Title:	*Report on Dissemination of Network Results, Collaboration with ICTSSAI&E Projects and Thematic Workshops Targeting Industry*
Author:	*UniDue, Tilburg, City, CNR, FBK, INRIA, Lero-UL, Polimi, Sztaki, TUW, UCBL, UoC, UPM, USTUTT*
Editor:	*Mohand-Said Hacid, François Hantry, Salima Benbernou (UCBL)*
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Management Summary

This deliverable is a report on how the research results produced by the network have been disseminated and used. It reports on the specific activities performed individually, jointly and with other projects and ICT SSAIE projects. It also includes details of specialized workshops, held to target diverse scientific communities and to spread awareness of S-Cube and its scientific results to the widest possible audience.

Members of the S-CUBE consortium:

University of Duisburg-Essen	Germany
Tilburg University	Netherlands
City University London	U.K.
Consiglio Nazionale delle Ricerche	Italy
Center for Scientific and Technological Research	Italy
The French National Institute for Research in Computer Science and Control	France
Lero - The Irish Software Engineering Research Centre	Ireland
Politecnico di Milano	Italy
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Published S-CUBE documents

All public S-Cube deliverables are available from the S-Cube Web Portal at the following URL:
http://www.s-cube-network.eu/results/deliverables/

The S-Cube Deliverable Series

Vision and Objectives of S-Cube

The Software Services and Systems Network (S-Cube) will establish a unified, multidisciplinary, vibrant research community which will enable Europe to lead the software-services revolution, helping shape the software-service based Internet which is the backbone of our future interactive society.

By integrating diverse research communities, S-Cube intends to achieve world-wide scientific excellence in a field that is critical for European competitiveness. S-Cube will accomplish its aims by meeting the following objectives:

- Re-aligning, re-shaping and integrating research agendas of key European players from diverse research areas and by synthesizing and integrating diversified knowledge, thereby establishing a long-lasting foundation for steering research and for achieving innovation at the highest level.
- Inaugurating a Europe-wide common program of education and training for researchers and industry thereby creating a common culture that will have a profound impact on the future of the field.
- Establishing a pro-active mobility plan to enable cross-fertilisation and thereby fostering the integration of research communities and the establishment of a common software services research culture.
- Establishing trust relationships with industry via European Technology Platforms (specifically NESSI) to achieve a catalytic effect in shaping European research, strengthening industrial competitiveness and addressing main societal challenges.
- Defining a broader research vision and perspective that will shape the software-service based Internet of the future and will accelerate economic growth and improve the living conditions of European citizens.

S-Cube will produce an integrated research community of international reputation and acclaim that will help define the future shape of the field of software services which is of critical for European competitiveness. S-Cube will provide service engineering methodologies which facilitate the development, deployment and adjustment of sophisticated hybrid service-based systems that cannot be addressed with today's limited software engineering approaches. S-Cube will further introduce an advanced training program for researchers and practitioners. Finally, S-Cube intends to bring strategic added value to European industry by using industry best-practice models and by implementing research results into pilot business cases and prototype systems.

S-Cube materials are available from URL: http://www.s-cube-network.eu/

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1 Introduction

1.1 The Spread of Excellence (SoE) Workpackage

The subject of service-based systems is vast and enormously complex and spans an immense and diverse spectrum of concepts, literature and technologies that find their origins in different disciplines but which are woven together in an intricate manner. This constitutes a serious challenge for the development of new generation service technologies and engineering methods for service-based systems as it presents two main problems that require integration of research expertise and intense collaboration of researchers: the fragmentation of research and the identification and finding solutions to gaps in current approaches.

Within S-Cube, the Spread of Excellence workpackage (WP-SoE-1.2) seeks to contribute to the solution of these two problems through focusing on the spread of results, research outcomes and innovation in the area of service-based systems across the wider scientific community, special subsections of the industry and user communities. Specifically, the four main target groups of S-Cube for dissemination activities are: scientists, industry, policy makers and end-user communities.

As described in the S-Cube strategy for community outreach [8], this workpackage has been designed with a program of dissemination activities to spread excellence both inside and outside the NoE and present and disseminate the innovative work carried out by the project. Particular attention has been devoted to a description of necessary resources, including specialized expertise, and the target audience, or beneficiaries who will derive benefit from the community outreach task. To achieve this, joint ventures between researchers involved in S-Cube have been undertaken ensuring that outputs are generated that target each of these groups individually. This workpackage has concentrated on a shared S-Cube dissemination plan including, among other things, coordinated publications in scientific journals, special issues in scientific journals, publication of a series of books and scientific anthologies on Software Services and Systems, organization of and participation in topic-related workshops/seminars, knowledge orientation through the re-use of Knowledge Model and exhibitions and by presenting best-practice models for capturing and implementing research results.

Currently, this workpackage has the following active tasks:

- T-SoE-1.2.2: Electronic Dissemination: S-Cube Web Portal [Month 1-48]

- T-SoE-1.2.3: Dissemination of S-Cube Results [Month 7-48]

- T-SoE-1.2.4: Collaboration with ICT SSAIE Projects [Month 1-48]

This deliverable reports on the progress of all these tasks by describing the publications, presentations, meetings and other activities designed to promote the results of the network to the targeted audiences described above.

1.2 This Document

Scope

This document is the fourth in an annual series of deliverables that reports on the progress and status of the dissemination activities by the S-Cube Network of Excellence. The previous deliverables reported on Years 1, 2 and 3 of the network, and this deliverable continues by presenting the results of Year 4. The outcomes presented have been gathered from a number of sources: the quarterly management reports were used to collate information on publications, presentations made and workshops, conferences and meetings organized. The quarterly reports used were those from Q12–Q15[1] of the Network (i.e., covering the period 1 December 2010 to November 2011). A summary of

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[1] *The Q16 report could not be used in the production of this deliverable as the deadline for that report comes after this deliverable is due*

the results from the S-Cube mobility program, which could also be considered as part of the spread of excellence as it promotes the dissemination of S- Cube results through internal collaboration, have been reported here (Table 14). Also, tables 11, 12 and 13 summarize the dissemination results for the 4 years of the project.

Organization of this Document

The remainder of this deliverable is organized as follows: In Section 1.3 we provide a summary of S-Cube's Spread of Excellence activities in Year 4; Section 2 describes the conference and workshops. Section 2.3 describes the summer school (co-)organized by network members; Section 2.4 provides the s-cube approach for thematic workshops (addressing industry); Section 2.5 outlines the presentations made by network members in the last 12 months; Section 2.6 summarizes the collaborations of network members with external partners; Section 2.7 synthesizes the meetings (internal and others) organized for the dissemination of results. Section 3 summarizes the joint and single institution publications of the network; Section 4 gives some information regarding the integration of education. Section 5 summarizes, through tables 11, 12, 13 and 14, the results of dissemination activities for the whole duration of the project.

1.3   Overview of Results

This year's results build on the successful results of the second year of the project and include:

- One conference — ServiceWave 2011 — was arranged and held (see Section 2.1).

- Members of the network organized and held nine workshops, including thematic workshops to target industry and specialized communities and they were involved in the organization of 3 conferences (see Section 2.2).

- Industrial Dissemination through S-Cube Industry Workshop (See Section 2.3)

- 66 presentations were given worldwide (see Section 2.4).

- S-Cube partners established 36 collaborations with external academic institutions and more than 70 collaborations with industrials (see Section 2.5).

- The SSIAE Summer School brought together 81 participants to receive high-quality training (see Section 2.6).

- Thirteen internal meetings were arranged for researchers to collaborate on research (see Section 2.7) and five meetings were arranged with external entities.

- There were 17 joint- and 44 single-institution publications (see Section 3).

2 Conferences, Workshops, Summer Schools & Other Events

This section describes the conferences, workshops and other events organized by the S-Cube Network of Excellence in the fourth year of the network.

2.1 Conferences

2.1.1 ServiceWave 2011

ServiceWave 2011 took place in the city of Poznan, Poland, 26th-28th October 2011. It was hosted by the Department of Information Systems at the Poznan University of Economics and co-located with Future Internet Assembly[2] (FIA) 2011. The conference built upon the highly-successful, previous editions of ServiceWave in 2008 in Madrid, 2009 in Stockholm and 2010 in Ghent. The conference was an event co-ordinated to be part of the Future Internet week[3] and was co-located with FIA which took place between 25th –26th October 2011.

The ServiceWave conference series is the premier European forum for practitioners, researchers, and educators to exchange and discuss the most recent innovations, trends, experiences and concerns for the Future Converged Internet of Content (IoC), Services (IoS), Things (IoT) and related underlying network technologies. ServiceWave fosters cross-community excellence by bringing together industrial and academic experts from various disciplines.

The agenda was a pick and mix of activities including the scientific track with high quality paper presentations, keynote speeches, an extended demonstration evening, exhibition space and a new format for industrial panels. In addition, days were dedicated to workshops, including a thematic workshop for industry organized by S-Cube. As usual, there was also a comprehensive social program for each evening, to provide ServiceWave attendees with the opportunity to network.

At the conference, there were three keynote speakers:

- Reinhold Achatz (Corporate Vice President of Siemens AG, head of Corporate Research and Technologies, head of the Corporate Development Center): Keynote: *Is Software & Service Research still need in 'Horizon 2020'? – An Industry Perspective*

- Duygu Öktem (TT Group R&D Manager EU Joint Research) Keynote: *Staying in the game: Strategies of Telecom Operators*

- Rainer Zimmermann (Head of Unit for Software & Service Architectures and Infrastructures. Directorate General for Information Society and Media, European Commission) Keynote: *Software and Services in Horizon 2020*

The conference proceedings have been published by Springer in the 6994 volume of Lecture Notes in Computer Science [12][4]. The proceedings are also available online[5].

Co-located Workshops

As part of the conference, the following technical workshops were also organized:

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[2] *http://fi-ghent.fi-week.eu/*
[3] *http://www.fi-week.eu/*
[4] *http://www.springer.com/computer/communication+networks/book/978-3-642-24754-5*
[5] *http://www.springerlink.com/content/978-3-642-17693-7#section=828127&page=1*

- **EDBPM (4th International Workshop on "From Event-Driven Business Process Management to Ubiquitous Complex Event Processing"):** Event-Driven Business Process Management is an enhancement of BPM with concepts such as Software as a Service, Service oriented Architecture, Event-driven Architecture, and Complex Event Processing. In this context BPM means a software platform which provides companies the ability to model, manage, and optimize their business processes. This workshop focuses on the topics of connecting Software Services and Things with the management of business processes and Future and Emerging Technologies.

- **OCS (2nd Second Optimizing Cloud Services Workshop):** Clouds are on the way to replace traditional IT infrastructures for providing and consuming all sorts of software services in research and commercial environments. As scope and complexity of offerings and requirements increase, technology is needed allowing to (automatically) optimize such Cloud environments in multiple dimensions, e.g. in terms of the software deployment, infrastructure management, trust, security & risk, and quality guarantees. The workshop aims to bring together researchers and practitioners from academia and industry to exchange research results and experience.

- **NESSOS (1st Industry Seminar on Secure Service Engineering: From Best Practices to Scientific Excellence (and Vice Versa)):** The domain of engineering secure Software Services covers a collection of engineering activities that aim for the creation of software services – i.e. ICT services delivered through the deployment of software systems- that are both behaviorally correct (typically guided by software engineering principles) as well as secure. The specific engineering activities range from requirements engineering and analysis, over the creation of architectures, high-level and detailed design into implementation through the reuse and composition of existing artifacts, as well as through the programming of new entities, typically components and services. This workshop will foster a more structured interaction between industrial and scientific stakeholders in the field of secure engineering of software and services.

- **WAS4FI (1st International Workshop on Adaptive Services for the Future Internet):** The Future Internet has emerged as a new initiative to pave a novel infrastructure linked to objects and things of the real world to meet the changing global needs of business and society. Future Internet technologies are expected to allow software and data no longer to be stored and distributed on individual computers but to enable their remote access as Software as a Service (SaaS), even by performing the integration into larger networks of communicating software (e.g., a mashup or a plug-in to a Cloud platform). Future Internet software systems will have to support the interoperability between many diverse stakeholders by governing the convergence and lifecycle of Internet of Contents (IoC), Services (IoS), Things (IoT), and Networks (IoN). These applications should handle dynamic and continuous changes: for instance, in the provisioning of software services, the availability of internet-connected "smart" items, the diversity of user devices and so forth. The aim of the workshop is to draw together researchers and practitioners interested in addressing different aspects related to

adaptive Future Internet applications, emphasizing the importance of governing the convergence of contents, software services, things and networks.

2.2 Workshops

2.2.1 MONA+ 2011

The MONA+ series of workshops is sponsored by S-Cube and organized entirely by S-Cube partners. The series aims to bring together researchers and practitioners from different disciplines with various research backgrounds to discuss relevant and immediate research challenges and solutions in the area of the monitoring and adaptation of Web Services and Service-based Applications.

MONA+ 2011 is the fourth workshop in a series of successful workshops: MONA+ 2008 was co-located with ServiceWave 2008 attracted over 20 participants; MONA+ 2009 was co-located with ICSOC/ServiceWave 2009, attracted over 50 participants and received 25 paper submissions 7 of which were accepted and presented; MONA+ 2010 was co-located with the eighth IEEE European Conference on Web Services (ECOWS 2010[6]). In 2011, MONA+ was co-located with ServiceWave 2011. The organizers and the program committee for the 2011 edition of MONA+ are shown in Table 1.

Table 1 S-Cube participants involved in the MONA+ 2011 Workshop

Name	S-Cube Partners & Associate Members	Role in MONA+2011
Luciano Baresi	Politecnico di Milano	Organizing Committee
Dimka Karastoyanova	University of Stuttgart	
Annapaola Marconi	FBK-IRST	
Florian Rosenberg	IBM T. J. Watson Research Center	
Benjamin Satzger	Vienna University of Technology	
Peter Bartalos	University of Notre Dame	Program Committee
Domenico Bianculli	University of Lugano	
Antonio Bucchiarone	FBK-IRST	
Dimitris Dranidis	SEERC	
Sam Guinea	Politecnico di Milano	
Sascha Hunold	Heidelberg University	
Raman Kazhamiakin	SayService srl	
Emanuel Kitzelmann	ICSI	
Florian Kluge	Augsburg University	
Oliver Moser	Vienna University of Technology	
Liliana Pasquale	LERO	
Szabolcs Rozsnyai	IBM Research	
Jacek Serafinski	Telcordia	

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[6]http://www.cs.ucy.ac.cy/ecows10/index.php

2.2.2   **BSME 2011**

BSME 2011 --- the 2nd International Workshop on Business Systems Management --- was held in 29 September 2011 during the TOOLS Europe 2011 conference (Zurich, Switzerland).

With the move to software services and cloud-based deployments, the trend in BPM will be to move from a relatively static view to a much more dynamic perspective, where business process interactions are examined to understand much more accurately the operations. This brings requirements for more granular application monitoring and management techniques that can be applied to various entities in a business process, such as business data, events, operations and process fragments. Individual and aggregated QoS and KPIs can guarantee a continuous and cohesive information flow and correlation of end-to-end process properties.

The interface of software services and cloud computing provides a rich area for research and experience to combine to give a unique insight into how BPM can be achieved in practice. We encourage submissions of research papers on work in the area of BPM and especially welcome papers describing developments in cloud-enabled business process management and all related areas, such as deployment techniques, business models for cloud-based enterprises and experience reports from practitioners.

The 2011 edition of BSME workshop focused on next-generation BPM that serves as a means of delivering business solutions as software services. The workshop was jointly organized with the 4CaaSt project (http://4caast.morfeo-project.org/) to focus on how these services are delivered through the cloud, a popular strategic technology choice for businesses as it provides a flexible, ubiquitous and consistent platform that can be accessed from anywhere at any time.

S-Cube members were workshop chairs and members of the program committee, as shown in Table 2.

Table 2 S-Cube participants involved in BSME 2011

Name	S-Cube Partners & Associate Members	Role in BSME 2011
Francesco Lelli	European Institute of Service Sciences	Co-Chairs
Michael Parkin	European Institute of Service Sciences	
Mike Papazoglou	European Institute of Service Sciences	Program Committee
Willem-Jan van den Heuvel	European Institute of Service Sciences	
Manuel Carro	Universidad Politecnica de Madrid	
Salima Benbernou	Université Paris Descartes	
Steve Strauch	Universität Stuttgart	

2.2.3   **QASBA 2011**

QASBA 2011[7] --- the International Workshop on Quality Assurance for Service-based applications—was held on September 13, 2011 in Lugano, Switzerland, in conjunction with the European Conference on Web Services (ECOWS) 2011[8].

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[7] http://www.inf.usi.ch/phd/bianculli/qasba2011/
[8] http://ecows2011.inf.usi.ch/

Given the availability of mechanisms for run-time service discovery and binding, the service-oriented paradigm fosters a further level of dynamicity where service integration emerges at run time and evolves over time. Nevertheless run-time integration of services owned and controlled by different organizations affects the notion of correctness, dependability and quality of SBAs. This poses a challenge for the definition of new methodologies and techniques for the quality assurance process of this class of software. The quality assurance process has to span over the entire life cycle of a service-based application, from the design phase to the execution phase through intermediate phases such as deployment, to detect errors as early as possible.

The QASBA 2011 workshop was an opportunity for participants to discuss the current state of the art and to advance ideas for applying quality-assurance practice in the next generation of service-based applications.

The workshop was organized as an initiative of the following research projects:
- CHOReOS (Large Scale Choreographies for the Future Internet): http://www.choreos.eu/bin/view/Main/
- SMSC (Self Managing Situated Computing): http://www.erc-smscom.org/
- S-CUBE

The S-CUBE participants are shown table 3.

Table 3 S-Cube participants involved in the QASBA 2011 Workshop

Name	S-Cube Partners	Role in QASBA 2011
Sam Guinea	Politecnico di Milano	Organizers and PC Chairs
Andreas Metzger	University of Duisburg-Essen	
Luciano Baresi	Politecnico di Milano	Program Committee
Manuel Carro	Universitat Politècnica de Madrid	
Guglielmo De Angelis	ISTI-CNR	
Dimitris Dranidis	CITY College	
Schahram Dustdar	Vienna University of Technology	
Howard Foster	City University London	
Xavier Franch	Universitat Politècnica de Catalunya	
Mark Harman	University College London	
Raman Kazhamiakin	SayService srl	
Annapaola Marconi	Fondazione Bruno Kessler	
George Spanoudakis	City University London	
Paolo Tonella	Fondazione Bruno Kessler	
Andrea Zisman	City University London	

There was a joint keynote:

- Schahram Dustdar (Vienna University of Technology): *Socially enhanced Services Computing*

And the following 11 papers were presented in five sessions:

Session 1 - Service Protocols and Dependencies
Daniele Romano and Martin Pinzger. Using Vector Clocks to Monitor Dependencies among Services at Runtime
Francesco De Angelis, Daniele Fanì and Alberto Polzonetti. Protocol Compatibility Notations for Service Integration Testing
Session 2 - Non-functional properties and monitoring
Antinisca Di Marco, Claudio Pompilio, Antonia Bertolino, Antonello Calabrò, Francesca Lonetti and

Antonino Sabetta. Yet Another Meta-Model to specify Non-Functional Properties
Cuiting Chen, Andy Zaidman and Hans-Gerhard Gross. A Framework-based Runtime Monitoring Approach for Service-Oriented Software Systems
Session 3 - Cross-layer adaptation
Asli Zengin, Annapaola Marconi and Marco Pistore. CLAM: Cross-layer Adaptation Manager for Service-Based Applications
Konstantinos Bratanis, Dimitris Dranidis and Anthony J. H. Simons. SLAs for Cross-layer Adaptation and Monitoring of Service-Based Applications: A Case Study
Session 4 - Quality assurance for trustworthiness
Guglielmo De Angelis, Tom Kirkham and Sandra Winfield. Access Policy Compliance Testing in a User Centric Trust Service Infrastructure
Michele Bezzi, Samuel Paul Kaluvuri and Antonino Sabetta. Ensuring Trust in Service Consumption through Security Certification
Invited Presentations
Andrea Polini. Choreographies and Testing for Quality Assurance - The CHOReOS way for the Future Internet
Konstantinos Bratanis. Quality Prediction Approaches in S-Cube
Antonio Filieri. Quality Assurance in SMScom: QoS Verification and Model Tuning at Run Time

2.2.4 **VAST 2011**

VAST 2011[9] –the first international workshop on Variability-intensive Systems Testing, Validation & Verification-- was held on March 21, 2011 in Berlin, Germany. It was co-located with The IEEE International Conference on Software Testing, Verification and Validation (ICST) 2011[10].

Variability is key enabler for most systems throughout their development and evolution. Indeed, customer demands and continuously changing contexts (environment, legal and business settings, technology etc.) ask for more adaptability in software engineering. This major trend impacts the whole engineering process, with key-emerging technologies such as SPL (Software Product Line), Service-Oriented Architecture (SOA), Dynamically Adaptive Systems or AOM (Aspect-Oriented Modelling). All these paradigms aim at providing solutions to introduce and manage variability at different lifecycle stages.

While variability is at the core of the Software Product Line (SPL) paradigm, it can also be enabled thanks to specific properties of the architecture on which software relies upon; For example, Service-Oriented Architecture (SOA) exploits loose coupling between services to facilitate the design and deployment of applications. Dynamically Adaptive Systems use reflection and runtime transformation to adapt to their environment.

A matter of fact, many technologies enable variability. As a consequence, combinatorial explosion due to variability is a common problem spanning over all these paradigms. Testing and verifying variability intensive systems is an issue that has been studied specifically. To date, some specific techniques have been developed (such as combinatorial interaction testing or modular checking) to contend with such explosion during the verification & validation process. However the field is still in its infancy. Even if some results have shown first promising outcomes in theory, their practical applicability has still to be demonstrated. The integration/combination of V&V techniques may be investigated to address the aforementioned validation challenge. Questions concerning the scalability,

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[9] *http://www.s-cube-network.eu/VAST*
[10] *https://sites.google.com/site/icst2011/*

quality and usability of the results, integration during the development lifecycle still have to be answered. Furthermore, scattered across several communities, some general advances may be difficult to share and widespread.

The aim of this workshop was to provide a forum in which practitioners and researchers can share their ideas and results and to establish a common research agenda for testing, verification and validation of variability-intensive systems. The workshop was sponsored by S-CUBE and Andreas Metzger (University of Duisburg-Essen) was one of the organizers.

There was a keynote:

- o **Massimiliano Di Penta** (University of Sannio): "Service Testing: Achievements and Future Research Directions "

And the following 6 papers were presented in three sessions:

Product line testing

- Emelie Engstrom and Per Runeson: Decision Support for Test Management and Scope Selection in a Software Product Line Context

- Martin Fagereng Johansen, Oystein Haugen and Franck Fleurey: A survey of empirics of strategies for software product line testing

Formal approaches

- Thomas Thüm, Ina Schaefer, Martin Kuhlemann and Sven Apel: Proof Composition for Deductive Verification of Software Product Lines

- Elke Salecker, Robert Reicherdt and Sabine Glesner: Calculating Prioritized Interaction Test Sets with Constraints using Binary Decision Diagram

Model and SOA validation

- Alessandro Marchetto, Cu Duy Nguyen and Paolo Tonella: Automated Detection of Discontinuities in Models Inferred from Execution Traces

- Erik Wittern and Christian Zirpins: Validating Service Value Propositions Regarding Stakeholder Preferences

2.2.5   C4E 2011

C4E 2011[11] -- the International Workshop on Clouds for Enterprises (C4E) 2011 was held at the 13th IEEE Conference on Commerce and Enterprise Computing (CEC) 2011[12] in Luxembourg - Monday, 5 Sept. 2011.
Cloud computing is an emerging computing paradigm that aims to streamline the on-demand provisioning of software (SaaS), platform (PaaS), infrastructure (IaaS), and data (DaaS) as services. Deploying applications on a cloud can help achieve scalability, improve flexibility of computing infrastructure, and reduce total cost of ownership. However, a variety of challenges arise when deploying and operating applications and services in complex and dynamic cloud-based environments, which are frequent in enterprises and governments.

The goal of the workshop was to bring together academic, industrial, and government researchers (from different disciplines), developers, and IT managers interested in cloud computing technologies and/or their consumer-side/provider-side use in enterprises and governments.

The workshop was co-organized by

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[11] *http://nicta.com.au/people/tosicv/clouds4enterprises2011/*
[12] *http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6046209*

Karl Michael Göschka, (Vienna University of Technology) and Michael Parkin, (Tilburg University) were (among others) the workshop chairs of this workshop.

There was a keynote by:

- Willem-Jan van den Heuvel (Tilburg University): Blueprinting the Cloud

And the following 10 papers were presented in five sessions:

Session I: Cloud Computing Diversity
- "Cloud-Based Multimedia Conferencing: Business Model, Research Agenda, State of the Art" by Roch Glitho
- "Target Dimensions of Cloud Computing" by Stefan Wind, Jonas Repschläger, Klaus Turowski, Rüdiger Zarnekow
- "Utility-driven Allocation of Multiple Types of Resources to Virtual Machines in Clouds" by Dorian Minarolli, Bernd Freisleben

Session II: Cloud Computing in Enterprises and Governments
- "Efficient Contracting in Cloud Service Markets with Asymmetric Information - A Screening Approach" by Rico Knapper, Benjamin Blau, Tobias Conte, Anca Sailer, Andrzej Kochut, Ajay Mohindra
- "A Cloud-based Platform for Enterprise Mashup Ecosystems" by Michele Stecca, Massimo Maresca
- "SecCSIE: A Secure Cloud Storage Integrator for Enterprises" by Ronny Seiger, Stephan Groß, Alexander Schill
- "Architectural Considerations for Addressing Federal Information Security Objectives in Public Cloud Computing Environments" by Walt Melo

Session III: Migrating Enterprise/Government Applications to Clouds
- "Long-Range Evaluation of Risk in the Migration to Cloud Storage" by Loretta Mastroeni, Maurizio Naldi
- "Migrating a Telecom Application to a NoSQL Database" by Francisco Cruz, Pedro Gomes, Rui Oliveira, José Pereira

"Migrating Enterprise/Government Applications to Clouds: Experiences and Challenges" moderated by Roch Glitho

2.2.6   ES3R 2012

ES3R 2012[13] –the European Software Services and Systems Research - Results and Challenges---will be held in Zurich, Switzerland on June 5, 2012.

This workshop will outline and demonstrate results of fundamental research carried out within S-Cube, the European Network of Excellence on Software Services and Systems. S-Cube brings together 33 research organizations across Europe from disciplines extending beyond traditional realms of software engineering, including cloud computing, business process management and service-oriented computing.

The workshop will also serve as a springboard to discuss software engineering research challenges for future service-oriented systems. Future software technology and methods will need to cope with trends such as the convergence of the Internet of Things and services; novel life-cycle models where the boundary between design and runtime will increasingly blur; online quality prediction and proactive adaptation; as well as novel architectural styles for large-scale, long-living service-oriented systems.

The workshop will be organized by:

- Andreas Metzger (Paluno, U Duisburg-Essen, Germany)

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[13] http://www.s-cube-network.eu/icse

   ▪ Klaus Pohl (Paluno, U Duisburg-Essen, Germany)

   ▪ Mike Papazoglou (ERISS, U Tilburg, The Netherlands)

2.2.7 **PESOS 2011**

PESOS 2011[14] -- the Third International Workshop on Principles of Engineering Service-Oriented Systems—was held on May 23-24, 2011, in Hawaii, USA. It was co-located with the 33rd ACM/IEEE International Conference on Software Engineering (ICSE) **2011**[15]
Service-oriented systems provide a more flexible approach to software development, provisioning and maintenance because services offer reusable functionality that can be combined to support business processes (or similar) that are dynamic by nature. This enables the adaptation to changes in a system's environment as well as to the continuously evolving system requirements that are commonplace today. However, service orientation poses challenges to more traditional approaches to software development, stemming from the lack of homogeneity of its basic components and from the requirement of being able to accommodate changes and dynamic evolution right from the beginning. In this respect, the workshop focused on finding possibilities of synergy between Software Engineering (SE) technologies and Service-Oriented Computing (SOC) that are beneficial to both fields

     The S-CUBE participants are shown table 3.

Table 3 S-Cube participants involved in the PESOS 2011 Workshop

Name	S-Cube Partners	Role in PESOS 2011
Manuel Carro	UPM	Organizing committee members
Dimka Karastoynova	Universität Stuttgart	
Vasilios Andrikopoulos	Tilburg University	Program Committee
Schahram Dustdar	TU Vienna	
Sam Guinea	Politecnico di Milano	
Raman Kazhamiakin	Fondazione Bruno Kessler (FBK)	
Andreas Metzger	PALUNO	
Elisabetta di Nitto	Politecnico di Milano	

There were three keynotes, among them:

   • **Elisabetta Di Nitt**o (Politecnico di Milano, Italy*):* Can Global Software Engineering and Service Oriented Architectures benefit from each other?

And the following 8 papers were presented in three sessions:

Session 1

   • Tweetflows - Flexible Workflows with Twitter. Martin Treiber, Daniel Schall, Schahram Dustdar, Christian Scherling.

   • Evaluating the Compatibility of Conversational Service Interactions. Sam Guinea, Paola Spoletini.

Session 2

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[14] *http://www.s-cube-network.eu/pesos-2011*
[15] *http://www.icse-conferences.org/*

- Towards Efficient Measuring of Web Services API Coverage. Waldemar Hummer, Orna Raz, Schahram Dustdar.

- Engineering Multi-Tenant Software-as-a-Service Systems. Bikram Sengupta, Abhik Roychoudhury.

- Architecture-based Reliability Analysis of Web Services in Multilayer Environment (short paper). Cobra Rahmani, Azad Azadmanesh, Harvey Siy.

Session 3

- SMaRT: A Workbench for Reporting the Monitorability of Services from SLAs. Howard Foster, George Spanoudakis.

- Identifying, Modifying, Creating, and Removing Monitor Rules for Service Oriented Computing. Ricardo Contreras, Andrea Zisman.

- Business Process Performance Prediction on a Tracked Simulation Model. Andrei Solomon, Marin

The workshop also included a discussion panel:

Title: **Proposed Areas of research in order to improve the state of the practice in service-oriented systems engineering.**

Panelists:

- **Marin Litoiu** (York University, Canada).

- **Elisabetta Di Nitto** (Politecnico di Milano, Italy).

- **Andrea Zisman** (City University London, UK).

- **Liam O'Brian** (Csiro, Australia).

2.2.8 **PESOS 2012**[16]

It will be organized in Zurich, Switzerland -- June 4, *2012* in conjunction with the 34th International Conference on Software Engineering (ICSE) 2012[17].

The S-CUBE participants are shown table 4.

Table 4 S-Cube participants involved in the PESOS 2012 Workshop

Name	S-Cube Partners	Role in PESOS 2012
Patricia Lago	VU University Amsterdam	Organizing committee members
Andreas Metzger	Paluno (Ruhr Institute for Software Technology)-University of Duisburg-Essen	
Matthias Book	Paluno (Ruhr Institute for Software Technology)-University of Duisburg-Essen	Program Committee
Schahram Dustdar	TUW	

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[16] *http://www.s-cube-network.eu/pesos-2012*
[17] *http://www.ifi.uzh.ch/icse2012/*

Howard Foster	City University of London
Qing Gu	VU University Amsterdam
Sam Guinea	Politecnico di Milano
Dragan Ivanovic	Universidad Politécnica de Madrid
Raman Kazhamiakin	FBK
Kyriakos Kritikos	University of Crete

In addition, there will be special sessions. Some of them will be organized by:

▪ Pierluigi Plebani, Politecnico di Milano, Italy

2.2.9   MoSE 2011

MoSE 2011[18]-- The 3rd International workshop on Model-Driven Service Engineering- took place in Brussels, Belgium, in conjunction with the 30th International Conference on Conceptual Modelling, October 31 – November 3, 2011. The goal of MoSE was to provide a forum to discuss different issues related to Service Engineering in conjunction with Model-driven engineering and to share open research problems in this area as well as practical experiences. Particular interests include methods, modeling languages, development methodologies and techniques in the field of service-oriented design.

The 2011 edition of MoSE workshop[19] was organized by a committee that includes Mike Papazoglou and Willem-Jan Van den Heuvel of Tilburg University.

2.2.10   ICSOC 2011

ICSOC 2011[20]--- the Ninth International Conference on Service Oriented Computing[21] --- took place in Paphos, Cyprus, December 5-8, 2011. It was jointly-organized by S-Cube members: two of the three general chairs are S-Cube participants, Mohand-Said Hacid of UCBL (honorary general chair) and Winfried Lamersdorf of UHH. Sam Guinea of Polimi will be a demonstration chair, Cesare Pautasso of the S-Cube associate institution University of Lugano is a PhD symposium chair and Mike Papazoglou of Tilburg is the acting chair of the steering committee.

2.2.11   BPM 2011

BPM 2011[22]--- the Ninth International Conference on Business Process Management --- took place in Clermont-Ferrand, France, August 28 to September 2nd 2011. It was jointly-organized by S-Cube members: two of the two general chairs is S-Cube participant, Mohand-Said Hacid of UCBL and Schahram Dustdar (Vienna University of Technolog) served as a workshop Co-Chair.

2.2.12   WI-IAT 2011

IEEE/WIC/ACM WI-IAT 2011[23]: the 10th IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology took place in Lyon, France, August 22-27 2011. Web Intelligence and Intelligent Agent Technology explores the fundamental roles, interactions as well as practical impacts of Artificial Intelligence engineering and Advanced Information Technology on the next generation of Web systems. Here AI-engineering is a general term that refers to a new area, slightly beyond traditional AI: brain informatics, human level AI, intelligent agents, social network intelligence and classical areas such as knowledge engineering, representation, planning, discovery

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[18] *http://www.kybele.etsii.urjc.es/MOSE2011/*

[19] http://kybele.escet.urjc.es/mose2011/index.htm

[20] *http://icsoc11.icsoc.org/*

[21] See http://www.icsoc.org/

[22] *http://bpm2011.isima.fr/*

[23] *http://wi-iat-2011.org/*

and data mining are examples. Advanced Information Technology includes wireless networks, ubiquitous devices, social networks, and data/knowledge grids, as well as cloud computing, service oriented architecture. The conference was jointly-organized by S-Cube members: the general chairs is a S-Cube participant, Mohand-Said Hacid of UCBL and Mike Papazoglou (Tilburg University) served as a Programme Committee Co-Chair.

2.3   Summer School on Service-Oriented Computing, 2011

The 2011[24] edition of SSAIE Summer School took place in Crete, Greece, from June 27th to July 3rd 2011. It was open to graduate students and young professionals to provide training and information in the area of Service Oriented Computing. More information on the school can be found at http://www.summersoc.eu/summersoc2011/

This Summer School was a continuation of a successful series of workshops on Service Science and Engineering, the first of which was held in Crete, in May 2007. The second workshop was held in Palermo, Italy in June, 2008, the third Summer School was successfully organized in Crete in June, 2009 and the fourth again in Crete from June 28 to July 2, 2010.

Following the results of the 2010 edition and after listening to the participant's recommendations, this Summer school focused on a small number of specific topics by providing *tracks* and lectures in these tracks focused only on these areas. The tracks were:

   • Conceptual Foundations

   • Computing in the Clouds

   • People in Service Oriented Computing Systems (SOCS)

   • Emerging Topics

The summer school also included running state-of-the-art FP7 projects on Services, System Architectures, Infrastructures and Engineering (SSAIE) and demos.

The following projects have participated:
   ▪ S-Cube : The European Network of Excellence in Software Services and Systems.
   ▪ Compas[25] : Compliance-driven Models, Language, and Architectures for Services.
   ▪ SOA4All[26]: Service Oriented Architectures for All.
   ▪ MASTER[27]: Managing Assurance, Security and Trust for sERvices.
   ▪ SOCIETIES: Self Orchestrating Community ambiEnT IntelligEnce Spaces (http://www.ict-societies.eu/)
   ▪ webinos: Secure WebOS Application Delivery Environment (http://webinos.org/)

The tracks were color-coded on the program and were easily recognizable. In addition, as in previous years, there was a special session where PhD candidates presented their thesis. A visit to the archaeological sites of Knossos and Festos was also organized.

The SSAIE summer school brought together distinguished experts on software and services, graduate students, young researchers and professionals from leading academic, research and industrial organizations, altogether 81, and 30 speakers presented their work in the aforementioned areas of interest.

2.3.1   PhD. Sessions

A special session was organized for the PhD students participating in the 2011 summer school, in which each participant presented their topic of research. The session was found to be valuable to the

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[24] *http://www.summersoc.eu/summersoc2011/*

[25] *http://www.compas-ict.eu/*

[26] *http://www.soa4all.eu/*

[27] *http://www.master-fp7.eu/*

continuation of students research work as it provided the opportunity to discuss with professors and industry experts their ideas and methods, who in turn provided students with comments, guidance and ideas for collaboration.

The session was organized and co-ordinated by Dimka Karastoyanova and Frank Leymann of Universität Stuttgart, Germany, and chaired by Dimka Karastoyanova. It contained four presentations organized in two sessions:

PhD Candidates Session – Part 1

- 1. Konstantinos Bratanis, Business-Level Agreements for the Future Internet of Services, South-East European Research Centre (SEERC), City College, International Faculty of the University of Sheffield, Thessaloniki Greece
- 2. David Schumm, Information Design for Business Process Management, Institute of Architecture of Application Systems, University of Stuttgart, Germany

PhD Candidates Session – Part 2

- 3. Ognjen Scekic, The Social Compute Unit: Adaptability and Rewarding Mechanisms Distributed Systems Group, Vienna University of Technology, Vienna, Austria
- 4. Chrysostomos Zeginis, Towards cross-layer service monitoring and adaptation, Department of Computer Science, University of Crete, Crete, Greece

The symposium also provided an opportunity for the presenters to participate in a poster session, where posters of all presenting PhD Students were shown as well as posters from other PhD Students who had submitted an abstract to the symposium but were selected for poster presentation only. The following posters were presented by:

1. Damian A. Tamburri, Going Global with Agile Service Networks, VU University Amsterdam, The Netherlands
2. Ognjen Scekic, The Social Compute Unit: Adaptability and Rewarding Mechanisms, Distributed Systems Group, Vienna University of Technology, Vienna, Austria
3. Mirela Riveni, Towards a Unified Model of Dynamic Properties in Mixed Service Oriented Systems, Distributed Systems Group, Vienna University of Technology, Vienna, Austria
4. Shaghayegh Sharif Nabavi, On Constructing Social Compute Unit Skeletons, Distributed System Group, Vienna University of Technology
5. Tobias Unger, Advanced Task Management – Concepts and Implementation, Institute of Architecture of Application Systems, University of Stuttgart, Germany
6. Katharina Gorlach, Dynamic Service Composition, Institute of Architecture of Application Systems, University of Stuttgart, Germany
7. David Schumm, Information Design for Business Process Management, Institute of Architecture of Application Systems, University of Stuttgart, Germany
8. Muhammad Z. Candra, The Human-Provided Application Store, Distributed Systems Group, Vienna University of Technology, Vienna, Austria
9. George Baryannis, Towards Realizing Dynamic QoS-aware Web Service Composition, Department of Computer Science, University of Crete, Crete, Greece
10. Konstantinos Bratanis, Business-Level Agreements for the Future Internet of Services, South-East European Research Centre (SEERC), City College, International Faculty of the University of Sheffield, Thessaloniki Greece
11. Chrysostomos Zeginis, Towards cross-layer service monitoring and adaptation, Department of Computer Science, University of Crete, Crete, Greece
12. Vitaliy Liptchinsky, A Novel Programming Model for Social and Context Aware Computing, Distributed Systems Group, Vienna University of Technology, Vienna, Austria

2.3.2   Evaluation Results

At the end of the summer school participants were asked to fill in a questionnaire regarding the quality and the relevance of the presentations to each session topic, the presenters and the organization of the summer school. The results show that most of the participants were satisfied with the presentations as well as the speakers and they suggested additional speakers to attend the next summer school and

future topics to be covered. Scientific topics such as Cloud computing, business strategy and composition models, Crowdsourcing, ambient intelligence, are the some of the topics suggested by the participants in order to be considered for the next summer school. They rated the organization as well prepared and useful. One interesting point was that most of the students attended the summer school requested for more demos regarding the tools presented and not just presentations.

The results also revealed that participants were very enthusiastic and satisfied with the social events organized in this summer school, which included visits to Knossos and Festos archaeological sites as well as a visit to a traditional Cretan village. Overall, the comments were very positive and most of the participants expressed their interest in joining next SSAIE summer schools.

Furthermore, for the first time, the students (PhD and Msc) had to take the exams prepared by the professors at the end of the summer school with the aim of provoking the students to be more active.

2.3.3   The 2012 Summer School

In 2012, the SSAIE Summer School will open for PhD students, young researchers and professionals from leading academic, research and industrial organizations across Europe and around the world. Topics will span the entire field of SOC from conceptual foundations to industrial applications. In addition to high quality training, the Advanced School helps forge a new research and scientific community on Service-Oriented Computing (SOC). The Advanced School fosters the free exchange of ideas and helps the participants to network and start new cooperative research projects. It will take place in Crete, Greece, from July 2nd to July 7th 2012. More information on this edition can be found at http://www.summersoc.eu/. The tracks are:

• Conceptual Foundations

• Computing in the Clouds

• People in Service Oriented Computing Systems (SOCS)

• Emerging Topics

Based on the questionnaire results in which participants proposed additional presenters based on a topic of interest, the organization committee will take these propositions under consideration and invitations have already been sent.

2.4   Industrial Dissemination

The dissemination of the S-Cube results is one of the main objectives of the WP-IA-2.2. Towards this goal, during the last year, some activities have been performed to define workshops specifically organized to meet the industry needs. To achieve this objective, a specific set of S-Cube research results have been selected and each of them has been described taken into account what the industries are more interested in.

The complete list of the selected results is available on the S-Cube portal[28]. The description of these results include not only technical information but also the maturity level of the work and the potential impact with respect to some of the most relevant topics in the EU research agenda, such as the Cloud Computing and the Future Internet Application.

Starting from the list of S-Cube results, Thales Group has selected a subset of research results according to the topics that the companies are more focused on. Thales group[29] is a global leader in mission-critical information systems for defense and security, aerospace and transportation and has considerable expertise in the most sophisticated technologies and large-scale software systems. Thales Group has selected the following subset:

• SNAPT - Service Network Analysis and Prediction Tool.

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[28] *http://s-cube-network.eu/results/s-cube-shopping-list-for-industry-1/results*
[29] *Thales Services, http://www.thalesgroup.com/Group/Home/*

- Method for simulation of provision of service orchestrations and resource management policies

- Jopera - Eclipse-based Visual Composition Environment featuring a general language for heterogeneous service composition.

- A service platform for development, deployment and runtime management of Real-Time Online Services.

- Deriving Composite Service Specifications.

- Online Testing for Proactive Adaptation.

- SALMon –testing & monitoring infrastructure and related technologies.

- Federated SLA aware cloud infrastructures.

These selected results constituted the agenda of the workshop organized in the Thales facilities on Feb, 24th, 2012. The details regarding the workshop and the results are reported in deliverable CD-IA-2.2.7 - Report on industrial Dissemination of S-Cube Research results.

2.5   *Presentations & Invited Talks*

This section describes the external presentations and invited talks given by members of the S-Cube network, disseminating the research vision and results of the project. In total there were 66 reported presentations in the reporting period (see table 5).

Table 5: Presentations & Invited Talks given by S-Cube NoE Members

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
1	Q12	ServiceWave 2010	Qing Gu	14/12/2010	*Ghent,* Belgium	Q. Gu & P. Lago, Service identification methods: a systematic literature review, *ServiceWave, Springer,* 2010
2	Q12	ServiceWave 2010	Maryam Razavian	15/12/2010	*Ghent,* Belgium	M. Razavian & P. Lago, A Frame of Reference for SOA Migration, ServiceWave, Springer, 2010
3	Q12	IFIP WG2.9 on Requirements Engineering annual meeting	Andrea Zisman	(8-11/02/2011)	Cancun, Mexico	'Monitor Adaptation, IFIP WG2.9 Annual Meeting, Cancun, Mexico, 8-11 February 2011'
4	Q12	Presentation at ICSOC	INRIA	December 9, 2010	San Francisco, California.	Maha Driss, Naouel Moha, Yassine Jamoussi, Jean-Marc Jézéquel, and Henda Hajjami Ben Ghézala. -- A requirement-centric approach to web service modeling, discovery, and selection. -- In ICSOC, San Francisco, California, December 2010. Springer.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
5	Q12	Presentation at MobiQuitous	INRIA	December 6-9t, 2010	Sydney, Australia	Francoise André, Erwan Daubert, Grégory Nain, Brice Morin, and Olivier Barais. -- F4plan: An approach to build efficient adaptation plans. -- In MobiQuitous. ACM, 2010
6	Q12	Presentation at ServiceWave	INRIA	December 15, 2011	Ghent, Belgium	Claudia Di Napoli, Maurizio Giordano, Jean-Louis Pazat and Chen Wang: A Chemical Based Middleware for Workflow Instantiation and Execution. ServiceWave 2010
7	Q12	Presentation at Mona+ Workshop	INRIA	December 01, 2010	Ayia Napa, Cyprus	Freitas A.L., Parlavantzas N. Pazat J.-L. A QoS assurance framework for Distributed Infrastructures 3rd Int' Workshop on Monitoring, Adaptation and Beyond. Aya Napa; Cyprus.
8	Q12	WESOA	Hossein Siadat	December 07, 2010	San Francisco, California	B. Pernici, and S. H. Siadat, "Adaptation of web services based on QoS satisfaction," in Proc. WESOA'10, 2010.
9	Q12	SEE Workshop	Pernici	December 07, 2010	San Francisco, California	Workshop on Services, Energy, and Ecosystems at ICSOC, general presentation and workshop coordination – co-organized with the GAMES EU STREP prooject
10	Q12	PDP	A. Kertesz	February 11, 2011	Ayia Napa, Cyprus	A. Kertesz, G. Kecskemeti, I. Brandic, Autonomic SLA-aware Service Virtualization for Distributed Systems, The 19th Euromicro International Conference on Parallel, Distributed and Network-Based Computing, Ayia Napa, Cyprus, 9-11 February 2011.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
11	Q12	PDP	A. Micsik	February 09, 2011	Ayia Napa, Cyprus	*Jorge Ejarque, Andras Micsik, Raül Sirvent, Peter Pallinger, Laszlo Kovacs, and Rosa M. Badia:* Job Scheduling with License Reservation: A Semantic Approach. The 19th Euromicro International Conference on Parallel, Distributed and Network-Based Computing, Ayia Napa, Cyprus, 9-11 February 2011.
12	Q12	PDP	Zs. Nemeth	February 09, 2011	Ayia Napa, Cyprus	*Manuel Caeiro, Zsolt Németh, and Thierry Priol:* A Chemical Model for Dynamic Workflow Coordination. The 19th Euromicro International Conference on Parallel, Distributed and Network-Based Computing, Ayia Napa, Cyprus, 9-11 February 2011.
13	Q12	ICSOC2010	Philipp Leitner	December 10, 2010	San Francisco, California	Philipp Leitner, Branimir Wetzstein, Dimka Karastoyanova, Waldemar Hummer, Schahram Dustdar and Frank Leymann. Preventing SLA Violations in Service Compositions Using Aspect-Based Fragment Substitution. The Eighth International Conference on Service Oriented Computing (ICSOC2010). December 7-10, 2010, San Francisco, California

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
14	Q12	ICSOC 2010	Manuel Carro	December 09, 2010	San Francisco, California	Dragan Ivanovic, Manuel Carro, Manuel Hermenegildo. Automatic Fragment Identification in Workflows Based on Sharing Analysis. Service-Oriented Computing - ICSOC 2010, LNCS, Num. 6470, 15 pages, Springer Verlag, 2010.
15	Q13	S-Cube review	Neil Maiden			Presentation of JRA1.1 Review; Presentation of SoE1.2 Review
16	Q13	Third International Workshop on Principles of Engineering Service-Oriented Systems, PESOS 2011	Andrea Zisman	May 24, 2011	Hawaii, U.S.A	Contreras R., Zisman A.: Identifying, Modifying, Creating, and Removing Monitor Rules for Service Oriented Computing, Third International Workshop on Principles of Engineering Service-Oriented Systems, May 2011.
17	Q13	Third International Workshop on Principles of Engineering Service-Oriented Systems, PESOS 2011	Andrea Zisman	May 23, 2011	Hawaii, U.S.A	Discussion panel: "Proposed Areas of research in order to improve the state of the practice in service-oriented systems engineering."
18	Q13	Invited Seminar IMT Lucca	Antonio Bucchiarone			Run-time adaptation of Service-based Applications
19	Q13	ICSE 2011	A. Filieri	May 26, 2011	Hawaii, U.S.A	A. Filieri, C. Ghezzi, G. Tamburrelli, Run-Time Efficient Probabilistic Model Checking
20	Q13	ICSE 2011 Festchrift L. Osterweil,	C. Ghezzi	May 26, 2011	Hawaii, U.S.A	G. Cugola, C. Ghezzi, L. Sales Pinto, Process Programming in the Service Age: Old Problems and New Challenges
21	Q13	SEAMS 2011	G. Salvaneschi	May 23, 2011	Hawaii, U.S.A	C. Ghezzi, M. Pradella, G. Salvaneschi An evaluation of the adaptation capabilities in programming languages

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
22	Q13	SEAMS 2011	C. Ghezzi	May 24, 2011	Hawaii, U.S.A	The fading boundary between development time and run time , Keynote presentation
23	Q13	PESOS 2011	E. Di Nitto	May 23, 2011	Hawaii, U.S.A	Can Global Software Engineering and Service Oriented Architectures benefit from each other?
24	Q13	SAC	Waldemar Hummer	March 24, 2011	Taichung, Taiwan	Waldemar Hummer, Philipp Leitner, Schahram Dustdar. WS-Aggregation: Distributed Aggregation of Web Services The 26th ACM SIGAPP Symposium On Applied Computing (SAC), Taichung, Taiwan. March 21-24, 2011.
25	Q13	ICST	Waldemar Hummer	March 22, 2011	Berlin germany	Waldemar Hummer, Orna Raz, Onn Shehory, Philipp Leitner, Schahram Dustdar. Test Coverage of Data-Centric Dynamic Compositions in Service-Based Systems. The 4th International Conference on Software Testing, Verification and Validation (ICST). Berlin, Germany. March 21-25, 2011.
26	Q13	PESOS	Martin Treiber	May 23, 2011	Hawaii, U.S.A	Martin Treiber, Daniel Schall, Schahram Dustdar, Christian Scherling. Tweetflows - Flexible Workflows with Twitter .The 3rd International Workshop on Principles of Engineering Service-Oriented Systems. Hawaii, U.S.A. May 23-24, 2011.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
27	Q13	WiVS 2011	Kristof Hamann	March 10, 2011	Kiel, Germany	Kristof Hamann, Sebastian Steenbuck, Sonja Zaplata: "Towards NFC-Aware Process Execution for Dynamic Environments", International Workshop on Flexible Workflows in Distributed Systems (WiVS 2011), March 10th, 2011, Kiel, Germany
28	Q14	BPD 2011	Michele Mancioppi (USTUTT)			Michele Mancioppi: "Towards Classification Criteria for Process Fragmentation Techniques"
29	Q14	ICT-GLOW 11	Alexander Nowak (USTUTT)			An Architecture and Methodology for a Four-Phased Approach to Green Business Process Reengineering
30	Q14	COMPSAC'11	Osama Sammodi (UniDue)			Sammodi, O., Metzger, A., Franch, X., Oriol, M., Marco, J., & Pohl, K. (2011). Usage-based Online Testing for Proactive Adaptation of Service-based Applications. In COMPSAC 2011 – The Computed World: Software Beyond the Digital Society. IEEE Computer Society.
31	Q14	The S-Cube Knowledge Model: Update & Next Steps	Michael Parkin	15-16 June 2011	Budapest	Plenary Session, S-Cube Global Meeting, Budapest, 15-16 June 2011.
32	Q14	Adaptation of Web Service Interactions using Complex Event Processing Patterns	Michael Parkin	15-16 June 2011	Budapest	JRA-1.2 (Adaptation & Monitoring) Session, S-Cube Global Meeting, Budapest, 15-16 June 2011.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
33	Q14	15th IEEE International EDOC Conference, Keynote Speech	Mike Papazoglou	August 29, 2011	Helsinki, Finland	Making Business Processes Compliant to Standards and Regulations, 15th IEEE International EDOC Conference, 29th August - 2nd September 2011, Helsinki, Finland.
34	Q14	ICWS 2011	Adina Sirbu	July 6, 2011	Washington DC, USA	A. Marconi, M. Pistore, and A. Sirbu. "Dynamic composition of pervasive process fragments". 9th International Conference on Web Services (ICWS 2011)
35	Q14	EVL-BP	Antonio Bucchiarone	August 29, 2011	Helsinki, Finland	A. Bucchiarone, A. Marconi, M. Pistore, A. Sirbu. "A Context-Aware Framework for Business Processes Evolution". EVL-BP Worshop, EDOC2011
36	Q14	ICGSE 2011	Sajid Hashmi	August 15, 2011	Helsinki, Finland	REMIDI Workshop, Helsinki, August 15, 2011
37	Q14	Information Systems Development (ISD2011). Ediburgh, Scottland	Rafiqul Haque	August 25, 2011	Ediburgh, Scottland	Carroll, N, Haque, R., Whelan, E., and Richardson, I. Modelling Business Transaction Across Service Supply Chain. 20th International Conference on Information Systems Development (ISD2011). Ediburgh, Scottland
38	Q14	Services 2011	Seyed Hossein Siadat	July 4, 2011	Washington DC, USA	B. Pernici, Seyed Hossein Siadat , Selection of Service Adaptation Strategies Based on Fuzzy Logic, IEEE Services conference, Washington DC, USA, July, 2011
39	Q14	ICWS 2011	Pierluigi Plebani	July 7, 2011	Washington DC, USA	V. Andrikopoulos, P. Plebani, Retrieving Compatible Web Services, in Proceedings of Int'l Conference on Web Services (ICWS), Washington DC, USA, July 4-9, 2011.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
40	Q14	CAiSE 2011	Seyed Hossein Siadat	June 22, 2011	London, UK	Barbara Pernici, Seyed Hossein Siadat: A Fuzzy Service Adaptation Based on QoS Satisfaction. Advanced Information Systems Engineering - 23rd International Conference, CAiSE 2011, London, UK, June 20-24, 2011
41	Q14	CGWS@EuroPar 2011	Zsolt Nemeth	August 29, 2011	Bordeaux, France	Vilmos Rajcsanyi and Zsolt Nemeth :The chemical machine: an interpreter for the Higher Order Chemical Language, in CoreGRID/ERCIM Workshop on Grids, Clouds and P2P Computing, 2011
42	Q14	2nd WoSS	Andras Micsik	June 6-9, 2011	Timisoara, Romania	2nd Workshop on Software Services: Cloud Computing and Applications based on Software Services, Timisoara, Romania, June 6-9, 2011, http://sprers.eu/events/2nd-woss
43	Q14	Workshop on Privacy and Geolocalisation,	Salima Benbernou	June 20, 2011	Toulouse, France	Privacy Preserving business process fragmentation, in Workshop on Privacy and Geolocalisation, 20-22 June, Toulouse.France
44	Q14	ICETE/ICE-B	Winfried Lamersdorf	July 19, 2011	Seville, Spain	"Paradigms of Distributed Software Systems: Services, Processes, and Self-Organization" (Keynote Talk), International Conference on e-Business, Seville, Spain, July 2011

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
45	Q14	5th Summer School on Service Oriented Computing	Chrysostomos Zeginis	27 June – 3 July 2011	Heraklion, Greece	Chrysostomos Zeginis and Dimitris Plexousakis, Towards cross-layer service monitoring and adaptation, PhD Session at the 5th Summer School on Service Oriented Computing, 27 June – 3 July 2011, Heraklion, Greece
46	Q14	International Conference on Services Computing	D. Ivanović	July 6, 2011	Washington DC, USA	D. Ivanovic, M. Carro, M. Hermenegildo. Automated Attribute Inference in Complex Service Workflows Based on Sharing Analysis. Proceedings of the 8th IEEE Conference on Services Computing SCC 2011, 8 pages, July 2011.
47	Q14	SERVICES2011	D.A.Tamburri	July 9, 2011	Washington DC, USA	Supporting Cloud Computing Requirements with Agile Service Networks – To Appear in Proceedings of SERVICES 2011 – Washington DC 3-10 July 2011
48	Q14	S-Cube Summer School	D.A.Tamburri	27 June – 3 July 2011	Hersonissos Crete Greece	SummerSOC Poster Session: Going Global With Agile Service Networks – www.summersoc.eu
49	Q14	EICS'11	Arnaud Blouin	June 14, 2011	Pisa, Italy	Combining Aspect-Oriented Modeling with Property-Based Reasoning to Improve User Interface Adaptation Arnaud Blouin, Brice Morin, Olivier Beaudoux, Grégory Nain, Patrick Albers and Jean-Marc Jézéquel EICS'11: Proceedings of the 3rd ACM SIGCHI symposium on Engineering interactive computing systems

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
50	Q14	ICWS 2011	Amin Mesmoudi	July 6, 2011	Washington DC, USA	A. Mesmoudi, M. Mrissa and MS. Hacid: Combining configuration and query rewriting for Web service composition. In IEEE International Conference on Web Services (ICWS), 2011.
51	Q14	ICWS 2011	Emad Elabd	July 6, 2011	Washington DC, USA	E. Elabd, E. Coquery, MS. Hacid: Timed Web Services Analysis after Removing Complex Implicit Transitions. In IEEE International Conference on Web Services (ICWS), 2011.
52	Q14	ISMIS 2011	Yahia Chabane	June 29, 2011	Warsaw, Poland	Yahia Chabane, François Hantry, Mohand-Said Hacid: Querying and Splitting Techniques for SBA: A Model Checking Based Approach. 105-122. ISMIS 2011.
53	Q14	SCC 2011	Dragan Ivanović	July 6, 2011	Washington DC, USA	Automated Attribute Inference in Service Workflows Based On Sharing Analysis. Dragan Ivanović, Manuel Carro, Manuel Hermenegildo. Proceedings of the 8th IEEE Conference on Services Computing SCC 2011, 8 pages, July 2011.
54	Q15	IoS 2011 Collaboration Event	Osama Sammodi	September 28-29, 2011	Brussels, Belgium.	IoS 2011 Collaboration Event, Brussels, Belgium. "S-Cube Quality Prediction Approaches", 28-29, September, 2011
55	Q15	FP8 Networking Event	Andreas Metzger	July 2011	Essen, Germany	FP8 Networking Event, Essen, Germany. July 2011. "European Research at Paluno: Towards the Future Internet"

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
56	Q15	ASAS'11	Andreas Metzger	September 4, 2011	Szeged, Hungary	ESEC/FSE 2011Workshop on Assurances for Self-Adaptive Systems (ASAS'11), Szeged, Hungary. September, 2011. "Towards accurate failure prediction for the proactive adaptation of service-oriented systems"
57	Q15	-	Andreas Metzger	July, 2011	Milan, Italy	Research Seminar DEI, Politecnico di Milano, Milan, Italy. July, 2011. "Towards Accurate Failure Prediction for the Proactive Adaptation of Service-oriented Systems"
58	Q15		Andreas Metzger	June, 2011.	Budapest, Hungary	Seminar Distributed Systems Department, MTA SZTAKI Budapest, Hungary. June, 2011. "The Future Internet: Challenges for Adaptive Service Systems"
59	Q15	ServiceWave	Eric Schmieders	October 27, 2011	Poznan, Poland	ServiceWave, Poznan, Poland. October 2011." Preventing Performance Violations of Service Compositions using Assumption-based Run-time Verification"
60	Q15	Understanding Complex Services through Different Lenses,Cambridge Service Alliance Group, University of Cambridge, England	Noel Carroll			Carroll, N., Whelan, E., and Richardson, I., (2011). Exploring the Implications of IT-enabled Relational Structures on Service Performance, Academic Conference - Understanding Complex Services through Different Lenses, Cambridge Service Alliance Group, University of Cambridge, England.

	Period	*Conference / Forum*	*Presenter*	*date*	*Location*	*Complete reference*
61	Q15	QASBA 2011	Asli Zengin	September 14, 2011	Lugano, Switzerland,	Asli Zengin, Annapaola Marconi and Marco Pistore. CLAM: Cross-layer Adaptation Manager for Service-Based Applications
62	Q15	WAS4FI	Philipp Leitner	October 28, 2011	Poznan, Poland	Leitner, P., Nardini, F. M., Tolomei, G., Dustdar, S., Silvestri, F. Mining Lifecycle Event Logs for Enhancing Service-based Applications. ServiceWave workshop '1st International Workshop on Adaptive Services for the Future Internet (WAS4FI)
63	Q15	WISE	Philipp Leitner	October 14, 2011	Sydney, Australia	P.Leitner, W. Hummer, B.Satzger and S. Dustdar: Stepwise and Asynchronous Runtime Optimization of Web Service Compositions, to appear at 12th International Conference on Web Information Systems Engineering (WISE) (short paper), 2011
64	Q15	IoS Technical Collaboration meeting for FP7 Projects	Kyriakos Kritikos	July 2-7, 2011	Crete, Greece	K. Kritikos, "The 2012 Summer School on Service-Oriented Computing (SummerSOC)", presented at the IOS Collaboration Event, 2011
65	Q15	ECSA2011	D.A. Tamburri			Supporting Communication and Cooperation in Global Software Development with Agile Service Networks
66	Q15	ICSE 2012	Maryam Razavian, Patricia Lago and Wouter Paul Trienekens	June 2, 2012	Zurich, Switzerland	SOA Migration in Practice Tutorial@ICSE

2.6   Collaboration with External Partners

Table 6 summarizes the collaborations established by S-Cube members with external (academic and industrial) partners.

Table 6: Academic and industrial collaborations established by S-Cube NoE Members

Period	*S-Cube Partner*	*Academic collaboration*	*Industrial collaboration*
Q12	**UniDue**	• Uni Lugano • SEERC • IT Innovation • Univ Catalunya • U Münster • CETIC • U Sevilla	• HP • Siemens • Engineering • Thales • SAP • Kühne & Nagel • IBM • Telefonica • Atos Origin
	Tilburg	• Suzhou University, China	• PWC, Utrecht, The Netherlands • CSIRO, Sydney, Australia • LogicaCMG, The Netherlands • Accenture, Amsterdam, The Netherlands • Ericsson GmbH, Unternehmensbereich Forschung und Entwicklung, Aachen, Germany • IBM Zurich Research Laboratory, Switzerland
	UniHH	• University of Applied science, Hamburg, Germany	• Daimler AG, Böblingen, Germany
	UCBL	• University of Michigan (USA) • Wying University (USA)	• SAP Labs France, Sophia Antipolis • IFP - Institut Français du Pétrole, France
	FBK		• Engineering, Italy • SAP, Germany
	LERO		• Collaboration with small Irish Company
	VuA		• IBM Benelux. • Logica.

Period	S-Cube Partner	Academic collaboration	Industrial collaboration
Q13	**UniDue**	• Uni Lugano • SEERC • IT Innovation • Univ Catalunya • U Münster • CETIC • U Sevilla	• HP • Siemens • Engineering • Thales • SAP • Kühne & Nagel • IBM • Telefonica • Atos Origin
	Tilburg	• Suzhou University, China	• PWC, Utrecht, The Netherlands • CSIRO, Sydney, Australia • LogicaCMG, The Netherlands • Accenture, Amsterdam, The Netherlands • Ericsson GmbH, Unternehmensbereich Forschung und Entwicklung, Aachen, Germany • IBM Zurich Research Laboratory, Switzerland
	UniHH	• University of Applied science, Hamburg, Germany	
	UCBL	• Michigan University, USA • Wyning University, USA • CSIRO, Australia • Purdue University, USA • Qatar University.	• SAP Labs France, Sophia Antipolis • IFP - Institut Français du Pétrole, France
	VuA	• University of British Columbia, Canada • Swinburne University of Technology, Australia	

Period	Partner	Academic collaboration	Industrial collaboration
	UniDue		• HP • Siemens • Engineering • Thales • SAP • Kühne & Nagel • IBM • Telefonica • Atos Origin
	Tilburg	• Suzhou University, China	• PWC, Utrecht, The Netherlands • CSIRO, Sydney, Australia • LogicaCMG, The Netherlands • Accenture, Amsterdam, The Netherlands • Ericsson GmbH, Unternehmensbereich Forschung und Entwicklung, Aachen, Germany • IBM Zurich Research Laboratory, Switzerland
	UniHH	• University of Applied science, Hamburg, Germany	
Q14	**UCBL**		• SAP Labs France, Sophia Antipolis • IFP - Institut Français du Pétrole, France
	FBK		• Engineering, Italy • SAP, Germany
	VuA	• University of British Columbia, Canada • Swinburne University of Technology, Australia	• IBM Benelux. • Logica.

Period	Partner	Academic collaboration	Industrial collaboration
	UniDue		• HP • Siemens • Engineering • Thales • SAP • Kühne & Nagel • IBM • Telefonica • Atos Origin
	Tilburg	• Suzhou University, China	• PWC, Utrecht, The Netherlands • CSIRO, Sydney, Australia • LogicaCMG, The Netherlands • Accenture, Amsterdam, The Netherlands • Ericsson GmbH, Unternehmensbereich Forschung und Entwicklung, Aachen, Germany • IBM Zurich Research Laboratory, Switzerland
	UniHH	• University of Applied science, Hamburg, Germany	
	UCBL		• SAP Labs France, Sophia Antipolis • IFP - Institut Français du Pétrole, France
	FBK		• Engineering, Italy • SAP, Germany
	VuA	• University of British Columbia, Canada • Swinburne University of Technology, Australia	• IBM Benelux. • Logica.
	CNR		• Yahoo! Research, Barcelona, Spain • Google, Boston, USA • IBM Research, Haifa, IL
	UoC		• NovelTech, Greece • IBM, Germany
	TUW		• IBM Almaden

2.7   Project Meetings

2.7.1   Internal Project Meetings & Workshops

During the reporting period, S-Cube held several internal project meetings and workshops. The purpose of these events is to foster collaboration through the presentation of research to other network members and through the planning of future research and co-operation. The meetings held in the third year of the network are shown in Table 7 7. Items of interest are the Process Mining workshop held in Pisa, organized by JRA-1.2 members, and the BPM workshop, which took place in Paris to coordinate research in the JRA-2.1 workpackage.

Table 7: Internal dissemination Meetings organized in Year 4

Period	*Title / Aim of Meeting*	*Date*	*Location*	*Participants*
Q12	S-Cube / Hola! Meeting	1 December	Brussels	Michael Parkin (TILBURG)
Q12	ServiceWave 2010	13-15, December 2010	Ghent	Andreas Metzger, Klaus Pohl, Eric Schmieders, Osama Sammodi (UniDue)
Q12	GSD/Services Workshop – to establish whether we could make research links between Lero-UL and VUA/PoliMi	28th Jan 2011	Amsterdam	Researchers from Lero-UL (Sajid Hashmi, Ita Richardson), PoliMi and VUA.
Q12	Industrial Advisory Board Meeting	15/12/2010	Ghent, B	IAB members
Q13	M36 Review Meeting Rehearsal	16-18 March 2011	Milan	S-Cube Partners
Q13	M36 Review Meeting	03-04 May 2011	Essen	S-Cube Partners
Q13	Meeting with partners from VUA and PoliMi about ongoing research	26th May 2011	ICSE 2011	Ita Richardson (LERO), Patricia Lago (VUA), Elisabetta di Nitto (POLIMI)
Q14	S-Cube Global Meeting	15-17.06.2011	Budapest, Hungary	All
Q14	S-Cube Quality Prediction WG Meeting	15.06.2011	Budapest	All
Q15	S-Cube Global Meeting	21-23 Nov.2011	Barcelona, Spain	All
Q15	S-Cube Steering Committee Meeting	21.Nov.2011	Barcelona, Spain	SC Members
Q15	S-Cube Governing Board Meeting	21.Nov.2011	Barcelona, Spain	GB Members
Q15	IAB (Industry Advisory Board) Meeting	26.Oct.2011	Poznan, Poland	Barbara Pernici (POLIMI)

2.7.2   Meetings with external entities

S-Cube held several external project meetings summarized in Table 8.

Table 8: Meetings with external entities organized in Year 4

	Title / Aim of Meeting	Date	Location	Participants
Q12	EFIA and FIRA meetings (collaboration under FI umbrella)	Various meetings through the past months	Brussels / Zurich	Klaus Pohl, Andreas Metzger (UniDue)
Q12	SEQUOIA Focus Group (virtual meeting)	February / 2011	-	Andreas Metzger (UniDue)
Q12	FIA Budapest, virtual PC meeting	February / 2011	-	Andreas Metzger (UniDue)
Q13	Collaboration meeting with OMELETTE project	19/4/2011	Hoofdorp, Netherlands	Vasilios Andrikopoulos, Michael Parkin (TILBURG)
Q15	Qatar Foundation Meeting	18-24 November	Doha	UPD/UCBL

2.7.3   Other events and Meetings

2.7.3.1   Future Internet Assembly - Budapest

The next future internet Assembly event took place between from May 17 to May 19 2011 in Budapest, Hungary. The Assembly is collaboration between projects that have recognized the need to strengthen European activities on the Future Internet to maintain European competitiveness in the global marketplace. It meets regularly to promote these interests and brings together around 150 research projects that are part of Challenge 1 of the ICT programme of FP7[30].

To ensure a focused and well-balanced event, the EC recently asked for proposals of ideas for cross-cutting Future Internet related topics to be discussed at the FIA event[31]. The S-Cube network submitted a session idea for FIA Budapest for *Dynamically adaptive applications in the Future Internet: beyond adaptive services: (i) application scenarios, (ii) key research and technology challenges (iii) promises and impact on society and economy*.

Overall, there were 69 session proposals submitted to the assembly's organizing committee and the general public were asked to vote for them. The S-Cube proposal received enough votes to make it onto the FIA 2011 program and it is considered as a significant event in the S-Cube dissemination calendar.

The organizers were:

- **Andreas Metzger and Clarissa Marquezan** (Paluno, University of Duisburg-Essen; S-Cube Network of Excellence & FInest FI PPP Use Case project)
- **Katarzyna Wac** (University of Geneva)
- **David Hausheer** (TU Darmstadt)

The results of this session was a collection of the presented material and a consolidated list of research challenges towards dynamically adaptive Future Internet applications. Three application scenarios were envisioned involving key elements of the Future Internet):

- *eHealth:* The paradox of health and life expectancy in the 21st century is that while advancements in technology and medicine enable us to live longer, our modern lifestyle habits increase the probability of getting chronically ill and experience long-term limitations, until death. Yet, current legacy health systems are designed more for acute cure rather than continuous chronic care, which in turn is leading to a continuous increase in health care costs.

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[30]Source: http://www.future-internet.eu/home/future-internet-assembly.html

[31]See http://www.future-internet.eu/home/shape-fia.html.

An integrated health care approach supported by Future Internet technologies anytime-anywhere-anyhow is a key to achieve the ambitious goal of efficient and effective managing of diseases and enabling the self-management of patients 'on-the-move'. This poses requirements on the Future Internet in terms of secure distributed data management and privacy of the patient's location and health state, as well as a high responsiveness of the underlying network infrastructure, bandwidth on demand capabilities, and viable business models for Quality of Service assurance of eHealth applications. A key issue is the adaptation of applications to the underlying network conditions by selecting the best available quality for the particular needs of an application or by changing the application behavior.

▪ *Transport and Logistics:* Future Internet technologies can facilitate radical improvements not only for optimizing existing processes in international transport and logistics, but also for radically new and innovative logistics processes. Specifically, the operational procedures of the involved parties can be significantly improved. This means that intermediate steps currently needed due to the lack of control and visibility on the logistics networks can be rationalized, which in turn leads to significant economic and social-ecological benefits. Enabling those innovations requires managing highly complex information and operational processes along with managing multiple interdependencies. Several technological innovations, such as RFID or EPC global are a first step towards such optimized transport and logistics processes. However, to become truly efficient, a key issue will be predictive, distributed event handling capabilities (exploiting information from sensor networks and video streams) that allow for the treatment of delays and other unforeseen events by proactively adapting the logistics processes.

▪ *Media:* Most media distributors have migrated from analogue to digital media formats, but their applications are still static and inflexible and based on proprietary applications and devices and working with files and streams. They can greatly increase business flexibility to address new opportunities using the Future Internet by encapsulating content as media objects that can be composed and manipulated using services and can actively support the de-livery of content from its creators to consumers. Media producers understand what makes content attractive to consumers, and how to produce it while meeting business constraints on quality and cost. But they don't understand how to compose services, or how to use composed services to manage content delivery in an extended supply chain connecting content creators to consumers. Imagine that a media producer wants to deliver a high-definition movie to consumers who will view it using PC or smart phone devices. To make money from the service, advertising agencies will be invited to insert targeted content at broadcast time, bidding for slots based on the number of consumers, and collecting their responses through the distributor's social networking site.

This session was organized around two major parts. This session started with a short introduction and motivation for dynamic adaptive services in Future Internet applications and the presentation of application scenarios. The second part of this session was an open panel discussion involving invited panelists and Q&A from the audience, followed by the concluding remarks and follow up actions coordinated by the organizers.

Application scenarios
Scenario1: eHealth
Katarzyna Wac (U of Geneva) / David Hausheer (TU Darmstadt)
Scenario2: Transport and logistics
Clarissa Marquezan (Paluno, U of Duisburg-Essen) on behalf of FInest (FI PPP Use Case Project)
Scenario 3: Media
Michael Boniface (IT Innovation)
Panel of experts & plenary discussion of key research and technology challenges
• Nuria De-Lama Sanchez (Atos Origin): Future Internet e-Health
• Yagil Engel (IBM Haifa Research Labs)
• Michael Boniface (IT Innovation)

Concluding remarks and follow up actions
    the organisers

3   Publications

3.1   *Joint Publications*

Table 9 shows the articles, book chapters and papers published in collaborations between S-Cube Partners. In total there were 17 joint publications.

Table 9: Joint Publications in Year 4 of the S-Cube Network

	Period	*Complete reference*	*Partners involved*
1	Q12	B. Pernici, S. Dustdar, G.R. Gangadharan, P. Lago, and S. Murugesan, editors. Proceedings of the First International Workshop on Services, Energy, and Ecosystem (SEE 2010) ICSOC Workshop. Dipartimento di Elettronica e Informazione, Politecnico di Milano, 2010.	POLIMI, TUW, VUA
2	Q12	C. Di Napoli, M. Giordano, J.-L. Pazat, and C. Wang. Towards a service-based internet. Volume 6481 of Lecture Notes in Computer Science, chapter A Chemical Based Middleware for Workflow Instantiation and Execution, pages 100–111. Springer Berlin / Heidelberg, 2010.	CNR, INRIA
3	Q12	Q. Gu, M. Parkin, and P. Lago. A taxonomy of service engineering stakeholder types. In Second International Conference on Exploring Services Sciences, page 15. Springer, 2011	VUA, Tilburg
4	Q12	G. Lewis, D. Smith, A. Metzger, A. Zisman, and M. Pistore. Report of the 2nd international workshop on principles of engineering service-oriented systems (pesos 2010). SIGSOFT Softw. Eng. Notes, 35(5):30–33, 2010.	UniDue, CITY, FBK
5	Q12	A. Metzger, M. Papazoglou, and K. Pohl. Working together to create a network of excellence. Projects Magazine, 20:18–20, 2010.	UniDue, Tilburg
6	Q12	C.D. Napoli, M. Giordano, Z. N´emeth, and N. Tonellotto. Adaptive instantiation of service workflows using a chemical approach. In F.D.P.F.A.S. M. Danelutto, editor, Euro-Par 2010 – Parallel Processing Workshops VHPC, HeteroPar, HPPC, HiBB, CoreGrid, UCHPC, HPCF, XtreemOS, PROPER, and CCPI, Lecture Notes in Computer Science. Springer, 2010.	CNR, SZTAKI
7	Q13	V. Andrikopoulos and P. Plebani. Retrieving compatible web services. In The IEEE International Conference on Web Services (ICWS), 2011.	Tilburg, POLIMI
8	Q13	S.I. Hashmi, R. Haque, E. Schmieders, and I. Richardson. Negotiation towards service level agreements: A life cycle based approach. In 7th IEEE World Congress on Services (SERVICES 2011), 2011. to appear.	LERO, Tilburg, UniDue
9	Q13	O. Sammodi, A. Metzger, X. Franch, M. Oriol, J. Marco, and K. Pohl. Usage-based online testing for proactive adaptation of service-based applications. In COMPSAC 2011 – The Computed World: Software Beyond the Digital Society. IEEE Computer Society, 2011. to appear.	UniDue, UPC
10	Q13	E. Schmieders, A. Micsik, M. Oriol, K. Mahbub, and R. Kazhamiakin. Combining sla prediction and cross layer adaptation for preventing sla violations. In 2nd Workshop on Software Services: Cloud Computing and Applications based on Software Services, 2011.	UniDue, SZTAKI, UPC, CITY, FBK
11	Q14	C.D. Napoli, M. Giordano, and Z. N´emeth. Alchemy of services. ERCIM News, 2011(85):37, 2011.	CNR, SZTAKI

	Perio d	Complete reference	Partners involved
12	Q14	A. Vasilios, M. Parkin, M.P. Papazoglou, and P. Lago. The s-cube knowledge model – experiences in integrating ssme research communities. In Proceedings of KMIS 2011, 2011.	Tilburg, VUA
13	Q15	S. Guinea, G. Kecskemeti, A. Marconi, and B. Wetzstein. Multi-layered monitoring and adaptation. In Proceedings of the 9th International Conference on Service Oriented Computing, 5-9 December, 2011, Paphos, Cyprus, 2011.	POLIMI, SZTAKI, FBK, USTUTT
14	Q15	O. Danylevych, F. Leymann, and C. Nikolaou. Enterprise and organizational modeling and simulation. volume 88 of Lecture Notes in Business Information Processing, chapter A Framework of Views on Service Networks Models, pages 21–34. Springer Berlin Heidelberg, 2011.	USTUTT, UoC
15	Q15	S. Hashmi, V. Clerc, M. Razavian, C. Manteli, D.A. Tamburri, P. Lago, E.D. Nitto, and I. Richardson. Using the cloud to facilitate global software development challenges. In ICGSE Workshop on Tool Support Development and Management in Distributed Software Projects, Helsinki, Finland, 2011.	Lero, VUA, POLIMI
16	Q15	P. Leitner, F.M. Nardini, G. Tolomei, S. Dustdar, and F. Silvestri. Mining lifecycle event logs for enhancing service-based applications. In 1st International Workshop on Adaptive Services for the Future Internet (WAS4FI) colocated with ServiceWave'11, 2011.	TUW, CNR
17	Q15	D. Meilaender, A. Bucchiarone, C. Cappiello, E. Di Nitto, and S. Gorlatch. Using a lifecycle model for developing and executing real-time online applications on clouds. In 7th International Workshop on Engineering Service-Oriented Applications (WESOA 2011), 2011.	Uni Muenster, FBK, POLIMI

3.2 Individual Publications

Table 10 shows the 44 single-institution publications.

Table 10: Single-Institution Publications in Year 4 of the S-Cube Network

	Period	Complete reference	Partner
1	Q12	B. Pernici and S.H. Siadat. Adaptation of web services based on qos satisfaction. In Sixth International Workshop on Engineering Service-oriented Applications (WESOA 2010), 2010.	POLIMI
2	Q12	G. Baryannis and D. Plexousakis. Towards realizing dynamic qos-aware web service composition. In Proceedings of the PhD Symposium at the 8th IEEE European Conference on Web Services (ECOWS 2010), 2010	UoC
3	Q12	W. Hummer, O. Raz, O. Shehory, P. Leitner, and S. Dustdar. Test coverage of data-centric dynamic compositions in service-based systems. In In Proceedings of the 4th International Conference on Software Testing, Verification and Validation (ICST), 2011.	TUW
4	Q12	R. Kazhamiakin, M. Paolucci, M. Pistore, and H. Raik. Modelling and automated composition of user-centric services. In On the Move to Meaningful Internet Systems: OTM 2010 – Confederated International Conferences: CoopIS, IS, DOA and ODBASE, Hersonissos, Crete, Greece, October 25-29, 2010, Proceedings, Part I, pages 291–308, 2010.	FBK

	Period	Complete reference	Partner
5	Q12	S. Lane and I. Richardson. Process models for service based applications: a systematic literature review. Information and Software Technology, 2010.	LERO
6	Q12	C. Zeginis and D. Plexousakis. Towards realizing ws cross-layer monitoring and adaptation. In Proceedings of the PhD Symposium at the 8th IEEE European Conference on Web Services (ECOWS 2010), 2010.	UoC
7	Q12	D. Bianculli, D. Giannakopoulou, and C.S. Păsăreanu. Interface decomposition for service compositions. In Proceedings of the 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, Hawaii, USA. Acm, 2011.	USI
8	Q13	K. Hamann, S. Steenbuck, and S. Zaplata. Towards NFC-aware process execution for dynamic environments. In H. Hellbrück, N. Luttenberger, and V. Turau, editors, Workshops der wissenschaftlichen Konferenz Kommunikation in verteilten Systemen 2011 (WowKiVS 2011), Eceasst. Electronic Communications of the EASST, 2011.	UniHH
9	Q13	W. Hummer, P. Leitner, and S. Dustdar. SEPL – a domain-specific language and execution environment for protocols of stateful web services. Distributed and Parallel Databases, pages 1–31, 2011.	TUW
10	Q13	W. Hummer, O. Raz, and S. Dustdar. Towards efficient measuring of web services API coverage. In 3rd International Workshop on Principles of Engineering Service-Oriented Systems (PESOS), co-located with ICSE 2011, 2011	TUW
11	Q13	H. Psaier, F. Skopik, D. Schall, and S. Dustdar. Resource and agreement management in dynamic crowdcomputing environments. In 2011 15th IEEE International Enterprise Distributed Object Computing Conference (EDOC 2011). IEEE, 2011.	TUW
12	Q14	L. Baresi and L. Pasquale. Relating Software Requirements and Architecture, chapter Adaptation Goals for Adaptive Service-oriented Architectures. Springer, 2011.	POLIMI
13	Q14	N. Carroll, R. Haque, E. Whelan, and I. Richardson. Modelling business transactions across service supply chain networks. In 20th International Conference on Information Systems Development (ISD2011), 2011.	LERO
14	Q14	R. Contreras and A. Zisman. Identifying, modifying, creating, and removing monitor rules for service oriented computing. In Third International Workshop on Principles of Engineering Service-Oriented Systems (PESOS), 2011.	CITY
15	Q14	J. D. Dombi and A. Kertész. Agents and Artificial Intelligence, volume 129 of Communications in Computer and Information Science, chapter Advanced Scheduling Techniques with the Pliant System for High-Level Grid Brokering, pages 173–185. Springer Berlin Heidelberg, 2011.	SZTAKI
16	Q14	K. Mahbub and G. Spanoudakis. Proactive sla negotiation for service based systems: Initial implementation and evaluation experience. In 8th IEEE International Conference on Services Computing, July 4 – 9, 2011, Washington DC, USA, 2011.	CITY
17	Q14	K. Mahbub, G. Spanoudakis, and A. Zisman. A monitoring approach for runtime service discovery. Journal of Automated Software Engineering, 18(2), 2011.	CITY
18	Q14	B. Pernici and S.H. Siadat. Selection of service adaptation strategies based on fuzzy logic. In Proceedings of SERVICES, 2011.	POLIMI
19	Q14	D.A. Tamburri and P. Lago. Satisfying cloud computing requirements with agile service networks. In Proceedings of SERVICES, 2011.	VUA

	Period	*Complete reference*	*Partner*
20	Q14	D.A. Tamburri and P. Lago. Supporting communication and cooperation in global software development with agile service networks. In Proceedings of ECSA, 2011.	VUA
21	Q14	A. Vilenica, K. Hamann, W. Lamersdorf, J. Sudeikat, and W. Renz. An extensible framework for dynamic market-based service selection and business process execution. In DAIS 2011: 11th IFIP International Conference on Distributed Applications and Interoperable Systems, Lecture Notes in Computer Science, pages 150–164, Berlin/Heidelberg. Springer.	UniHH
22	Q14	A. Metzger and C. C. Marquezan. Future internet apps: The next wave of adaptive service-oriented systems? In ServiceWave 2011, 2011.	UniDue
23	Q14	E. Schmieders and A. Metzger. Preventing performance violations of service compositions using assumption-based run-time verification. In ServiceWave 2011, 2011.	UniDue
24	Q14	A. Zengin, R. Kazhamiakin, and M. Pistore. Clam: Cross-layer management of adaptation decisions for service-based applications. In EEE International Conference on Web Services (ICWS) Work in Progress Track, 2011.	FBK
25	Q14	A. Metzger. Towards accurate failure prediction for the proactive adaptation of service-oriented systems (invited paper). In Proceedings Workshop on Assurances for Self-Adaptive Systems (ASAS), collocated with ESEC 2011, 2011.	UniDue
26	Q14	P. Plebani, C. Cappiello, M. Comuzzi, B. Pernici, and S. Yadav. Micromais: executing and orchestrating web services on constrained mobile devices. Software: Practice and Experience, 2011.	POLIMI
27	Q14	A. Mesmoudi, M. Mrissa and MS. Hacid: Combining configuration and query rewriting for Web service composition. In IEEE International Conference on Web Services (ICWS), 2011.	UCBL
28	Q14	E. Elabd, E. Coquery, MS. Hacid: Timed Web Services Analysis after Removing Complex Implicit Transitions. In IEEE International Conference on Web Services (ICWS), 2011.	UCBL
29	Q14	Yahia Chabane, François Hantry, Mohand-Said Hacid: Querying and Splitting Techniques for SBA: A Model Checking Based Approach. ISMIS Industrial Session 2011: 105-122	UCBL
30	Q15	K. Bratanis, D. Dranidis, and A.J.H. Simons. Slas for cross-layer adaptation and monitoring of service-based applications: a case study. In Proceedings of the International Workshop on Quality Assurance for Service-Based Applications, Qasba '11, pages 28–32, New York, NY, USA, 2011. ACM	SEERC
31	Q15	D. Ivanovi´c, M. Carro, and M. Hermenegildo. Constraint-based runtime prediction of sla violations in service orchestrations. In G. Kappel, H. Motahari, and Z. Maamar, editors, Service-Oriented Computing – ICSOC 2011, number Tbd in Lncs. Springer Verlag, 2011.	UPM
32	Q15	P. Leitner, W. Hummer, and S. Dustdar. Cost-based optimization of service compositions. IEEE Transactions on Services Computing (TSC), 2011. To appear.	TUW
33	Q15	P. Leitner, W. Hummer, B. Satzger, and S. Dustdar. Stepwise and asynchronous runtime optimization of web service compositions. In 12th International Conference on Web Information Systems Engineering (WISE) (short paper), 2011.	TUW

	Period	Complete reference	Partner
34	Q15	M. Mancioppi, O. Danylevych, D. Karastoyanova, and F. Leymann. Towards classification criteria for process fragmentation techniques. In BDP2011, colocated with BPM'11, 2011.	USTUTT
35	Q15	P. Leitner, B. Satzger, W. Hummer, C. Inzinger, and S. Dustdar. Cloudscale – a novel middleware for building transparently scaling cloud applications. In the 27th Symposium On Applied Computing (SAC), Track on Cloud Computing, 2012.	TUW
36	Q15	M. Razavian and P. Lago. A survey of soa migration in industry. In International Conference on Service Oriented Computing, ICSOC, 2011.	VUA
37	Q15	B. Satzger, H. Psaier, D. Schall, and S. Dustdar. Stimulating skill evolution in market-based crowdsourcing. In 9th International Conference on Business Process Management (BPM), volume 6896 of Lecture Notes in Computer Science, pages 66–82. Springer, 2011.	TUW
38	Q15	A. Zengin, A. Marconi, and M. Pistore. Clam: Cross-layer adaptation manager for service-based applications. In Proceedings of the International Workshop on Quality Assurance for Service-Based Applications, Qasba '11, pages 21–27. Acm, 2011.	FBK
39	Q15	F. Andr´e, E. Daubert, and G. Gauvrit. Towards a generic context-aware framework for selfadaptation of service-oriented architectures. In 5th International Conference on Internet and Web Applications and Services, pages 309–314, Barcelona, Spain, 2010.	INRIA
40	Q15	F. Andr´e, E. Daubert, and G. Gauvrit. Distribution and self-adaptation of a framework for dynamic adaptation of services. In The Sixth International Conference on Internet and Web Applications and Services (ICIW), pages 16–21, St. Maarten, Netherlands Antilles, 2011.	INRIA
41	Q15	A. Barkhordarian, F. Demuth, K. Hamann, M. Hoang, S. Weichler, and S. Zaplata. Migratability of bpmn 2.0 process instances. In 7th International Workshop on Engineering Service-Oriented Applications (WESOA 2011), Berlin / Heidelberg, 2011. Springer.	UniHH
42	Q15	R. Karim, C. Ding, and C. Chi. Multiple non-functional criteria service selection based on user preferences and decision strategies. In IEEE International Conference on Service Oriented Computing and Application (SOCA), 2011.	Tsinghua University
43	Q15	C. Wang and J.L. Pazat. Using chemical metaphor to express workflow and service orchestration. In 2010 IEEE 10th International Conference on Computer and Information Technology (CIT), pages 1504–1511, 2010.	INRIA
44	Q15	S. Zaplata, M. Meiners, and W. Lamersdorf. Designing future-context-aware dynamic applications with structured context prediction. Software: Practice and Experience (SPE), 2011.	UniHH

4 Summary

Table 11: Joint Publications

	Year 1	**Year 2**	**Year 3**	**Year 4**
Journals	4	1	0	0
Conferences	12	5	12	6
Workshops	6	6	7	7
Others[32]			2	4
TOTAL	22	12	21	17

Table 12: Presentations and Talks

	Year 1	**Year 2**	**Year 3**	**Year 4**
Conferences	12	14	16	33
Workshops	8	14	14	16
Others[33]	17	19	16	17
TOTAL	37	47	46	66

Table 13: Number of (co-) organized events by S-Cube partners

	Year 1	**Year 2**	**Year 3**	**Year 4**
Conferences	2	2	2	4
Workshops	4	5	9	9
Schools	1	1	1	1

Table 14: Research visits

Traveller	Partner Institution	Host Institution	Year	Dates	nber of days (total)
PERIOD 1 - March 2008 / February 2009 - 25 travel days					
PLEBANI	polimi milano	uoc heraklion	2008	06-16/09	**11**
CAVALLARO	polimi milano	uni uni stuttgart	2008	24/11-07/12	**14**
PERIOD 2 - March 2009 / February 2010 - 173 travel days					
ANDRIKOPOULOS	uni tilburg	ucbl lyon	2009	11-18/05	**8**
KAZHAMIAKIN	fbk trento	stoccarda	2009	26-30/05	**5**
KONSTANTINOS	city univ london	uoc heraklion	2009	02-20/06	**19**
ANDRIKOPOULOS	uni tilburg	ucbl lyon	2009	11-16/06	**6**
LE ROY	city univ london	london	2009	13-26/06	**14**
LANE	lero limerick	city univ london	2009	15-28/06	**14**
ANDRIKOPOULOS	uni tilburg	ucbl lyon	2009	21-25/06	**5**

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[32] *Meetings, Summer Schools, Seminars,joints events with other projects*
[33] *Meetings, Summer Schools, Seminars,joints events with other projects*

CAPIELLO	polimi milano	?	2009	20-31/07	**12**
HANTRY	ucbl lyon	pisa global meeting	2009	16-19/09	**4**
DUBOIS	polimi milano	uoc heraklion	2009	04-14/11	**11**
VOSKAKIS	uoc heraklion	polimi milano	2009	09-13/12	**5**
ANDRIKOPOULOS	uni tilburg	polimi milano	2009	12-18/12	**7**
DEEPACK	lero limerick	city univ london	2010	10-23/01	**14**
IVANOVIC	uni madrid	tu wien	2010	20-25/02	**6**
ACS	sztaki budapest	tu wien	2010	21-26/02	**6**
BUCCHIARONE	fbk trento	polimi milano	2010	23-26/02	**4**
ANDRIKOPOULOS	uni tilburg	uni stuttgart	2010	24/02-01/03	**7**
MANCIOPPI	uni tilburg	uni stuttgart	2010	15/02-01/03	**16**
WETZSTEIN	uni stuttgart	fbk trento	2010	21-27/02	**7**
MÜLLER CEJAS	uni sevilla	uni catalunya	2010	27/02-01/03	**3**
PERIOD 3 - March 2010 / February 2011 : 351 travel days					
BARGIANNIS	uoc heraklion	pisa global meeting	2010	01-04/03	**4**
HANTRY	ucbl lyon	pisa global meeting	2010	01-04/03	**4**
HAMANN	uni hamburg	pisa global meeting	2010	01-05/03	**5**
KERTESZ	sztaki budapest	cnr roma	2010	01-05/03	**5**
LEITNER	tu wien	pisa global meeting	2010	01-05/03	**5**
SAMMODI	uni duisburg	pisa global meeting	2010	01-11/03	**11**
LANE	lero limerick	pisa global meeting	2010	02-05/03	**4**
MUSARAJ	ucbl lyon	pisa global meeting	2010	4-5/03	**2**
BARGIANNIS	uoc heraklion	uni madrid	2010	05-16/03	**12**
DAUBERT	inria rennes	uni hamburg	2010	07-19/03	**13**
LEITNER	tu wien	uni stuttgart	2010	07-19/03	**13**
HANTRY	ucbl lyon	uni tilburg	2010	14-18/03	**4**
HAMANN	uni hamburg	uni stuttgart	2010	14-19/03	**6**
MUSARAJ	ucbl lyon	pisa global meeting	2010	18-29/03	**12**
GIORDANO	cnr roma	inria rennes	2010	10-15/05	**5**
TREIBER	uni catalunya barcelona	tu wien	2010	16-29/05	**14**
KARMAZI	uoc heraklion	uni uni stuttgart	2010	23-28/05	**5**
KOVACS	sztaki budapest	uni uni stuttgart	2010	24-27/05	**4**
KERTESZ	sztaki budapest	uni stuttgart	2010	24-27/05	**4**
MICSIK	sztaki budapest	uni stuttgart	2010	24-27/05	**4**
CAROLL	lero limerick	upd paris	2010	31/05-11/06	**12**
KARMAZI	uoc heraklion	upd paris	2010	08-13/06	**6**
VOSKAKIS	uoc heraklion	upd paris	2010	08-13/06	**6**
ORIOL HILARI	uni catalunya barcelona	polimi milano	2010	04-09/07	**6**
KARMAZI	uoc heraklion	uni uni stuttgart	2010	10-18/07	**9**
HAQUE	uni tilburg	lero limerick	2010	19/06-10/07	**22**
IVANOVIC	uni madrid	tu wien	2010	20-23/07	**3**
DANYLEVYCH	uni stuttgart	uoc heraklion	2010	21/06-05/07	**15**
ANDRIKOPOULOS	uni tilburg	upd paris	2010	28/06-	**12**

				09/07	
MANCIOPPI	uni tilburg	uni stuttgart	2010	03-24/08	**22**
IVANOVIC	uni madrid	uni hamburg	2010	02-11/10	**10**
OUZIRI	upd paris	polimi milano	2010	12-15/10	**4**
JEHANGIRI	dortmund	polimi milano	2010	13-15/10	**3**
RÖBLITZ	dortmund	polimi milano	2010	13-15/10	**3**
SCHMIEDERS	uni duisburg	polimi milano	2010	14-15/10	**2**
MICSIK	sztaki budapest	city univ london	2010	02-06/11	**5**
JUHASZ	city univ london	budapest	2010	02-09/11	**8**
KERTESZ	sztaki budapest	city univ london	2010	02-09/11	**8**
PLEBANI	polimi milano	uni tilburg	2010	14-17/11	**4**
KERTESZ	sztaki budapest	uni catalunya barcelona	2010	20-26/11	**6**
MANCIOPPI	uni tilburg	uni stuttgart	2010	06-20/12	**15**
HASHMI	lero limerick	amsterdam	2011	27/01-11/02	**16**
MANCIOPPI	uni tilburg	uni stuttgart	2011	10-25/02	**16**
OBERORTNER	tu wien	fbk trento	2011	17-18/02	**2**
PERIOD 4 - March 2011 / February 2012 : 434 travel days					
KERTESZ	sztaki budapest	uoc heraklion	2011	01-07/04	**8**
MARCO GOMEZ	uni catalunya barcelona	uni sevilla	2011	06-09/04	**4**
ORIOL HILARI	uni catalunya barcelona	uni sevilla	2011	06-09/04	**4**
RAIK	fbk trento	polimi milano	2011	8-21/05	**14**
SCHMIEDERS	uni duisburg	sztaki budapest	2011	15-17/05	**3**
SIADAT	polimi milano	upd paris	2011	22-28/05	**7**
GIORDANO	napoli	sztaki budapest	2011	12-19/06	**8**
BARGIANNIS	uoc heraklion	budapest	2011	14-20/06	**7**
ZEGKINIS	uoc heraklion	sztaki budapest	2011	14-20/06	**7**
EL GAMMAL	uni tilburg	ucbl lyon	2011	12/06-17/07	**36**
KERTESZ	sztaki budapest	uvt tunis	2011	02-11/07	**10**
FOUQUET	inria rennes	oslo	2011	23/05-08/07	**47**
BRANDIC	tu wien	budapest	2011	25-29/07	**5**
RODRIGUEZ	uni catalunya barcelona	sztaki budapest	2011	31/07-06/08	**7**
HASHMI	lero limerick	amsterdam	2011	30/09-31/10	**32**
DE LEENHEER	amsterdam	polimi milano	2011	10-11/11	**2**
TAMBURRI	amsterdam	polimi milano	2011	10-11/11	**2**
KONSOLAKI	uoc heraklion	uni catalunya barcelona	2011	20-24/11	**4**
SCHMIEDERS	uni duisburg	uni catalunya barcelona	2011	20-24/11	**4**
BARGIANNIS	uoc heraklion	uni catalunya barcelona	2011	20-24/11	**4**
ZEGKINIS	uoc heraklion	uni catalunya barcelona	2011	20-24/11	**4**
SAMMODI	uni duisburg	uni catalunya barcelona	2011	20-25/11	**6**
TAMBURRI	amsterdam	polimi milano	2011	22/10-05/11	**15**
DE LEENHEER	amsterdam	polimi milano	2011	13-15/12	**3**

TAMBURRI	amsterdam	polimi milano	2011	13-15/12	**3**
BARGIANNIS	uoc heraklion	uni madrid	2011	25/11-10/12	**17**
CONTRERAS	city univ london	fbk trento	2012	01/11-31/01	**92**
PSAIER	tu wien	sztaki budapest	2012	27/01-06/02	**12**
AMELLER	uni catalunya barcelona	groningen	2012	29-31/01	**3**
ACS	sztaki budapest	uni catalunya barcelona	2012	31/01-06/02	**7**
FERNANDEZ	inria rennes	amsterdam	2012	03-12/02	**10**
MERCE PONT	uni catalunya barcelona	sztaki budapest	2012	07-13/02	**7**
RODRIGUEZ	uni catalunya barcelona	sztaki budapest	2012	07-13/02	**7**
KOTCAUER	sztaki budapest	uni catalunya barcelona	2012	14-21/02	**8**
IVANOVIC	uni madrid	düsseldorf	2012	19-23/02	**5**
BRATANIS	uoc heraklion	düsseldorf	2012	23-28/02	**6**
DRANIDIS	uoc heraklion	düsseldorf	2012	23-28/02	**6**
BENTOUNSI	upd paris	amsterdam	2012	26-29/02	**4**
KRITIKOS	uoc heraklion	sztaki budapest	2012	26-29/02	**4**
OVERALL TOTAL					**983**

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