

Appendix B

This section lists all mobility visits and corresponding results needed for evaluation in the following sections. Only visits with the start date lying within the first 18 months of the project are analyzed. The stays are sorted based on the start date of the stay. Reiterations (i.e., consecutive visits to the same partner to work on same research topic) have not been counted as separate visits, but listed and later analyzed as one visit (no. 4 and 5).

No.	Researcher	Location	Destination	Start date	End date	Duration
1	Georgios Koutras	UOC	Tilburg	06.04.2008	19.04.2008	14
2	Branimir Wetzstein	USTUTT	TUW	07.05.2008	21.05.2008	15
3	Michele Mancioppi	Tilburg	UPM	09.05.2008	20.05.2008	12
4	Vasilios Andrikopoulos	Tilburg	UCBL	11.05.2008	18.05.2008	8
				11.06.2008	25.06.2008	11
5	Olha Danylevych	USTUTT	UOC	14.05.2008	28.05.2008	15
				20.09.2008	26.09.2008	7
6	F. M. Nardini & Gabriele Tolomei	CNR	TUW	09.06.2008	27.06.2008	19
7	Pierluigi Plebani	POLIMI	UOC	06.09.2008	20.09.2008	15
8	Ralph Mietzner ²	USTUTT	UniDue	29.09.2008	02.10.2008	4
9	Michele Mancioppi	Tilburg	UPM	06.10.2008	16.10.2008	11
10	Andreas Gehlert ³	UniDue	CITY	15.10.2008	17.10.2008	3
11	Andreas Gehlert & J. Hielscher ⁴	UniDue	USTUTT	13.11.2008	14.11.2008	2
12	Luca Cavallaro	POLIMI	USTUTT	07.12.2008	16.12.2008	10
13	Martin Treiber	TUW	Tilburg	16.01.2009	30.01.2009	15
14	Olha Danylevych	USTUTT	Tilburg	07.02.2009	13.02.2009	7
15	Andreas Gehlert	UniDue	USTUTT	02.03.2009	06.03.2009	5
16	Raman Kazhamiakin	FBK	USTUTT	26.05.2009	30.05.2009	5
17	Konstantinos Zachos	CITY	UOC	03.06.2009	16.06.2009	14
18	Andreas Gehlert	UniDue	FBK	07.06.2009	10.06.2009	4
19	Stephen Lane	Lero-UL	CITY	15.06.2009	28.06.2009	14
20	Vanessa Le Roy	INRIA	CITY	15.06.2009	04.09.2009	14
21	François Hantry ⁵	UCBL	INRIA	06.07.2009	07.07.2009	2
22	Cinzia Cappiello	POLIMI	CITY	20.07.2009	31.07.2009	12

Table 9: List of Mobility Stays

² The research stay of Ralph Mietzner at UniDue was less than one week as it served the purpose of discussing a very specific issue, namely the combination of previous research of UniDue on variability in software with previous research of USTUTT on variability in software as a service applications. The research stay served as an initial kickoff for further distributed collaboration on that specific issue resulting in a paper at PESOS [1].

[1] Mietzner, Ralph; Metzger, Andreas; Leymann, Frank; Pohl, Klaus: Variability Modeling to Support Customization and Deployment of Multi-Tenant-Aware Software as a Service Applications. In: Proceedings of ICSE 2009 Workshop - Principles of Engineering Service Oriented Systems (PESOS).

³ The visit to CITY became necessary in order to discuss first ideas of a prospective collaboration between UniDue and CITY (namely wrt. context). In addition, the goal of this first meeting was to agree upon, set up and start writing the joint deliverable PO-JRA-1.1.3.

⁴ The research visit at Stuttgart was intended to integrate the ideas of three existing papers. This clear focus allowed us to efficiently work on a structure and on the main contents of the envisioned paper, which was later on finalized offline.

⁵ The research stay lasts two days because it was mainly concerned with the presentation of an overview of concepts of model driven engineering and verification tools and discussion on related tools. Two days were sufficient to perform the analysis of existing approaches since the material was already prepared.

In the following, we will summarize the results of each stay and their relation to the S-Cube research subjects, workpackages, and integration framework elements. For data collection, a table template was provided to all mobility program participants (visitors) who then described the results of their stay and their relation to S-Cube. This data is the basis for our assessment in the deliverable.

1 Service Systems and Business Process Management

Visiting Researchers	University of Crete: Georgios Koutras	
Hosting Researchers	University of Tilburg: Mike Papazoglou, Willem Jan van den Heuvel, Michele Manciacchi	
Start - end date	06.04.2008 – 19.04.2008 (14 days)	
Topic	Service Systems and Business Process Management: A framework to assess and improve the performance of a service network (SN) built on a network of activities structured as business processes. Possibilities and opportunities of relating SNs with SOA applications and infrastructures.	
Main Results	<ul style="list-style-type: none"> – How communication between the two layers (BPM and SC) is performed; – Establish the way information is transferred from one level to the other; – Determine the steps that have to be followed to exploit the mapping of the SN and BPM levels to control and improve the business objects. 	
Resulting Publications	<p>Bitsaki, M., Danylevych, O., Van den Heuvel, W.J., Koutras, G., Leymann, F., Manciacchi, M., Nikolaou, C., Papazoglou, M.: An Architecture for Managing the Lifecycle of Business Goals for Partners in a Service Network. In: <i>ServiceWave2008</i>. (2008).</p> <p>Bitsaki, M., Danylevych, O., Van den Heuvel, W.J., Koutras, G., Leymann, F., Manciacchi, M., Nikolaou, C., Papazoglou, M.: Model Transformations to Leverage Service Networks. In: <i>Fourth International Workshop on Engineering Service-Oriented Applications: Analysis and Design (WESOA 2008), Proceedings. Lecture Notes in Computer Science, Springer-Verlag (2008)</i>.</p>	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Service Networks	
Related to S-Cube WPs/Deliverables	WP-JRA-2.1, CD-JRA-2.1.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business process management
	Reference Lifecycle	Design, Construction
	Runtime Architecture	None
	Design Environment	Service Network Modelling, transformation of service network models to abstract business processes.
Future Work	<p>The future work in this area includes refining and implementing the initial results and extending the approach.</p> <ul style="list-style-type: none"> – Refine existing modeling notation of service networks to achieve a higher automation of the transformation from SN models to abstract BPMN process models. – Integration of an approach to monitoring of processes across organizational boundaries with the SN analysis – Applying social network analysis techniques to SNs in specific 	

		domains which can be used to detect SN behaviors needing improvement and provide feedback for bottom-up refinement of the SN models. – Intention to develop new quantitative analysis methods for Service Networks based on the game theory involving domain specific KPI-models as well as simulation techniques.
Reiteration future exchanges)	(planned mobility	UoC plans to send a PhD student (Mariana Karmazi) to University of Tilburg early in January 2010 in order to investigate and to carry out research on the area of business transactions.

2 Influential Factors of Business Process Performance

Visiting Researchers	USTUTT: Branimir Wetzstein	
Hosting Researchers	TUW: Philipp Leitner, Florian Rosenberg, Ivona Brandic, Schahram Dustdar	
Start - end date	07.05.2008-21.05.2008 (15 days)	
Topic	Monitoring and Analysis of Influential Factors of Business Process Performance	
Main Results	<ul style="list-style-type: none"> – Approach to Monitoring of KPIs, PPMs, and QoS of SBA-based business processes and Analysis of Influential Factors of KPI performance based on data mining techniques – Implementation of a prototype and experimental evaluation based on a purchase order scenario 	
Resulting Publications	Wetzstein, B.; Leitner, P.; Rosenberg, F.; Brandic, I.; Dustdar, S.; Leymann F.: Monitoring and Analyzing Influential Factors of Business Process Performance. In Proceedings of the 13th IEEE International Enterprise Distributed Object Computing Conference (EDOC'09), Auckland, New Zealand, 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Monitoring; Quality of service; Service Composition; Service-oriented Computing;	
Related to S-Cube WPs/Deliverables	JRA-2.2, JRA-1.2 CD-JRA-2.2.2, CD-JRA-1.2.3	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	all (BPM, SC, SI) and all cross-cutting concerns
	Reference Lifecycle	Design; Construction; Deployment; Operation & Management; Identify adaptation need
	Runtime Architecture	Monitoring Engine: Service Container
	Design Environment	KPI Modeller, PPM Modeller, QoS Modeller, Monitoring transformations and code generation, Monitoring Deployment
Future Work	<ul style="list-style-type: none"> – Extension of the approach towards prediction of violations 	
Reiteration (planned future mobility exchanges)	Planned	

3 Business Protocol Soundness

Visiting Researchers	Tilburg: Michele Mancioffi	
Hosting Researchers	UPM: Manuel Carro	
Start - end date	09.05.2008-20.05.2008 (12 days)	
Topic	Business Protocol Soundness	
Main Results	<ul style="list-style-type: none"> - Definition of a timed-automata based notation for business protocols - Definition of the notion of soundness for business protocols 	
Resulting Publications	Michele Mancioffi, Manuel Carro, Willem-Jan van den Heuvel, Mike P. Papazoglou: Sound Multi-party Business Protocols for Service Networks. ICSOC 2008:302-316	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Protocols	
Related to S-Cube WPs/Deliverables	JRA-2.1, JRA-2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business Process Management, Service Composition and Coordination
	Reference Lifecycle	Design
	Runtime Architecture	None
	Design Environment	BPM verification
Future Work	<ul style="list-style-type: none"> - Replaceability and conformance analysis for business protocols 	
Reiteration (planned future mobility exchanges)	Future work planned for fall 2009	

4 Controlled Evolution of Services

Visiting Researchers	Tilburg: Vasilios Andrikopoulos	
Hosting Researchers	UCBL: Salima Benbernou, Mohand-Said Hacid	
Start - end date	11.5.2008 – 18.5.2008 & 11.6.2008 – 25.6.2008 (21 days)	
Topic	Controlled Evolution of Services	
Main Results	Approach that allows for the controlled evolution of a service by leveraging the loosely-coupled nature of the SOA paradigm. Formalization of the notion of contracts between interacting services that enable their independent evolution. Investigation under which criteria can changes to a contract-bound service, or even to the contract itself, be transparent to the environment of the service.	
Resulting Publications	Andrikopoulos, V., Benbernou, S., Papazoglou, M.P.: Evolving services from a contractual perspective. In: Proceedings of the 21st international conference on Advanced Information Systems Engineering, Amsterdam, the Netherlands, Springer-Verlag (2009).	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Evolution, Service Design & Modelling Methodologies	
Related to S-Cube WPs/Deliverables	JRA-1.1, JRA-1.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering and design (cross-cutting concern)
	Reference Lifecycle	Design; operation and management; interface with adaptation cycle.
	Runtime Architecture	Service Container
	Design Environment	Service Modellers, SC & C Modellers, BPM Modellers
Future Work	– Integrating with the previously published work (V. Andrikopoulos, S. Benbernou, M. P. Papazoglou "Managing the Evolution of Service Specifications", In Procs. Advanced Information Systems Engineering Conf.: CAISE 2008, Springer-Verlag, Lecture Notes in Computer Science, Montpellier, France, June 2008.)	
Reiteration (planned future mobility exchanges)	No plans at the moment.	

5 Service Networks on top of the BPM Layering Stack

Visiting Researchers	USTUTT: Olha Danylevych	
Hosting Researchers	UOC: Christos Nikolaou, Marina Bitsaki	
Start - end date	14.05.2008-28.05.2008, 20.09.2008-26.09.2008	
Topic	Service Networks on top of the BPM layering stack	
Main Results	<ul style="list-style-type: none"> – Definition of a meta-model for the service network notation – Description of an enhanced BPM Lifecycle which is based on the Service Network Layer as additional layer in the BPM modeling Stack – Mapping/transformation of Service Networks to Business Processes. Two principle approaches were considered: Top-Down and Bottom-Up approach. The top-down approach focuses on stepwise refinement of Service Value Networks into choreographies and orchestrations, as well as KPIs into observable state changes. The bottom-up approach focuses on stepwise abstraction of runtime artifacts like orchestration into SVNs, and audit data into KPIs. 	
Resulting Publications	<p>Bitsaki, Marina; Danylevych, Olha; van den Heuvel, Willem-Jan; Koutras, George; Leymann, Frank; Mancioffi, Michele; Nikolaou, Christos; Papazoglou, Mike: An Architecture for Managing the Lifecycle of Business Goals for Partners in a Service Network. In: Petri, Mähönen (Hrsg); Klaus, Pohl (Hrsg); Thierry, Priol (Hrsg): Towards a Service-Based Internet, First European Conference, ServiceWave 2008.</p> <p>Bitsaki, Marina; Danylevych, Olha; van den Heuvel, Willem-Jan; Koutras, George D.; Leymann, Frank; Mancioffi, Michele; Nikolaou, Christos N.; Papazoglou, Mike P.: Model Transformations to Leverage Service Networks. In: ICSOC workshop proceedings, WESOA 2008, 2009</p> <p>Wetzstein, Branimir; Danylevych, Olha; Leymann, Frank; Bitsaki, Marina; Nikolaou, Christos; van den Heuvel, Willem-Jan; Papazoglou, Mike: Towards Monitoring of Key Performance Indicators Across Partners in Service Networks. In: ServiceWave, MONA+, 2009.</p>	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes, Service Compositions, Model-Driven Engineering, Service Design & Modelling Methodologies	
Related to S-Cube WPs/Deliverables	WP-JRA-2.1 (deliverable CD-JRA-2.1.2), WP-JRA-2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business process management; Service composition
	Reference Lifecycle	Requirements Engineering and Design; Construction;
	Runtime Architecture	None
	Design Environment	ASN/KPI/Choreography Modeller; ASN-Choreography transformation

Future Work	– Extension of the approach towards refinement of service network notation and consequential changes in the mappings to the business process layer.
Reiteration (planned future mobility exchanges)	Research Visit to UOC at 20.09.2008-26.09.2008. Further mobility exchanges are not planned; work continues in a “distributed” fashion

6 Internet of Services

Visiting Researchers	CNR: Franco Maria Nardini and Gabriele Tolomei	
Hosting Researchers	TUW: Philipp Leitner and Schahram Dustdar	
Start - end date	09.06.2008-27.06.2008 (19 days)	
Topic	Internet of Services (IoS): bring human inside the workflow of software services	
Main Results	– New vision: Internet and the Web as the next platform on which both traditional software-based and human-based services might be searched, composed, and executed (i.e., IoS processes)	
Resulting Publications	Ongoing	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Service Composition; Service Discovery	
Related to S-Cube WPs/Deliverables	JRA-2.3, JRA-2.2, JRA-2.1 PO-JRA-2.3.1, CD-JRA-2.3.2, CD-JRA-2.3.3	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	all (cross-layer) and all cross-cutting concerns
	Reference Lifecycle	Design; Deployment; Identify adaptation needs
	Runtime Architecture	Service Registry and Discovery
	Design Environment	Monitoring Deployment
Future Work	– Process Mining techniques for identifying IoS processes from historical data	
Reiteration (planned future mobility exchanges)	Not planned	

7 Semantic-based Negotiation

Visiting Researchers	POLIMI: Pierluigi PLEBANI	
Hosting Researchers	UOC: Dimitris Plexousakis, Kyriakos Kritikos	
Start - end date	06.09.2008-20.09.2008 (15 days)	
Topic	Semantic based negotiation	
Main Results	<ul style="list-style-type: none"> – A model for enriching negotiation models using a specific ontology – Definition of an initial set of rules for supporting bilateral negotiation 	
Resulting Publications	M. Comuzzi, K. Kritikos, P. Plebani, "A semantic based framework for supporting negotiation in Service Oriented Architectures", in Proceedings of 11th IEEE Conference on Commerce and Enterprise Computing (CEC'09), Vienna, Austria, July 20-23, 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Negotiation and QoS Agreement, Service Discovery	
Related to S-Cube WPs/Deliverables	WP-JRA-1.3	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Quality Definition, Negotiation, and Assurance
	Reference Lifecycle	Deployment and provisioning; Enact adaptation
	Runtime Architecture	Negotiation Engine
	Design Environment	SLA Modeller
Future Work	<ul style="list-style-type: none"> – Extension of the approach considering additional negotiation mechanisms – Extension considering negotiation by delegation in case of interesting services are not able to negotiate 	
Reiteration (planned future mobility exchanges)	Not planned	

8 Configuration and Deployment of SaaS Applications

Visiting Researchers	USTUTT: Ralph Mietzner	
Hosting Researchers	UniDue: Andreas Metzger	
Start - end date	29.9.2008 - 2.10.2008 (4 days)	
Topic	Configuration and deployment of SaaS applications using techniques from software product lines	
Main Results	<ul style="list-style-type: none"> – Modeling techniques from software product line engineering applied to Software as a Service Applications – Extended variability definition techniques for the provisioning and management of SaaS applications 	
Resulting Publications	Mietzner, Ralph; Metzger, Andreas; Leymann, Frank; Pohl, Klaus: Variability Modeling to Support Customization and Deployment of Multi-Tenant-Aware Software as a Service Applications. In: Proceedings of ICSE 2009 Workshop - Principles of Engineering Service Oriented Systems (PESOS).	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Requirements Engineering; Service Design & modeling Methodologies; Model-driven engineering; Software-Engineering Lifecycle	
Related to S-Cube WPs/Deliverables	JRA-1.1	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Service Composition; Engineering and Design
	Reference Lifecycle	Requirements engineering and design; Construction; Deployment & provisioning
	Runtime Architecture	None
	Design Environment	SC&C Deployment
Future Work	<ul style="list-style-type: none"> – Extension of the approach towards optimizations of variability in SaaS applications with regard to cost for providers 	
Reiteration (planned future mobility exchanges)	Not planned; work continues in a “distributed” fashion	

9 Replaceability and Conformance Analysis for Business Protocols

Visiting Researchers	Tilburg: Michele Mancioffi	
Hosting Researchers	UPM: Manuel Carro	
Start - end date	06.10.2008-16.10.2008 (10 days)	
Topic	Replaceability and conformance analysis for business protocols	
Main Results	– Definition of replaceability and conformance analyses for business protocols	
Resulting Publications	<ul style="list-style-type: none"> – Michele Mancioffi, Manuel Carro, Irena Trajkovska, Willem-Jan van den Heuvel, Mike P. Papazoglou: Compatibility and Replaceability Analysis for Multi-party Business Protocols. Submitted to CAiSE 2008 – Michele Mancioffi, Manuel Carro, Willem-Jan van den Heuvel, Mike P. Papazoglou: Replaceability and Conformance in Business Protocols: a Notation-Independent Approach. Submitted to ICSOC 2008 	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Protocols	
Related to S-Cube WPs/Deliverables	JRA-2.1, JRA-2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business Process Management, Service Composition and Coordination
	Reference Lifecycle	Design
	Runtime Architecture	None
	Design Environment	BPM verification
Future Work	None planned	
Reiteration (planned future mobility exchanges)	No reiteration planned	

10 Exploiting codified HCI and Context Knowledge for Engineering of SBAs

Visiting Researchers	UniDue: Andreas Gehlert	
Hosting Researchers	CITY: Neil Maiden	
Start - end date	15.10.2008-17.10.2008 (3 days)	
Topic	Exploiting codified human interaction (HCI) and context knowledge for engineering, monitoring and adapting service-based applications	
Main Results	<ul style="list-style-type: none"> – Identified the HCI and context factors which will be used in S-Cube – Developed conceptual models to enhance the understanding 	
Resulting Publications	The results are part of the deliverable CD-JRA-1.1.3.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service-based applications engineering, monitoring, adaptation, context-awareness.	
Related to S-Cube WPs/Deliverables	WP-JRA-1.1 and JRA-1.1.3	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering and design
	Reference Lifecycle	Requirements Engineering, Operation & Management, Identification of Adaptation Needs.
	Runtime Architecture	None
	Design Environment	None
Future Work	Extending the ArtScene Method to respect context when eliciting requirements. Publication in preparation for Refsq.	
Reiteration (planned future mobility exchanges)	Neil Maiden and Konstantinos Zachos visit to UniDue (paid by UniDue – not charged to the mobility program)	

11 Integrating Requirements Engineering, Online Testing and Adaptation of Workflows

Visiting Researchers	UniDue: Andreas Gehlert and Julia Hielscher	
Hosting Researchers	USTUTT: Olha Danylevych and Dimka Karastoyanova	
Start - end date	13.11.2008-14.11.2008 (2 days)	
Topic	Integrating requirements engineering, online testing and adaptation of workflows	
Main Results	The Integration of three research disciplines: requirements engineering, online testing and adaptation of workflows. We found that the three techniques can be loosely coupled by having a central enterprise service repository. On the one hand, this loose coupling allows the requirements engineer and the tester to work independently from each other and on the other hand, to directly use the results of requirements engineering and testing for the running workflows	
Resulting Publications	Andreas Gehlert, Julia Hielscher, Olha Danylevych and Dimka Karastoyanova. Online Testing, Requirements Engineering and Service Faults as Drivers for Adapting Service Compositions. In Dimka Karastoyanova, Raman Kazhamiakin, Andreas Metzger and Marco Pistore editors, Proceedings of the International Workshop on Service Monitoring, Adaptation and Beyond (MONA+ 2008), December 13, 2008, Madrid, Spain, Pages 39-50, 2008	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service-based applications engineering, testing, adaptation, service composition	
Related to S-Cube WPs/Deliverables	WP-JRA-1.1, WP-JRA-2.2, WP-JRA-1.3 and CD-JRA-2.2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering, Quality Assurance, Service Composition, Adaptation and Monitoring
	Reference Lifecycle	Requirements Engineering, Operation & Management, Identification of Adaptation Needs, Adaptation
	Runtime Architecture	Service Container, Adaptation Engine and Runtime QA Engine
	Design Environment	None
Future Work	A longer version of the above-mentioned paper will be submitted as book chapter of the Service Engineering Book edited by Schahram Dustdar.	
Reiteration (planned future mobility exchanges)	The relation between requirements engineering and workflow design was investigated in another mobility exchange (see below).	

12 Comparison between SCENE and BPEL'n'Aspects

Visiting Researchers	POLIMI: Luca Cavallaro	
Hosting Researchers	USTUTT:Dimka Karastoyanova	
Start - end date	07.12.2008-16.12.2008 (10 days)	
Topic	Comparison between <i>SCENE</i> and BPEL'n'Aspects, two frameworks for adaptation of service oriented systems	
Main Results	<ul style="list-style-type: none"> – Comparison between the two approaches – Highlighting of pros and cons of each – Discovery of the complementarity of approaches 	
Resulting Publications	Luca Cavallaro, Elisabetta Di Nitto, Dimka Karastoyanova: Comparing two Approaches for Service Compositions Adaptation: Issues and Findings. Submitted to SEAMS 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service Composition; Service-oriented Computing; Run-time adaptation	
Related to S-Cube WPs/Deliverables	JRA-2.2, JRA-2.1, JRA-1.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Service composition and coordination
	Reference Lifecycle	Operation & Management; Enact Adaptation
	Runtime Architecture	Adaptation Engine
	Design Environment	None
Future Work	<ul style="list-style-type: none"> – Integration of the approaches 	
Reiteration (planned future mobility exchanges)	Not planned; work continues in a “distributed” fashion	

13 Calculating Service Fitness in Service Networks

Visiting Researchers	TUW: Martin Treiber	
Hosting Researchers	TILBURG: Vasilios Andrikopoulos, Mike Papazoglou	
Start - end date	16.01.2009-30.01.2009 (15 days)	
Topic	Calculating Service Fitness in Service Networks	
Main Results	<ul style="list-style-type: none"> - Model to calculate the fitness of services from the perspective of a service provider in a service network - Experimental evaluation of the model based on real world data from ikangai solution 	
Resulting Publications	Martin Treiber, Vasilios Andrikopoulos and Schahram Dustdar: Calculating Service Fitness in Service Networks. 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+), in conjunction with the ICSOC/ServiceWave Conference, Stockholm, Sweden, November 23, 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Monitoring; Service Fitness; Service-oriented Computing; Service Networks	
Related to S-Cube WPs/Deliverables	JRA-2.1, JRA-2.2, JRA-1.3 CD-JRA-2.1.2, CD-JRA-1.3.4, CD-JRA-2.2.5	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Monitoring
	Reference Lifecycle	Operation & Management; Identify adaptation needs
	Runtime Architecture	None
	Design Environment	None
Future Work	<ul style="list-style-type: none"> - Extension of the approach towards prediction of service fitness with system dynamics methods - Extension of service fitness model to mashups 	
Reiteration (planned future mobility exchanges)	Not planned; work continues in a “distributed” fashion	

14 Service Networks and Service Compositions

Visiting Researchers	USTUTT: Olha Danylevych	
Hosting Researchers	Tilburg – Mike Papazoglou, Willem-Jan van Heuvel	
Start - end date	07.02.2009-13.02.2009	
Topic	Service Networks and Service Compositions	
Main Results	<ul style="list-style-type: none"> - Discussion of open research problems in the area of Service Networks. - Refinement of the Service Network Notation and transformations between the service networks and process models/choreographies - Draft of the paper which focuses on the change management of an artifact (Business Protocol or Choreography) and the non-functional property related to it (e.g. KPI) 	
Resulting Publications	Not published yet	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service Networks, Business Processes, Service Compositions, Choreographies, Orchestrations	
Related to S-Cube WPs/Deliverables	WP-JRA-2.1, WP-JRA-2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business process management; Service composition
	Reference Lifecycle	Requirements Engineering and Design; Construction;
	Runtime Architecture	None
	Design Environment	ASN/KPI/Choreography Modeler; ASN-Choreography transformation
Future Work	- Publication of results	
Reiteration (planned future mobility exchanges)	work continues in a “distributed” fashion	

15 The Interface between Requirements Reengineering and Workflows

Visiting Researchers	UniDue: Andreas Gehlert	
Hosting Researchers	USTUTT: Olha Danylevych and Dimka Karastoyanova	
Start - end date	02.03.2009-06.03.2009 (5 days)	
Topic	The interface between requirements engineering and workflows	
Main Results	Although the techniques used in requirements engineering (especially scenarios) and in workflow design seem to be quite similar the transition from requirements to executable workflow is still a challenging task, which is not yet well supported. The result of the exchange was a detailed literature review, which takes into account the requirements engineering literature and the literature on workflow design.	
Resulting Publications	Andreas Gehlert, Olha Danylevych and Dimka Karastoyanova. From Requirements to Executable Processes - A Literature Study. In Proceedings of the 5th International Workshop on Business Process Design (BPD 2009), Ulm, Germany, 7 September 2009	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service-based applications engineering, requirements engineering and process modelling	
Related to S-Cube WPs/Deliverables	WP-JRA-1.1 and WP-JRA-2.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering and design, BPM and SC&C
	Reference Lifecycle	Design; Construction
	Runtime Architecture	None
	Design Environment	None
Future Work	Not yet planned.	
Reiteration (planned future mobility exchanges)	Not yet planned.	

16 Adaptation of SBAs based on Process Quality Factor Analysis

Visiting Researchers	FBK: Raman Kazhamiakin, Marco Pistore	
Hosting Researchers	USTUTT: Branimir Wetzstein, Dimka Karastoyanova	
Start - end date	26.05.2009-30.05.2009 (5 days)	
Topic	Adaptation of SBAs based on process quality factor analysis	
Main Results	– Approach to automated adaptation of SBAs based on monitoring and analysis results of quality factors across layers	
Resulting Publications	Kazhamiakin, R.; Wetzstein, B.; Karastoyanova, D.; Pistore, M.; Leymann, F.: Adaptation of Service-Based Applications Based on Process Quality Factor Analysis. 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+), in conjunction with the ICSSOC/ServiceWave Conference, Stockholm, Sweden, November 23, 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Adaptation; Business Processes; Monitoring; Quality of service; Service Composition; Service-oriented Computing;	
Related to S-Cube WPs/Deliverables	JRA-1.2, JRA-2.2, CD-JRA-1.2.4	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	all (cross-layer) and all cross-cutting concerns
	Reference Lifecycle	Design; Identify adaptation needs; Identify adaptation strategy
	Runtime Architecture	Adaptation Engine
	Design Environment	A&M Modeller, KPI Modeller, PPM Modeller, QoS Modeller
Future Work	<ul style="list-style-type: none"> – Implementation and evaluation of the approach – Various extensions 	
Reiteration (planned future mobility exchanges)	Planned	

17 Enhancing Service Network Analysis using Requirements-based Service Discovery

Visiting Researchers	City University: Konstantinos Zachos	
Hosting Researchers	University of Crete: Christos Nikolaou, Pantelis Petridis, George Stratakis, Manolis Voskakis, Eyaggelos Papathanasiou	
Start - end date	03.06.2009-16.06.2009 (14 days)	
Topic	Enhancing Service Network Analysis and Service Selection using Requirements-based Service Discovery	
Main Results	A process model was developed that incorporated methods and ideas from both research areas to (1) discover candidate services based on quality of service characteristics and use them to dynamically create new SNs within a service ecosystem, and (2) exploit newly created SNs to improve the service discovery and selection process.	
Resulting Publications	Konstantinos Zachos, Christos Nikolaou, Pantelis Petridis, George Stratakis, Manolis Voskakis and Eyaggelos Papathanasiou. Enhancing Service Network Analysis and Service Selection using Requirements-based Service Discovery. <i>In 1st International Conferences on Advanced Service Computing, Service Computation 2009</i> , Athens, Greece. November 2009.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Monitoring; Quality of service; Service Composition; Service-oriented Computing;	
Related to S-Cube WPs/Deliverables	JRA-1.2, JRA-1.3	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	all (cross-layer) and all cross-cutting concerns
	Reference Lifecycle	Requirements Engineering & Design; Construction; Deployment; Operation & Management; Identify adaptation needs
	Runtime Architecture	Monitoring Engine, Discovery & Registry Infrastructure
	Design Environment	KPI Modeller, QoS Modeller, Monitoring transformations and code generation, Monitoring Deployment
Future Work	<ul style="list-style-type: none"> – evaluate the utility of the process model – complete the implementation of the first version of the KPI-driven service discovery engine – extending the process to consider user models to ensure that different classes of users will be able to select candidate services and service providers that facilitate their personal characteristics or preferences 	
Reiteration (planned future mobility exchanges)	Not planned; work continues in a “distributed” fashion	

18 The Role of Assumptions in the Engineering and Adaptation Processes of SBAs

Visiting Researchers	UniDue: Andreas Gehlert	
Hosting Researchers	FBK: Raman Kazhamiakin and Marco Pistore	
Start - end date	07.06.2009-10.06.2009 (4 days)	
Topic	The role of assumptions in the engineering and adaptation processes of service-based applications	
Main Results	Designed an engineering technique that builds on a separation of assumptions and requirements during the requirements engineering phase of the project. These assumptions are later monitored and once an assumption becomes invalid an adaptation may be triggered. By having the assumptions explicitly defined, one can trace the source of the problem in the SBA once an adaptation becomes necessary	
Resulting Publications	Gehlert, A.; Bucchiarone, A.; Kazhamiakin, K.; Pistore, M; Metzger, A.; Pohl, K.: Exploiting Assumption-Based Verification for the Adaptation of Service-Based Applications. In 25th Annual ACM Symposium on Applied Computing (SAC 2010); Sierre, Switzerland, 21-26 March, 2010.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Service-based applications engineering, requirements engineering and verification	
Related to S-Cube WPs/Deliverables	WP- JRA-1.2 and WP- JRA-1.1, planned contribution to CD-JRA-1.2.4	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering and Design, Adaptation and Monitoring, Quality Assurance
	Reference Lifecycle	Requirements Engineering; Design; Identify adaptation needs; Operation & Management
	Runtime Architecture	Monitoring Engine, Adaptation Engine and Runtime QA Engine
	Design Environment	None
Future Work	Validation of the results. Submission of the validated results to a good conference/journal.	
Reiteration (planned future mobility exchanges)	No concrete plans yet.	

19 Primary Research on Software Process for SBA Development

Visiting Researchers	Lero: Stephen Lane	
Hosting Researchers	City: Angela Kounkou; Neil Maiden	
Start - end date	15.06.2009-28.06.2009 (14 days)	
Topic	Primary Research on Software Process for SBA Development	
Main Results	<ul style="list-style-type: none"> - Detailed interviews from CTO, developer and consultant working for large software company in London. - Initial picture created as to how the software industry views services. 	
Resulting Publications	Planning joint case study publication between City and Lero.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Monitoring; Quality of service; Service Composition; Service-oriented Computing;	
Related to S-Cube WPs/Deliverables	JRA-1.1, JRA-1.3 (constructive quality assurance)	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Engineering and Design
	Reference Lifecycle	All Phases
	Runtime Architecture	None
	Design Environment	None
Future Work	<ul style="list-style-type: none"> - Complete Second Case Study - Report on both case studies in research publication. 	
Reiteration (planned future mobility exchanges)	Angela from City may come to Lero for Irish case study in Irish company	

20 Replacement Policies for Dynamic Adaptation of SBAs

Visiting Researchers	Vanessa Le Roy: INRIA	
Hosting Researchers	CITY: Andrea Zisman, Ricardo Contreras, Khaled Mahbub	
Start - end date	15.06.2009-04.09.2009 (days)	
Topic	Replacement policies for Dynamic Adaptation of SBAs	
Main Results	<ul style="list-style-type: none"> - Approach to replace web services regarding to the cause triggered - Approach based on a BPEL engine - Implementation of a prototype and experimental replacement policies in SBAs 	
Resulting Publications	Not yet.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Adaptation; Business Processes; Service Composition; Service-oriented Computing; Service Discovery	
Related to S-Cube WPs/Deliverables	JRA-1.1, JRA-1.2	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Service Composition
	Reference Lifecycle	Design; Deployment; Identify adaptation needs
	Runtime Architecture	Service Container; Communication Backbone; Discovery and Registry Infrastructure
	Design Environment	None
Future Work	<ul style="list-style-type: none"> - Extension to all guidelines to dynamic adaptation 	
Reiteration (planned future mobility exchanges)	Not planned	

21 Paradigm of Model Management, Refinement, Consistency, Model Checker

Visiting Researchers	UCBL: Francois Hantry	
Hosting Researchers	INRIA: <u>Jean-Marc Jézéquel</u> , <u>Olivier Barais</u> , <u>Sagar Sen</u> , <u>Gregory Nain</u>	
Start - end date	06.07.2009-07.07.2009 (2 days)	
Topic	Paradigm of model management, refinement, consistency, model checker	
Main Results	Lack of “reverse model driven engineering” approach in cross layer analysis of business process in S-Cube	
Resulting Publications	Not yet	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	S-Cube-Cross layer consistency	
Related to S-Cube WPs/Deliverables	JRA-2.2, JRA-2.1, JRA-1.3, JRA-2.1.2 , JRA-2.1.3,JRA-2.1.4	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	Business process management; SCC
	Reference Lifecycle	Design; Construction; Deployment
	Runtime Architecture	None
	Design Environment	None
Future Work	Publication	
Reiteration (planned future mobility exchanges)	Not planned	

22 Designing Adaptive Service-based Applications using Service Granularity

Visiting Researchers	POLIMI: Cinzia Cappiello	
Hosting Researchers	CITY: Neil Maiden	
Start - end date	20.07.2009-31.07.2009 (12 days)	
Topic	Designing Adaptive Service-based Applications using Service Granularity	
Main Results	<ul style="list-style-type: none"> – Definition of a methodology to support the design of adaptive service-based application by considering users' and business requirements. – Integration of the results of two tools, developed by the two research units, which respectively support the process design and service discovery. The matching between the output of the two tools, that is the list of abstract services and the list of concrete services allow designers to evaluate the feasibility of the designed application and to support its evolution. 	
Resulting Publications	Cappiello, C.; Zachos, K.; Maiden, N.: Designing adaptive service-based applications using service granularity. Submitted at the second workshop on Monitoring, Adaption, and Beyond (MONA +) in conjunction with ICSOC/Service Wave '09 Conference.	
Related Scientific Subjects for Mobility (CD-IA-2.1.2)	Business Processes; Service Discovery, Service Granularity	
Related to S-Cube WPs/Deliverables	JRA-1.1	
Covered S-Cube Integration Framework Elements	Conceptual Research Framework	all (cross-layer) and all cross-cutting concerns
	Reference Lifecycle	Design; Identify adaptation strategy
	Runtime Architecture	Adaptation Engine
	Design Environment	SC&C Modellers
Future Work	<ul style="list-style-type: none"> – Implementation of an integrated tool and test on more complex case studies 	
Reiteration (planned future mobility exchanges)	Not planned.	