems and components and adopt those techniques to enable online test case selection and prioritization for service-oriented systems. The idea is to extend an existing monitoring and testing framework (SALMon framework) with components to collect usage profiles and select and execute usage-based online tests.	JRA-1.2 and JRA-2.2	Submitted to IWCS'2012
UniDue, IT Innovation	Future Internet applications will draw on the convergence of Services, Things, Contents and Networks. This means that the capabilities and features of FI applications will be provided – to a large extent – by third parties (e.g., through Internet-based software services, public sensor networks or cloud infrastructures). As a consequence, it will become of paramount importance to build FI applications in such a way that those applications can dynamically and autonomously respond to changes in the provisioning of services, availability of things and contents, as well as changes of network connectivity and end-user devices. Initial solutions for the dynamic adaptation of software and service systems exist. However, those solutions need to be significantly augmented, improved and integrated with a complete system perspective. Specifically, due to the very large scale of FI applications, this requires significant progress towards distributed and highly dispersed adaptation strategies and solutions. In this collaboration, the outcomes of three major EU projects (incl-S-Cube) in the different FI areas will be investigated to understand existing monitoring and adaptation capabilities. This will be driven by innovative, representative, cross-cutting FI application scenarios. Thereby, we achieve an understanding of the future research needs and gaps to be addressed to make FI applications become fully self-adaptive.	JRA-1.*	Published as IGI book chapter
UniDue, SZTAKI, UPC	Analysis of effects and efficiency of cross-layer adaptation of service-based systems.	JRA-1.2, JRA-1.3, JRA-2.3	Still in progress
POLIMI, SZTAKI	Mechanisms to support the delegation of negotiation tasks to third	JRA-1.3	Still in progress

	parties.		
UniDue, UPM, TUW	Various quality prediction (QP) approaches work differently, in different settings and with different assumptions, and at different stages of the life-time of an SBA. Ideally, we would like to be able to choose from the best of all worlds for each situation, and, if possible, to dynamically switch between the QP approaches. However it can be argued that this will not be possible unless the approaches become compatible to a certain degree; e.g., on the level of their basic requirements or assumptions. Moreover, in order to effectively select the best approach for every scenario, we need to have a procedure to determine the conditions in which an approach can be applied and bring a competitive advantage over the others. This joint work investigates into a unifying framework which entails compatibility.	JRA-1.3, JRA-2.2	Still in progress – to be submitted to TOIT
UPC, US	Quality assurance techniques have been developed to supervise the service quality (QoS) agreed between service-based systems (SBSs) consumers and providers. Such QoS is usually included in service level agreements (SLAs) and thus, SLA monitoring platforms have been developed supporting violation detection. However, just a couple of them provide explanation of the violation causes, and not in an user-friendly format. Therefore, we propose a general monitoring and analysis conceptual architecture and we instantiated it with SALMonADA, a SBS that notifies the clients with violations and their causes in their own non-technical user terms. In addition, our platform performs an early analysis notification that avoids delays in the client notification time when a violation takes place. Moreover, we have implemented a web application as a SALMonADA client, to prove how it monitors, analyses and reports to their clients the service level fulfillment of real services subject to an SLA specified with WS--Agreement.	JRA-1.2	Still in progress, to be submitted to PESOS'12

1.2 JRA-2: Realization Mechanisms for Service-based Systems

At month M48 the consortium is planning the production of **20** further research publications in JRA-2.

1.2.1 WP-JRA-2.1: Business Process Management (BPM)

The principle objective of WP-JRA-2.1 is to scrutinize and develop fundamental new concepts to drive service implementation from business models relating to software service providers and telecommunication service providers. The work is split into two tasks: developing requirements for services in Agile Service Networks (T-JRA-2.1.1) and producing a model on which to base business transactions (T-JRA-2.1.2). The consortium is planning **8** research publications in JRA2.1, Of these 13, 1 is still in progress, 5 have been submitted and are pending the review decision, and 2 have been accepted for publication but not yet published.

Collaborators	Description	Also Relates or contributes to	Status
LERO@UL TILBURG	Processes are the main constituents of public services and as such demand correct and complete execution. Increasingly however, governments feel the pressuring need to deliver public services more quickly and personalized to the needs of local communities or citizens. This not only jeopardizes their quality but also requires them to form teams that combine deep technical and programming knowledge with business experts. It is the aim of this research project to deliver a framework to customize generic processes to produce context specific one.	JRA 2.1	Submitted to International Conference of Business Process and Service Computing (BPSC)

			Submitted to International Conference of Service Science (ICSS)
			Submitted to International Conference on Web Information Systems and Technologies (WEBIST)
		This WP only	Submitted to Journal On Advances in Networks and Services.
TILBURG, UCBL	Today's enterprises demand a high degree of compliance of business processes to meet regulations, such as Sarbanes-Oxley and Basel III. To ensure continuous guaranteed compliance, compliance management should be considered during all phases of the business process lifecycle; from the analysis and design to deployment, monitoring and evaluation. We are working on an integrated business process compliance management framework that incorporates design-time verification and runtime monitoring approaches. The nutshell of the framework is the Compliance Request Language (CRL), which is a high-level pattern-based language for the abstract specification of compliance requirements. From CRL expressions, formal compliance rules can be automatically generated, thereby eliminating the need for business and compliance experts to learn and use complex low-level formal languages. Formalized compliance rules enable automated approaches to be used for verification and monitoring of business processes. A series of publications have already been produced and more have been planned for submission in the immediate future.	This WP only	Submitted to the IEEE EDOC Conference, 2012.
UCBL/UPD/USTTTUT	Web services privacy issues have been attracting more and more attention in the past years. Since the number of Web services-based business applications is increasing the demands for privacy enhancing technologies for Web services will also be increasing in the future. In this paper, we investigate an extension of business protocols, i.e., the specification of which message exchange sequences are supported by the web service, in order to accommodate privacy aspects and time-related properties. For this purpose we introduce the notion of Timed Privacy-aware Business Protocols (TPBPs). We also discuss TPBP properties can be checked and we describe their verification process.	This WP only	Accepted for publication in International Journal of Cooperative and Information Systems March 2012
TILBURG, UniDUE	Constructing comprehensive views on Service Networks (SNs) to deliver functionality in lifelike quality. The research focuses on combining current work in measuring the performance indicators at different levels of SNs, e.g. BPM layer, service composition and coordination layer, and service infrastructure layer. By doing that, it aims to reveal the relations between performance indicators crossing different layers. Researcher from partners have illustrated	WP-JRA-1.3	Still in progress

	the problem and work scope, and conceptually shown an exemplary relation between KPI and quality of service (QoS). Currently representative case studies for validation are under analysis.		
UoC, TILBURG	Service businesses are currently viewed as interdependent entities that achieve competitive advantage by fostering partnerships and co-evolving with competitors. Service networks are formed to describe these relationships and reveal value created and shared among them. We analyze network participants' behavior aiming to optimize their own value. We describe ecosystems in which more than one competing networks co-exist and interact with one another to their own benefit. We perform simulations to measure the performance of service networks and investigate optimal strategies for competing systems. We describe various scenarios defining dynamic strategies for competing players and show experimentally that after a small number of time slots these strategies reach an equilibrium in which no one is willing to diverge from its decision to his own benefit.	This WP only	Accepted at IARIA International Journal On Advances in Networks and Services

1.2.2 WP-JRA-2.2: Adaptable Coordinated Service Compositions

WP-JRA-2.2 has the objective of investigating various aspects of service composition and coordination to provide the mechanisms and technological underpinnings for adaptable, service-enabled business processes in multiple domains. This is performed in tasks that will create mechanisms for business process support in terms of coordinated service compositions and their technical realization (T-JRA-2.2.1) and identification of requirements towards the mechanisms and techniques enabling self-configuring, adaptable and dynamic service compositions as well as specification of foundations for technological support for such systems (T-JRA-2.2.2). The consortium is planning **6** research publications in JRA2.2. Of these 6, 4 are still in progress and 2 have been submitted and are pending the review decision.

Collaborators	Description	Also Relates or contributes to	Status
UPM POLIMI	This collaboration aims to align semantic service descriptions and descriptions of their quality of service. This is of interest to JRA-2.2 as semantic-based matchmaking will be enriched with QoS-based requirements.	This WP only	Still in progress
UCBL USTUTT	The fragmentation of a Web service composition partitions the composition model (into fragments) that can be manipulated by multiple execution engines. These partners are working together on dynamic fragmentation and developing algorithms and techniques for splitting and merging service compositions in a dynamic manner. For this, they plan to use existing techniques developed for workflow fragmentation, process mining and fragmented graphs.	CD-JRA-2.2.6	Still in progress
UPD	Many cloud providers offer on demand application as a BPaaS "Business Process as a Service" through multi-tenant cloud platforms, allowing many companies to outsourse their business processes. That is, an increasing amount of personal data involved in business processes is automatically gathered and stored on the cloud. For cost saving, some fragments of business processes can be shared between the clients on the cloud regardless of privacy risks. In this paper, we propose a k-anonymization based approach to preserve the client business activity while sharing process	JRA 2.1	Submitted to Caise2012 conference

	fragments between organizations on the cloud.		
TUW POLIMI	TUW is working with Polimi on HPS (Human Provided Service) and Web service mashups. The goal of the collaboration is to create a lightweight mashup description with regard to QoS and context information and to integrate these it into executable BPEL processes. The collaboration has been established between the partners through S-Cube meetings at Amsterdam and Lyon and the consequent interaction through telcos and e-mails. A submission is planned to ICSOC 2009 and a follow up paper is planned for summer / autumn 2009.	CD-JRA-1.3.2 CD-JRA-2.2.2/4	Still in progress
UPM TUW	This work will concentrate on automatic derivation of dynamic, continuous-time QoS / resource consumption models for service compositions. Based on the preliminary results, this work will aim at (a) validation of the continuous-time models against the workflow modeling formalisms, and (b) automated derivation of the continuous-time model from executable workflow specifications. On that basis, the work will also aim at deriving dynamic QoS properties of the modeled service compositions.	This WP only	Still in progress
UPM UOC	While existing service description frameworks attempt to describe service compositions using a variety of composition models ranging from orchestrations to choreographies to Finite State Machines, no framework successfully handles the problem of automatically producing specifications for a composite service, based on the specifications of the participating services. Our work aims to provide a thorough and efficient process of automatically deriving composite specifications based on the specifications of the participating services by attempting to deduce the minimum subset of these specifications that needs to be exposed to the service consumer.	This WP only	Submitted to COMPSAC 2012

1.2.3 WP-JRA-2.3: Self-* Service Infrastructure and Service Discovery Support

WP-JRA-2.3 will define policies, monitoring and redeployment techniques, for adaptive and self-healing services, specify and develop registry support for service metadata, QoS attributes, service composition, and federation of service registries and provide service ranking information on the basis of historical usage information. Work is structured in two tasks, to develop infrastructure mechanisms for the run-time adaptation of services (T-JRA-2.3.1) and in service registration and search (T-JRA-2.3.2). The consortium is planning **6** research publications in JRA2.3. Of these 6, 3 are still in progress and 3 have been accepted for publication.

Collaborators	Description	Also Relates or contributes to	Status
CNR TUW	Service-Oriented Architectures (SOAs), and traditional enterprise systems in general, record a variety of events (e.g., messages being sent and received between service components) to proper log files, i.e., event logs. These files constitute a huge and valuable source of knowledge that may be extracted through data mining techniques. To this end, process mining is increasingly gaining interest across the SOA community. The goal of process mining is to build models without a priori knowledge, i.e., to discover structured process models derived from specific patterns that are present in actual traces of service executions recorded in event logs. However, in this	This WP only	Accepted for publication at 1st International Workshop on Adaptive Services for the Future Internet (WAS4FI)

	work we focus on detecting frequent sequential patterns, thus considering process mining as a specific instance of the more general sequential pattern mining problem. Furthermore, we apply two sequential pattern mining algorithms to a real event log provided by the Vienna Runtime Environment for Service-oriented Computing, i.e., VRESCo. The obtained results show that we are able to find services that are frequently invoked together within the same sequence. Such knowledge could be useful at design-time, when service-based application developers could be provided with service recommendation tools that are able to predict and thus to suggest next services that should be included in the current service composition.		
CNR TUW	CNR will work with TUW on exploiting information about how users interact with the infrastructure and in particular how users implicitly define business processes through the infrastructure itself. Some preliminary work has been already carried out by CNR itself on logs coming not from service-based infrastructures but from search engines. The aim for is to publish papers in relevant IR and DM conferences and journals such as VLDB and ACM TWEB.	This WP only	Still in progress
CNR TUW INRIA SZTAKI	It is particularly important that for the infrastructure supports the self-* (i.e. self-organization, self-adaptiveness, self-management, self-monitoring, self-tuning, self-repair, self-configuration, etc.) execution of services and business processes. CNR has a strong expertise on this area and will work together with the other partners listed to definite novel self-* methodologies for service-based infrastructures. Work to develop autonomic computing techniques and bio-inspired algorithms for self-* will be performed.	This WP only	Still in progress
CNR SZTAKI	Partners plan to carry out some experimentation on the chemical model established earlier in the project. The aim of the experimentations is to validate the model and study and improve the evolving nature of the chemical instantiation (composition) process. The experimental framework would be the HOCL interpreter also developed in S-Cube. Publications will be planned depending on the results.	This WP only	Still in progress
SZTAKI TUW	This collaboration focuses on SLA based virtualized service provisioning with the aim of combining three different areas: negotiation, (meta)brokering and on-demand dynamic service deployment, so services with guaranteed performance can be deployed and invoked on the fly.	CD-JRA-2.3.8 CD-JRA-1.2.7	Accepted for publication at PDP'12
SZTAKI UPC	Collaboration on service monitoring for federated clouds	WP-JRA-1.2	Accepted for publication at PDP'12

2 Conclusions

To conclude, this short deliverable reported planned publications at the end of the project. The deliverable reveals the long-term planning associated with co-authored publications in the network, which is expected to yield a higher number of co-authored outputs in the last 4 months of the project.