S-CUBE

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Management Summary

This deliverable summarizes the efforts concerning the dissemination of the network's results and its collaborations with ICT SSAI&E (Software and Service Architectures, Infrastructures, and Engineering) throughout the second year of the S-Cube Network of Excellence (NoE). It reports on the dissemination and usage of the foreground project results, and summarizes the joint activities performed in collaboration with other projects, ICT SSAI&E projects included.

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Members of the S-Cube consortium:

University of Duisburg-Essen (Coordinator)	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
MTA SZTAKI – Computer and Automation Research Institute	Hungary
Vienna University of Technology	Austria
Université Claude Bernard Lyon	France
University of Crete	Greece
Universidad Politécnica de Madrid	Spain
University of Stuttgart	Germany
University of Hamburg	Germany
Vrije Universiteit Amsterdam	Netherlands

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/

Contents

1 Introduction

The community outreach workpackage focuses on the spread of research outcomes, innovation and knowledge orientation across the wider scientific community, special subsections of the industry and user communities, and consider opportunities of applying S-Cube to novel or emerging application fields. The beneficiaries of S-Cube have engaged in a number of activities to disseminate the research results of the Network of Excellence (NoE). They published joint papers in leading journals as well as to circulated workpackage results among the wider academic community. They have presented NoE's results at workshops and conferences, and given keynote speeches. The S-Cube beneficiaries ave also organised, co-organised and taken part to a number of dissemination events such as workshops, conferences and summer schools. Some of the above external dissemination activities were performed using the S-Cube Web-portal. The beneficiaries are also involved in many Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Collaboration Working Groups (CWGs) to leverage the spread of excellence through the activities of these groups.

This deliverable reports the work performed during the second year of the NoE on dissemination of network results, including collaboration with ICT SSAI&E Projects. It is also a follow-up deliverable to CD-SoE-1.2.2: Collaboration Plan for Joint Activities with ICT SSAI&E Projects [7]. This deliverable discusses the specific collaboration activities that are performed to foster community outreach. Other S-Cube dissemination and collaboration work packages and tasks (such as WP-IA-2.2 "Alignment with European Industry Practices" and WP-SoE-1.1 "Virtual Campus") cover the individual activities of S-Cube with respect to dissemination plans for reaching out to other communities and spread of excellence activities and are reported in relevant deliverables.

This deliverable is organised as follows. Section 2 provides an overview of the content of the deliverable. Section 3 describes the S-Cube's involvement in international conferences, workshops and other events. Section 4 outlines the achievements of S-Cube with respect to published/in-preparation books and book series. Section 5 summarises joint publications, presentations and invited talks. Section 6 documents the status of the S-Cube web portal and the S-Cube newsletters as instruments for dissemination and outreach. Section 7 presents the actions based on the areas of collaboration for S-Cube in relation with the SSAI&E CWGs. Section 8 reports on the new International Master in Service Engineering that has been created by the S-Cube partners to foster the education of the new generation of service engineers. Finally, Section 9 concludes the deliverable.

2 Overview of S-Cube's Dissemination Results in the 2nd Year

This section provides an overview of the dissemination results achieved by S-Cube in its second year, providing references to where each item is detailed in the deliverable.

Organization and participation to events (Section 3)

The S-Cube beneficiaries co-organised the ICSOC/ServiceWave 2009 joint conference (Section 3.1.1, the "Software and Services" Track at ESWC 2010 (Section 3.1.2) and six workshops in conjunction with international conferences (see Section 3.2). Moreover, S-Cube beneficiaries organised three summer schools (see Section 3.3) and a Round Table Discussion (Section 3.4.3), and participated to the Supercomputing Exhibition 2009 (Section 3.4.2), the French Scientific Days (Section 3.4.1) and the 2nd Japan-EU Symposium on the "New-Generation Networks" and "Future Internet" (Section 3.4.4).

Books and Book Series (Section 4)

The S-Cube beneficiaries collaborated with Springer to create the "Service Science" subline of Lecture Notes in Computer Science (LNCS), of which Mike Papazoglou (Tilburg) is one of the editors in charge

(see Section 4.1). Additionally, the S-Cube partners are working on two books. The first one, the so-called "S-Cube Book", is a collection of surveys on the state of the art in the S-Cube research areas (see Section 4.2). The second one, titled "Service Engineering - European Research Results", is being produced in the scope of the Service Engineering CWG lead by Schahram Dustdar (TUW) as a joint effort of nine ICT SSAI&E FP-6 and FP-7 projects (see Section 4.3).

Joint Publications and Invited Talks (Section 5)

S-Cube project members have published 15 joint papers in highly respected venues, and communicated project results though 56 presentations and invited talks in conferences, workshops, panels and meetings.

S-Cube Web Portal and Newsletter (Section 6)

The S-Cube Web Portal, the web site that publishes the results produced by the S-Cube members (deliverables, newsletters, etc.), has scored impressive an year-on-year improvement in terms of visibility on the Web (see Section 6.1). The S-Cube partners have produced a newsletter that has been distributed to the joint conference ICSOC/ServiceWave 2009 (see Section 6.2.

Collaboration with ICT SSAI&E Projects (Section 7)

In the scope of NESSI, S-Cube participants provided inputs to the NESSI Strategic Research Agenda (SRA) Volume 3, and participated in telephone conferences and in one physical meeting devoted to collect, shape and summarise future research topics (Section 7.1).

S-Cube is very actively involved in seven Collaboration Working Groups (CWGs), three of them lead by S-Cube participants (Section 7.2).

International Master in Service Engineering (Section 8)

The International Master in Service Engineering (IMSE) is the new two-year Erasmus Mundus Master programme organised by the S-Cube partners Tilburg (coordinator), UoC and USTUTT. IMSE students spend a semester in Germany (USTUTT), followed by Greece (UoC) and the Netherlands (Tilburg). The final semester is devoted to thesis work, which includes an internship in an international company or research institute. Upon completion, students earn a joint Master degree in Service Science.

IMSE is delivered in close cooperation with a number of top quality research institutes and universities, such as UC Berkeley (USA), the University of New South Wales (Australia), Tsinghua University (China) and international companies like ForthNet, IBM, Software AG, Accenture and PriceWaterhouse-Coopers. This not only guarantees a curriculum that incorporates the latest developments in the field of service science and service engineering, but also caters for a global marketing of the program.

3   Organizing and Participating in Conferences, Workshops and Other Events

Conferences and workshops are one of the key instruments that enable S-Cube knowledge to be spread to the wider community. S-Cube has organised, co-organised and participated in a number of such dissemination events, described in the remainder of the section.

3.1   Conferences

This section details the participation of the S-Cube partners in the organization of international conferences. It should be noted that the content of this section (and in particular Section 3.2) partially overlaps

with the deliverable PO-SoE-1.2.7 due M24, which will report on the thematic workshops organised by the NoE targeting industry and specialised communities.

3.1.1 ICSOC/ServiceWave 2009

This year the ICSOC and ServiceWave Conferences took place together as the joint conference IC-SOC/ServiceWave 2009, held on 23-27 November 2009 in Stockholm, Sweden. The conference provided a forum for academic researchers and industry practitioners to report on research work in service oriented computing. The joint conference gathered together academic and industrial experts from various disciplines such as business process management, distributed systems, computer networks, wireless & mobile communication networks, grid computing, networking, service science and software engineering.

S-Cube was deeply involved in the organization of ICSOC/ServiceWave 2009. The participation of S-Cube in the organization of ICSOC/ServiceWave 2009 is detailed in Table 1

Name	S-Cube Partner	Role in ICSOC/ServiceWave 2009
Mohand-Said Hacid	UCBL	General Chair & Program Committee
Luciano Baresi	POLIMI	Programme Committee Chair
Mike Papazoglou	Tilburg	Steering committee ICSOC
Klaus Pohl	UniDue	Steering committee ServiceWave
Salima Benbernou	UCBL	Program Committee
Manuel Carro	UPM	Program Committee
Elisabetta Di Nitto	POLIMI	Program Committee
Schahram Dustdar	TUW	Program Committee
Carlo Ghezzi	POLIMI	Program Committee
Dimka Karastoyanova	USTUTT	Program Committee
Patricia Lago	VUA	Program Committee
Winfried Lamersdorf	UniHH	Program Committee
Frank Leymann	USTUTT	Program Committee
Neil Maiden	CITY	Program Committee
Christos Nikolaou	UoC	Program Committee
Michael Parkin	Tilburg	Program Committee
Marco Pistore	FBK	Program Committee
George Spanoudakis	CITY	Program Committee
Andrea Zisman	CITY	Program Committee & Publicity Chair

Table 1: S-Cube participants involved in the organization of ICSOC/ServiceWave 2009

The proceedings of ICSOC/ServiceWave 2009 have been published by Springer in the Lecture Notes in Computer Science (LNCS) line.

3.1.2 "Software and Services" Track @ESWC 2010

S-Cube partners are organizing the "Services Science" Track at the Seventh Extended Semantic Web Conference to be held in Heraklion, Greece, on 30 May - 3 June 2010. The S-Cube participants that have been involved in the organization of the "Software and Services" Track at ESWC 2010 are listed in Table 2:

The track will focus on the increasing relevance of Software as a Service (SaaS) in the current landscape of the software industry, the service-orientation that is prominent in enterprise-scale application construction, and the Web-based systems (especially in the context of Web 2.0 and the Semantic Web) that are increasingly built from more lightweight, so-called RESTful services. The track will explore the

Name	S-Cube Partner	Role in "Software and Services" Track
Andreas Metzger	UniDUE	Organiser
Antonio Bucchiarone	FBK	Program Committee
Dragan Ivanovic	UPM	Program Committee
Dimka Karastoyanova	USTUTT	Program Committee
Michael Parkin	Tilburg	Program Committee
Pierluigi Plebani	POLIMI	Program Committee
Fabrizio Silvestri	CNR	Program Committee
Martin Treiber	TUW	Program Committee

Table 2: S-Cube participants involved in the organization of the "Software and Services" Track at ESWC 2010

cross-fertilization of semantics-based support for the engineering, deployment, provisioning and consumption of services.

At the time of writing, the track has received 27 submissions. The author notification is due 24 February. The proceedings will be published by Springer in the LNCS series.

3.2 Workshops

This section details the participation of the S-Cube partners in the organization of international workshops.

3.2.1 PESOS 2009 @ICSE 2009

The S-Cube partners have organised theFirst International Workshop on Principles of Engineering Service Oriented Systems (PESOS 2009). The S-Cube participants that were involved in the organization of PESOS 2009 are listed in Table 3:

Name	S-Cube Partner	Role in PESOS 2009
Carlo Ghezzi	POLIMI	Steering committee
Domenico Laforenza	CNR	Steering committee
Frank Leymann	USTUTT	Steering committee
Mike Papazoglou	Tilburg	Steering committee
Klaus Pohl	UniDue	Steering committee
Elisabetta Di Nitto	POLIMI	Program Co-Chair
Schahram Dustdar	TUW	Program Co-Chair
Manuel Carro	UPM	Program Committee
Dimka Karastoyanova	USTUTT	Program Committee
Raman Kazhamiakin	FBK	Program Committee
Andreas Metzger	UniDue	Program Committee
Christos Nikolau	UoC	Program Committee
Ita Richardson	Lero-UL	Program Committee
George Spanoudakis	CITY	Program Committee
Willem-Jan van den Heuvel	Tilburg	Program Committee

Table 3: S-Cube participants involved in the organization of PESOS 2009

The goal of the workshop was to discuss about the importance of software engineering methods and techniques for service-oriented systems and, vice versa, about the impact that such kinds of open and naturally adaptable systems can have on traditional software engineering.

The workshop has taken place on the days 18-19 May 2009 in Vancouver, Canada, in conjunction with the 31st International Conference on Software Engineering (ICSE 2009). PESOS received 30 submissions and accepted 19 of them (7 as full papers and 12 as position papers). 30 people attended the workshop and Thomas Erl, author of the book "SOA Principles of Service Design"[2], gave a keynote. The workshop proceedings have be published together with the ICSE 2009 proceedings on the ACM digital library.

3.2.2   PESOS 2010 @ICSE 2010

The Second International Workshop on Principles of Engineering Service Oriented Systems (PESOS 2010) has been organised by the S-Cube partners in collaboration with the CMU Software Engineering Institute (Grace A. Lewis and Dennis Smith). The S-Cube participants that have been involved in the organization of PESOS 2010 are listed in Table 4:

Name	S-Cube Partner	Role in PESOS 2009
Andreas Metzger	UniDue	Organizing Committee
Marco Pistore	FBK	Organizing Committee
Andrea Zisman	CITY	Organizing Committee
Carlo Ghezzi	POLIMI	Steering Committee
Domenico Laforenza	CNR	Steering Committee
Frank Leymann	USTUTT	Steering Committee
Mike Papazoglou	Tilburg	Steering Committee
Klaus Pohl	UniDue	Steering Committee
Luciano Baresi	POLIMI	Program Committee
Manuel Carro	UPM	Program Committee
Schahram Dustdar	TUW	Program Committee
Barbara Pernici	POLIMI	Program Committee
George Spanoudakis	CITY	Program Committee

Table 4: S-Cube participants involved in the organization of PESOS 2010

The mission of PESOS 2010 is to explore user-centric aspects, i.e. all the aspects related to the participation of human actors during the specification, design, implementation, verification, validation, deployment and operation of service-oriented systems. This includes contributions that discuss what activities can be automated (e.g. replacing human intervention) and for which activities user interaction and involvement will remain key.

The workshop will be held in Cape Town, South Africa, on the days 2-8 May 2010, in conjunction with the 32nd International Conference on Software Engineering (ICSE 2010). At the time of writing, PESOS 2010 is currently in the paper review phase of the 25 submitted papers. The workshop proceedings will be published together with the ICSE 2010 proceedings on the ACM digital library.

3.2.3   IE4SOC 2009 @ICSOC/ServiceWave 2009

The S-Cube partners have organised the International Workshop on Industrial Experiences for Service Oriented Computing (IE4SOC 2009). The S-Cube participants that were involved in the organization of the workshop are listed in Table 5:

IE4SOC has been proposed to and accepted by the ICSOC Conference as an applied workshop to interact with industries, obtain feedback on the S-Cube approach and validate its research direction. The basis of the IE4SOC 2009 workshop was the research work carried out in S-Cube on analyzing case studies and gaps in the state of the of adaptive and flexible service-based applications. The goals where threefold. First, to collect case studies and perceived gaps in current platforms from industries and from

Name	S-Cube Partner	Role in IE4SOC 2009
Andreas Gehlert	UniDue	Organiser
Barbara Pernici	POLIMI	Organiser
Marco Pistore	FBK	Organiser
Pierluigi Plebani	POLIMI	Organiser
George Spanoudakis	CITY	Organiser

Table 5: S-Cube participants involved in the organization of IE4SOC 2009

currently running industrial and research projects. Second, to broaden the scope of this gap analysis by collecting industrial scenarios and case studies and by analyzing the industrial needs for research in the next 5-10 years. Last, to establish a discussion forum to analyze and compare the characteristics of presented case studies and solutions.

The workshop was held on 23 November 2009 in Stockholm, as an Industrial workshop event in conjunction with ICSOC/ServiceWave 2009. 26 people registered for the event. The industries have been involved with the presentation of their experiences and their gap analysis with respect to platforms and solutions being adopted and developed. The proceedings were published in [5] as a report of Politecnico di Milano.

3.2.4 MONA+ 2009 @ICSOC/ServiceWave 2009

The Second International Workshop on Monitoring, Adaptation and Beyond (MONA+ 2009) has been organised by the S-Cube partners USTUTT, FBK and UniDue (Andreas Metzger) in collaboration with FOKUS (Fraunhofer) from the EFIPSANS FP-7 project. The participation of S-Cube members in the organization of MONA+ is detailed in Table 6:

Name	S-Cube Partner	Role in MONA+ 2009
Dimka Karastoyanova	USTUTT	Organiser
Raman Kazhamiakin	FBK	Organiser
Andreas Metzger	UniDue	Organiser
Marco Pistore	FBK	Organiser
Manuel Carro	UPM	Program Committee
Andreas Gehlert	UniDue	Program Committee
Patricia Lago	VUA	Program Committee
Michele Mancioppi	Tilburg	Program Committee
Ralph Mietzner	USTUTT	Program Committee
Zsolt Nemeth	STZAKI	Program Committee
Barbara Pernici	POLIMI	Program Committee
Pierluigi Plebani	POLIMI	Program Committee
Martin Treiber	TUW	Program Committee
Willem-Jan van den Heuvel	Tilburg	Program Committee
Tammo van Lessen	USTUTT	Program Committee
Branimir Wetzstein	USTUTT	Program Committee

Table 6: S-Cube participants involved in the organization of MONA+ 2009

Drawing on the success of the first MONA+ workshop (collocated with the ServiceWave 2008 conference), the MONA+ 2009 workshop aimed to bring together researchers and practitioners from different disciplines with various research backgrounds. The goal of MONA+ is to try to understand and establish the shared knowledge necessary for developing novel holistic approaches to Service Based Application (SBA) monitoring and adaptation. The analysis of the state of the art undertaken by S-Cube

clearly points out that the fragmentation and incompleteness in the research and the lack of a holistic framework are amongst the most relevant obstacles in the area of monitoring and adaptation [1]. The aim of the MONA+ series of workshops is bringing together researchers and practitioners from different disciplines with varying research background, with the goal of trying to understand and establish the shared knowledge-base necessary for developing comprehensive approaches for SBA monitoring and adaptation.

The focus for this second edition of the workshop was on the relations and interdependencies between the network layer and the service layer, on how the monitoring and adaptation mechanisms provided at these two layers can better interoperate, and on how to better support an integrated design and management of monitoring and adaptation across these two layers.

The workshop was co-located with ICSOC/ServiceWave 2009 and took place on the days 23-24 November 2009 in Stockholm, Sweden. The workshop collected 25 submissions, 14 of which were accepted, and it was attended by over 50 participants. Besides being announced on the S-Cube Web Portal, the workshop's CFP was syndicated via the CORDIS website and announced via the EFIPSANS project web site. The proceedings will be published by Springer in the LNCS ICSOC Companion Volume.

3.2.5 WESOA'09 @ICSOC/ServiceWave 2009

The Fifth Workshop on Engineering Service-oriented Applications: Supporting Software Service Development Lifecycles (WESOA'09) has been co-organised by the S-Cube partner UniHH. The S-Cube participants involved in the organization of WESOA 2009 are listed in Table 7:

Name	S-Cube Partner	Role in WESOA 2009
Winfried Lamersdor	UniHH	Organiser
Schahram Dustdar	TUW	Program Committee
Dimka Karastoyanova	USTUTT	Program Committee
Pierluigi Plebani	POLIMI	Program Committee
Willem-Jan van den Heuvel	Tilburg	Program Committee

Table 7: S-Cube participants involved in the organization of WESOA 2009

The workshop series focuses on Software Service Engineering (SSE), highlighting key challenges of SSE that arise from specific characteristics of service-oriented applications that are often process-driven, loosely coupled, composed from autonomous services of complex IT landscapes and closely related to diverse socio-economic contexts based on service-oriented computing (SOC) technologies.

The workshop was colocated with ICSOC/ServiceWave 2009 and took place on 23 November 2010 in Stockholm, Sweden. The workshop collected 25 submissions, 8 of which were accepted, and it was attended by more than 50 participants. The proceedings will be published by Springer in the LNCS ICSOC Companion Volume.

3.2.6 BSME 2010 @ICSE 2010

The First International Workshop on Business System Management and Engineering (BSME 2010) will provide a venue for discussing next-generation Business Process Management approaches and their relation with the emergin concept of Service Networks. It is organised by S-Cube partners, namely Prof. Dr ir. Michael P. Papazoglou (Tilburg), Prof. Dr. Willem-Jan van den Heuvel (Tilburg), Prof. Dr. Frank Leymann (USTUTT), and Dr.-Ing. Dimka Karastoyanova (USTUTT). At the time of writing the Program Committee is still pending. The workshop will be co-located with the Forty-eight International Conference on Objects, Models, Components, Patterns (TOOLS EUROPE 2010), and will take place on the 27 June 2010 in Malaga, Spain.

3.3 Summer Schools

This section details the participation of the S-Cube partners in the organization of summer schools.

3.3.1 SSAI&E Summer School 2009

The third installment of the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School was held in Heraklion, Greece on 16-19 June 2009. The Summer School was organised by the Training and Summer School Collaboration Working Group (CWG), that brings together projects of the IST SSAI&E unit, by the S-Cube Network of Excellence, and locally by UoC and Institute of Computer Science of the Foundation for Research and Technology – Hellas (ICS-FORTH). The topics presented covered various areas such as Service Oriented Architectures and Infrastructures, Service Engineering and Business Process Management, Services & Business Processes, Semantic Engineering and Software Engineering.

The SSAI&E summer school brought together distinguished experts on software and services, graduate students, young researchers and professionals from leading academic, research and industrial organizations. There were 110 participants (see Figure 1) from 16 countries including Austria, Belgium, China, France, Germany, Greece, Ireland, Israel, Italy, Mexico, Norway, Poland, Spain, The Netherlands, United Kingdom and USA. Approximately 30 speakers presented their work in the aforementioned areas of interest.

Many IST FP-7 projects participated to this summer school, with tutorials and presentations: S-Cube, Compliance-driven Models, Language, and Architectures for Services (COMPAS), PERsonalised Self-Improving SmarT spaces (PERSIST), Service Oriented Architectures for All (SOA4ALL), Interactive Realtime Multimedia Applications on Service Oriented Infrastructures (IRMOS), NEXOF Reference Architecture (NEXOF-RA), Dynamic Variability in Complex, Adaptive Systems (DIVA), Business objective driven REliable & Intelligent for real busiNess (BREIN), GRid Enabled access to rich meDIA content (GREDIA), Empowering the service industry with SLA-aware infrastructures (SLA@SOI) and Business and IT Alignment using a Model-Based Plug-in Framework (plugIT).

Figure 1: Group picture of the participants of the SSAI&E Summer School 2009

At the end of the summer school, the participants were asked to fill in a questionnaire regarding the quality and the relevance of the presentations to each session topic and the people that presented them

as well as 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. They rated the organization as well prepared and useful and they suggested more social activities and events in the context of the summer school. Overall, the comments were very positive and most of the participants expressed their interest in joining next summer schools on Service Science and Engineering. We are therefore looking forward to the support of the international research community for many more successful future Summer Schools on SSAI&E.

3.3.2   SSAI&E Summer School 2010

The S-Cube partners (in particular UoC) are in the process of organizing the fourth SSAI&E Summer School together with ICS-FORTH. The summer school will take place in Crete, at the Hersonissos village 15km away from Heraklion, on the days 28 June - 2 July 2010.

The 2010 Summer School will cover topics such as: services orientation in the industry, service oriented research and development in the far East, conceptual foundations of service modeling, service systems and business transactions, and the business-IT alignment problem. The program includes panel discussions, several tutorials, demo sessions and a PhD consortium.

3.3.3   Joint EGEE and EDGeS Summer School on Grid Application Support

The Enabling Grids for E-sciencE (EGEE) project is the largest service grid in Europe using the gLite grid middleware. The Enabling Desktop Grids for e-Science (EDGeS) integrates gLite based service grids with BOINC, the most used volunteer desktop grid technology in the world and XtremWeb based desktop grids. In this way the EDGeS infrastructure is the largest potential grid infrastructure in the world.

SZTAKI has organised the Joint EGEE and EDGeS Summer School on Grid Application Support (Figure 2) with the aim of giving insights to these technologies as well as to tools and programming environments by which user can develop and run applications on this enhanced grid infrastructure.

Figure 2: A presentation at the Joint EGEE and EDGeS Summer School

The summer school, attended by 20 participants, was held in Budapest, Hungary on the days 29 June - 4 July 2009. A session was devoted to S-Cube, which included two presentations: "S-Cube" by Nicola Tonellotto (CNR) and "Autonomic Resource Virtualization in Cloud-like Environments" by Attila Kertesz (SZTAKI).

3.4   Other Events

This section details the participation of the S-Cube partners in the organization of and participation to of events other than conferences, workshops and summer schools.

3.4.1   Scientific days, 20-22 November 2009, Rennes, INRIA

"Fête de la science" is a scientific event held each year in November that aims at divulging research and science to the general public. This year, the S-Cube partner INRIA took part in the installment in Rennes (organised by ESPACE DES SCIENCES, which took place on the days 20-22 November 2009.

Around six thousand people visited the S-Cube Partner INRIA's stand this year. The research outcomes of S-Cube have been presented through posters and a demonstration of the results of JRA 1.2, which focused on how an adaptive service based system can help elder people to stay at home.

3.4.2 Supercomputing Exhibition 2009

Through its partner SZTAKI, S-Cube was advertised at the Supercomputing Exhibition 2009 (SC'09). Supercomputing Exhibition is recognised globally as one of the leading international conferences on High Performance Computing (HPC), networking, storage and analysis. Established in 1998, the conference has built a diverse community of participants including researchers, scientists, computing center staff members, IT and data center management, application developers, computer manufacturing personnel, program managers, journalists and congressional staffers.

S-Cube leaflets were made available at their booth (see Figure 3) and S-Cube slides have been projected.

Figure 3: SZTAKI's booth at SC'09

3.4.3 Round Table Discussion "State of the Art versus State of Practice"

On 30 November 2009, Tilburg organised a Round Table Discussion entitled "SOA State of the Art versus State of Practice." The Round Table was open on invitation and had the following participants:

Name	Affiliation
Henk Akkermans	ERISS, Tilburg University
Erik Beulen	Accenture
Bas Bruijninckx	Sundio Group
Willem-Jan van den Heuvel	ERISS, Tilburg University
Chi Chi-Hung	Tsinghua University
Marco Dorscheidt	APG
Paul Maglio	IBM Almaden
Sjoerd Meihuizen	NWO
Peter van Nieuwenhuizen	PricewaterhouseCoopers
Christos Nikolau	UoC
Michael Parkin	ERISS, Tilburg University
Piet Ribbers	ERISS, Tilburg University
Zouhair Taheri	PricewaterhouseCoopers
Marco Lormans	Logica Management Consulting

The Round Table covered topics ranging from the lag between the state-of-the-art and the state-of-practice in SOA, compliance and governance in SOA, Software as a Service (Saas) as the successor of SOA, and the need for G/CaaS (Governance/Compliance as a Service) to complement the emerging SaaS trends.

3.4.4   2nd Japan-EU Symposium on the "New-Generation Networks" and "Future Internet"

Michael Parkin (Tilburg) presented a talk entitled "Service Analysis & Design Considerations" to the "Service Session" at the 2nd Japan-EU Symposium on the "New-Generation Networks" and "Future Internet" (14 October 2009, Tokyo, Japan). The main part of the conference consisted of 14 technical sessions ranging from network architecture to aspects such as Green IT and the socioeconomic impact of the future Internet. The "Service" session covered software services, service architectures and technologies needed to power the Future Internet, including service overlays and their interaction with the network platforms, service framework, distribution (e.g. cloud) and orchestration.

The symposium series has the objective of exploring prospects for deeper exchange and collaboration between the Japanese and European research communities in the area of what is referred to as "New-Generation Network (NWGN)" in Japan and "Future Internet (FI)" in Europe. The 2nd symposium follows the EU-Japan Co-operation Forum on ICT research which was held in Tokyo 4-5 March 2008.

4   Books and Book Series

4.1   Service Science Book Series

The Springer's LNCS "Services Science" subline was created in collaboration with S-Cube project as a shared dissemination outlet through which the EC's FP-7 projects and networks can share their results [6].

The subline is an integral part of the LNCS series, exploiting the publishing infrastructure in place for LNCS to achieve timely worldwide dissemination of the latest research results both in printed and electronic form.

The "Services Science" subline has Mike Papazoglou (S-Cube Scientific Coordinator, Tilburg) as one of the editors in charge besides Robert J.T. Morris (IBM Almaden Research Center, USA) and Darrell Williamson (CSIRO, Sydney, Australia).

The first volume published in the subline is the Proceedings of the Seventh International Joint Conference ICSOC/ServiceWave 2009 (Figure 4) held in Stockholm, Sweden on 24-27 November 2009.

Figure 4: The Proceedings of ICSOC/ServiceWave 2009

4.2   The S-Cube Book

The S-Cube partners are working towards the realization of a book, the working title of which is "Service Based Systems: Surveys by the S-Cube Project". The book, edited by Mike P. Papazoglou and Klaus Pohl, is a collection of surveys on the state-of-the-art in each S-Cube research area: Business Process Management, Service Composition and Co-ordination, Service Infrastructures, Engineering and Design, Monitoring and Adaptation, as well as Quality Definition Negotiation and Assurance.

The book will be published in Summer 2010 by Springer-Verlag in the subline "Services Science" (see Section 4.1).

4.3   Service Engineering - European Research Results

The S-Cube partners are also participating in the editing of a book with the title: "Service Engineering - European Research Results". This book is an outcome of the SSAI&E Service Engineering CWG (see also Section 7.2.6); The themes/topics covered include Software Engineering and Service Engineering of Service Oriented Systems.

The terminological basis of the book results from the integration of the S-Cube Knowledge Model and the NEXOF glossary and was prepared by the S-Cube and NEXOF teams at UniDue. The resulting book will be used as terminological basis for the Service Engineering book edited by the Service Architectures CWG.

The involved projects include: S-Cube, COMPAS, SHAPE, ROMULUS, SeCSE, MOST, ALIVE, DiVA, SOA4ALL. The book chapters are currently being edited, and the book will be published Springer Verlag Vienna. The expected date of publication is September 2010.

5   Joint Publications and Invited Talks

S-Cube project members are encouraged to publish articles for journals, special journal issues, international conferences and workshops on services-related topics. During the second year of the project, the participants published 15 joint papers in highly respected journals, conferences and workshops. The list of joint publications is given in Appendix B. A more detailed report about the joint publications in the NoE will be included in the next iteration of the deliverable PO-SoE-1.2.5, due M27.

Project members also communicated project results though 56 presentations and invited talks in conferences, workshops, panels and meetings. Appendix C provides a list of presentations given by project members during this period.

6   S-Cube Web Portal and Newsletter

6.1   S-Cube Web Portal

The S-Cube Web Portal (Figure 5) is a web site that publishes the results produced by the S-Cube members (deliverables, newsletters, etc.), provides access to news and events about the network, and publishes further information about the S-Cube consortium as well as the activities jointly carried out in the network. Therefore, the web portal is one of the key instruments for external dissemination and communication.

Table 8 shows the year-on-year increment of the Web Portal figures with respect to visits, page views, unique visitors, PageRank[1] and registered users.

Figure 5: The S-Cube Web Portal home page

The terms "visits", "page view" and "unique visitors" are used according to the Google Analytics definitions[2]. The trends are of visits and unique visitors are striking, proving a greatly improved increased visibility of S-Cube on the Web.

The outcome of the Page Rank analysis has further improved since last year. This is a very good result, considering that names similar to S-Cube's are adopted by consulting firms (e.g. S-Cube Financial Consulting Ltd and Scube Scientific Software Solutions Ltd), a conference (the 1st International ICST

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[1]PageRank is a link analysis algorithm (used among others by the Google Internet search engine) that assigns a numerical weighting to each element of a hyper-linked set of documents, such as the World Wide Web, with the purpose of "measuring" its relative importance within the set. The outcomes rank from 10 to 0, respectively assigned to the most and least relevant items in the set.

[2]Definitions available at http://www.google.com/support/googleanalytics/bin/answer.py?hl=en&answer=57164.

Datum	01-03-2008 / 28-02-2009	01-03-2009 / 28-02-2010	Year-on-Year
Visits	11,324	39,168	+345.88%
Page views	76,784	156,787	+204.19%
Absolute Unique Visitors	5,962	23,022	+386.14%
PageRank	6 out of 10	7 out of 10	+1
Registered users	78	145	+53.79%

Table 8: Year-on-Year increase of S-Cube Web Portal figures

Conference on wireless Sensor network Systems and Software (S-CUBE 2009)), and even another EU-ICT project, namely SCUBE-ICT "Strategic Cooperation in Ukraine, Belarus and EU in Information and Communication Technologies".

6.2 S-Cube Newsletter

S-Cube has revised its strategy with respect to the delivery of news. All news will be delivered as soon as it is available, through digital Internet-based media such as the Portal and RSS feeds. This is to ensure the relevance to demonstrate S-Cube as the most relevant and up-to-date information about software services.

Nonetheless, the leader of the SoE work package has decided to produce the newsletter on an occasional basis, as needed for specific conferences and other events. An installment of the S-Cube Newsletter was produced for IC-SOC/ServiceWave 2009 (see Figure 6).

The newsletter contains 2 topics:

1. Why S-Cube? The motivation for the S-Cube Network of Excellence in industrial practice;

2. Details about the New International Masters in Service Engineering (see also Section 8), to be launched in September 2010. Tilburg, UoC and USTUTT are launching a joint International Masters in Service Engineering (IMSE) to be funded by the prestigious Erasmus Mundus program (see also Section 8). This article describes the course that will be launched and how the work of S-Cube forms part of the foundations of this exciting program.

Figure 6: The S-Cube Newletter for IC-SOC/ServiceWave 2009

The archive of the newsletters produced so far is available at: http://www.s-cube-network.eu/results/s-cube-newsletters.

7 Collaboration with ICT SSAI&E Projects

7.1 Collaboration with NESSI

The NESSI Strategic Research Agenda (SRA) is the tool of choice to detail the vision of the NESSI European Technology Platforms (ETP) and to translate its vision into concrete actions, which guide the NESSI project during its entire life. The SRA is developed, shaped, maintained, coordinated and communicated by the SRA Committee (headed by Stefano de Panfilis, Engineering) by consolidating inputs from different NESSI partners and working groups.

In the second year of the S-Cube project, Klaus Pohl, Marco Pistore, Manuel Carro, Andreas Gehlert and Kyriakos Kritikos provided inputs to the SRA Volume 3 on behalf of the S-Cube project. Furthermore, Andreas Gehlert participated on behalf of the S-Cube project in telephone conferences and in one physical meeting devoted to collect, shape and summarise future research topics. Together with the results of the Expert Working Group Meeting in Stockholm (organised by S-Cube), this collection of topics was provided to the European Commission as inputs to the next European Framework Programme.

7.2 Collaboration in the SSAE&I Collaboration Working Groups

Besides the contributions to NESSI SRA, the collaboration between S-Cube and the other FP-6 and FP-7 projects is achieved through the EU Information & Communication Technology's (ICT) Collaboration Working Groups (CWGs). CWGs are considered by the European Commission as the main vector for achieving collaboration and durable links between European projects in the area of software and services. The overarching aim of the CWGs is to accommodate collaboration between projects and leverage knowledge sharing and joint learning, apply each other's (intermediate) research results, and increase awareness of novel developments beyond projects to harmonise and adjust their goals accordingly [3]. Participation in the CWGs will lead to an improved sharing and understanding and ultimately to an improved impact of the results of participating projects. Therefore, CWGs are an ideal vehicle for spreading S-Cube research results to other communities.

The plans for the participation of S-Cube in the CWGs have been detailed in [7]. The contributions of the S-Cube partners to these CWGs in the second twelve months of the NoE are detailed in Table 9.

CWG name	Details in:	Lead by S-Cube members
Collecting Use Cases	Section 7.2.1	Elisabetta di Nitto (POLIMI)
QoS&SLA	Section 7.2.2	*No*
Dissemination	Section 7.2.3	Mike Papazoglou (Tilburg)
Repository	Section 7.2.4	*No*
Service Architectures	Section 7.2.5	*No*
Service Engineering	Section 7.2.6	Schahram Dustdar (TUW)
Standards	Section 7.2.7	*No*

Table 9: Overview of the participation of S-Cube in the SSAI&E CWGs

Additionally, the S-Cube Web Portal had a dedicated web page listing the ongoing and past collaborations with the other SSAI&E Projects: http://www.s-cube-network.eu/collaboration.

7.2.1 Contributions to the Collecting Use Cases Collaboration Working Group

The Collecting Use Cases CWG, led by Elisabetta Di Nitto and Pierluigi Plebani (both S-Cube members), aims at serving the need of collecting and describing in a uniform way industrial use cases. These use cases could then be used for experimentation purposes and also for comparing the features of different solution approaches. The working group has met twice during the collaboration meetings of September

2008 and of June 2009 (both held in Brussels) and is in the process of defining a methodology for describing use cases and, in parallel, is collecting use cases from the various group members. The methodology has been derived from the one defined in by S-Cube's IA-2.2 "Alignment with European Industry Practices" activity in deliverable CD-IA-2.2.2 [4] and has been improved based on the discussion at the last collaboration meeting. The improved methodology has had an impact also on the description of the use cases adopted as part of the S-Cube Integrated Research Framework.

The Collecting Use Cases CWG is currently working on a chapter for the book proposed and edited by the Service Engineering CWG (see also Section 7.2.6). The chapter will describe the use case shared by all book contributors according to the use case description methodology. Moreover, the chapter will classify the related research according to the S-Cube Integrated Research Framework.

7.2.2 Contributions to the QoS&SLA Collaboration Working Group

The aim of the QoS&SLA CWG is to focus on the outcomes of the work carried out in the area of QoS&SLAs in different FP projects. The main goal of the QoS&SLA CWG in the reporting period was to identify and highlight specific research topics in the area of QoS&SLAs. To this direction projects contributed their QoS&SLAs-related research areas and the Service and Service Level Objectives (SLOs). Based on this information, a research matrix will be shaped as an outcome of the working group identifying collaboration areas between different projects that work on the same topics.

S-Cube, specifically WP-JRA-1.3 led by UniDue, contributed two significant documents as input to the CWG's activities. Firstly, the workpackage's research challenges were contributed as a white paper to the CWG's members. Secondly, the S-Cube Quality Reference Model was provided as a structured reference and definition of quality attributes that constitute relevant SLOs across the layers of a service-based application.

7.2.3 Contributions to the Dissemination Collaboration Working Group

The Dissemination CWG is coordinated by Mike Papazoglou (S-Cube member) and addresses two powerful Dissemination instruments; viz. books and other publishable material (in charge to Mike Papazoglou) and summer schools and training (in charge to Christos Nikolaou, UoC). The current projects that participate to this CWG are listed in Table 10.

Project Name	Main Contact	Training Contact
NEXOF	Stefano de Panfilis	Stefano de Panfilis
DEPLOY	Alexander Romanovsky	Jean-Raymond Abria
SOA4ALL	Carlos Pedrinaci	Carlos Pedrinaci
S-Cube	Klaus Pohl	Christos Nikolau
COMPAS	Shahram Dustdar	Shahram Dustdar
OMP	Colin Tattersall	Jens Brandenburg
RESERVOIR	Eliot Salant	Philippe Massonet
PERSIST	Kevin Doolin	John Whitmore
SERVFACE	Steffen Goebel	Steffen Goebel
PROTEST	John Derrick	Francesco Cesarini
DIVA	Geir Horn	Ruzanna Chitchyan
MOST	Krzysztof Miksa	Jakob Henriksson
IRMOS	Eddie Townsend	George Kousiouris
OPEN	Fabio Paternò	Fabio Paternò
Service Web 3.0	Elena Simperl	Jacek Kopecky

Table 10: Main- and Training Contacts for the FP-6 and FP-7 projects in the Dissemination CWG

Summer schools and training activities constitute an important means to spread excellence across the scientific and other communities. As a foundational step, S-Cube has organised a summer school of an international and interdisciplinary character that helped forge a new research and scientific community on Service Science Management and Engineering (SSME).

The first summer school in the series was held in Crete, Greece on 30 May - 3 June 2007, on the topic "The Business Process in the Service Science". The second summer school was held in Palermo, Italy (2-6 June 2008) with 40 participants to facilitate exchange of ideas and help researchers, both senior and young researchers and graduate students from around the world, to understand each other's work, network and start new cooperative research projects. The topic was "Perspectives on Services". Funding for the summer school participants was provided by the S-Cube Network of Excellence, while Engineering Ingegneria Informatica and IBM generously supported the event by covering meeting room expenses and lunches.

The third summer school was held in Crete, Greece (16-19 June 2009). With respect to the previous installments, this summer school widened in scope and themes to address educational requirements of other FP-7 SSAI&E related projects. Time and location were chosen carefully by a local organization committee to attract high profile instructors and maximise attendance. More details on the 3rd SSAI&E Summer School are provided in Section 3.3.1.

7.2.4   Contributions to the Repository Collaboration Working Group

There is a long-standing desire to build a repository of open source software reference implementations for software emanating from the Information Society and Media-Software & Service Architectures and Infrastructures (ISM-D3) Projects. This will maximise the impact of the projects by allowing them to focus on innovative research, reusing and customizing existing software, where applicable, rather than developing software completely from scratch. S-Cube is involved in the Repository CWG to integrate its Knowledge Model.

Until the 2007 Concertation Meeting, during which the "Repository of Reference Implementations and Grid Middleware" Collaboration Task was relaunched, there had been no efforts to set up and maintain such a repository. The BEinGRID project made available Gridipedia, its project repository, for external contributions from other projects and independents. In 2008 it was joined by the NEXOF-RA glossary and S-Cube Knowledge Model as providers of repository space. In the last year the Repositories Collaboration Task adopted a new collaboration infrastructure on the EC's 3S website and forum. A healthy number of discussion topics were opened to progress actions and facilitate discussion between Repository Working Group members.

The 2009 Collaboration Events took place on 10 June 2009 in Brussels, with a reasonable number of attendees. During the meeting, the Commission re-enforced the requirement for the Repositories work. Two key issues – sustainability and the creation of a meta-index linking the three repositories from a single interface – are currently under discussion by members of the group.

7.2.5   Contributions to the Service Architectures Collaboration Working Group

The collaboration in this Service Architectures CWG follows the activities of the NEXOF-RA project. NEXOF-RA, a NESSI Strategic Project, is building an Open Reference Architecture for service frameworks through a collaborative open process. Klaus Pohl (S-Cube Coordinator) is one of the chairs of the CWG.

The CWG held a session at the ICT Challenge 1.2 SSAI&E Internet of Services 2009 Collaboration Meeting for FP6 & FP7 projects, held in Brussels on the days 10-11 June 2009. At this session was given an S-Cube presentation on "Overall Research Issues in Service Architecture - An S-Cube Perspective" prepared by the S-Cube members Andreas Metzger, Klaus Pohl and Marco Pistore and presented by the latter during the Collaboration event.

7.2.6 Contributions to the Service Engineering Collaboration Working Group

The Service Engineering CWG is lead by Schahram Dustdar (leader of WP-SoE-1.1 "Virtual Campus"). The objective of this CWG is to enable the development of a joint research agenda for the area of Service Engineering.

The CWG is currently in the process of editing the book "Service Engineering - European Research Results" (for more information see Section 4.3).

7.2.7 Contributions to the Standards Collaboration Working Group

S-Cube partners are currently involved in several standardization bodies like OASIS, W3C, OMG, NIST, ISO, GGF/OGF. However, S-Cube will not pursue its own standardization initiatives but rather collaborate with NESSI to achieve this purpose. More specifically, work on standardization as stated in the DoW, will be performed through the European Technology Platform NESSI. This implies that S-Cube partners involved in standardization efforts will closely work together and align their activities with the industrial members of NESSI.

During current reporting period, S-Cube partners did not initiate any particular standardization activity based on S-Cube results.

8 International Master in Service Engineering

Many experts see the explosive growth in services as the next major revolution in the world economy. As service economies continue to expand and powerful digital communications networks – notably the Internet – evolve rapidly, companies are transforming from regional businesses to globally integrated enter-
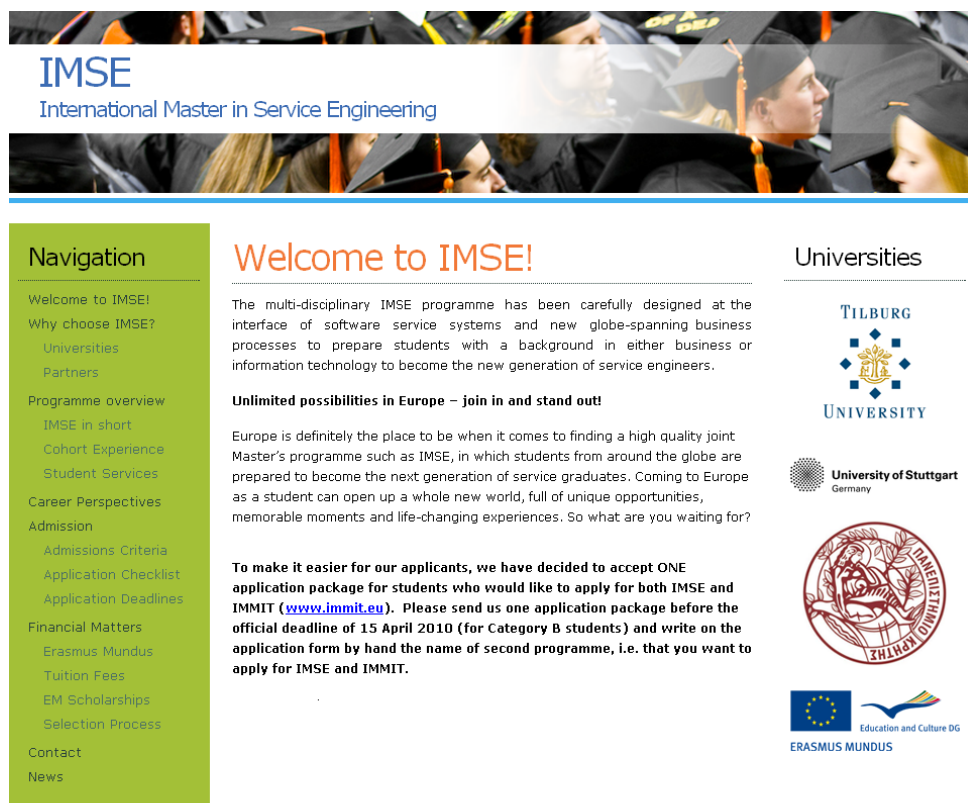

Figure 7: The IMSE's Web Portal

prises, shortly referred to as service networks. In the light of these developments, there is a quickly growing need for new multi-disciplinary teaching programmes that are designed at the interface of software service systems and new globe-spanning business processes to prepare students to become the new generation of T-shaped service engineers. S-Cube has acknowledged the critical need for such a programme and proposed a new two-year Master programme in Service Engineering, named the International Master in Service Engineering (IMSE) (see Figure 7), to the EC's directorate of education and training early in 2009. Given restrictions imposed by the EC, only three S-Cube members could work on a new Masters programme, viz. UoC, USTUTT and Tilburg (Coordinator). The remaining S-Cube partners will be involved in IMSE though the associate membership of the S-Cube project in the IMSE consortium.

In July 2009, IMSE was selected by the European Commission to be added to the programs available under the EU's Erasmus Mundus initiative for stronger European co-operation and international ties in higher education. Being selected as Erasmus Mundus course allows the IMSE consortium to offer a number of Erasmus Mundus scholarships to top-ranked students from "third countries" and to "scholars" (academics) to teach or carry out research. For example, the EU will grant 18 scholarships for the first IMSE cohort; 10 for non-EU and 8 for EU-students.

The IMSE programme is organised as follows. After spending a kick-off at the summer school, students spend a semester in Germany (USTUTT), followed by Greece (UoC) and the Netherlands (Tilburg). The final semester is devoted to thesis work, which includes an internship in an international company or research institute. Upon completion, students earn a joint Master degree in Service Science.

IMSE is delivered in close cooperation with a number of top quality research institutes and universities, such as UC Berkeley (USA), the University of New South Wales (Australia), Tsinghua University (China) and international companies like ForthNet, IBM, Software AG, Accenture and PriceWaterhouseCoopers. This not only guarantees a curriculum that incorporates the latest developments in the field of service science and service engineering, but also caters for a global marketing of the program.

The marriage between the research-oriented Network of Excellence S-Cube and the educational programme IMSE and the IMSE educational program is highly synergistic. Firstly, IMSE is a perfect vehicle for sharing S-Cubes scientific insights with the upcoming generation of new software service engineers. Additionally, the combination of the S-Cube Knowledge Model and the S-Cube Virtual Campus will provide the knowledge backbone of IMSE: a virtual environment where scholars, lecturers and students will share lecture slides, notes, articles, white papers, contacts and so on. Last, but not least, the SSAI&E Summer School (see also Section 7.2.3) will become an essential educational component in IMSE's programme. In the second year of the programme the IMSE students will participate in the summer school to gain the latest insights in software services and systems, while in the second year of the programme the students will defend their thesis at the summer school. In this way, the summer school will become a place where first- and second year students will meet each other to share experiences with other students from around the globe.

9   Conclusions

In its second year, S-Cube has been disseminating its results in a variety of ways. The S-Cube partners have co-organised and participated to 15 events, including (but not limited to) conferences, workshops and summer schools, in which they have presented S-Cube and its scientific results.

The S-Cube partners were instrumental in the creation of the "Services Science" subline of Springer's Lecture Notes in Computer Science (LNCS). Moreover, S-Cube is in the process of producing a book that surveys the state of the art of its research areas, with another book focusing on Service Engineering resulting from the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Service Engineering Collaboration Working Group (CWG).

Regarding collaboration with other EC FP6 and FP7 projects, S-Cube uses the commission's preferred method of the SSAI&E CWGs. S-Cube participates in 7 CWG, 3 of them led by S-Cube members. Outstanding among the achievements resulting from the participation to the CWGs is the successful

series of the SSAI&E Summer Schools organised by the S-Cube participants. Every year, the SSAI&E Summer School has more than a hundred attendees and brings together distinguished experts on software and services, graduate students, young researchers and professionals from leading academic, research and industrial organizations.

The International Master in Service Engineering (IMSE) organised by S-Cube partners is also an excellent outlet for S-Cubes scientific insights. Relying on the combination of the S-Cube Knowledge Model and the S-Cube Virtual Campus as knowledge infrastructure, IMSE it will contribute to shape the upcoming generation of software service engineers.

Finally, S-Cube also pursues actively the dissemination of its scientific results by issuing newsletters that are distributed in the most relevant conferences in the area of Service Science (e.g. ICSOC/ServiceWave). On the Web, S-Cube is present with its Web Portal, which in the last year has achieved remarkable improvements in terms of visibility under all aspects (unique visitors, page views, page rank, etc).

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[2] Thomas Erl. *SOA Principles of Service Design (The Prentice Hall Service-Oriented Computing Series from Thomas Erl)*. Prentice Hall PTR, Upper Saddle River, NJ, USA, 2007.

[3] Christos Nikolaou and Marina Bitsaki. Definition of strategy for community outreach. Deliverable CD-SoE-1.2.3, S-Cube Consortium, September 2009.

[4] Elisabetta Di Nitto, Valentina Mazza, and Andrea Mocci. Collection of industrial best practices, scenarios and business cases. Deliverable CD-IA-2.2.2, S-Cube Consortium, May 2009.

[5] Barbara Pernici, Andreas Gehlert, Marco Pistore, Pierluigi Plebani, and George Spanoudakis. Proceedings of the ICSOC-ServiceWave workshop on Industrial Experiences for Service Oriented Computing (IE4SOC). Technical report, Politecnico di Milano, 2009. http://www.s-cube-network.eu/ ie4soc_files/IE4SOCproceedings.pdf.

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[7] Willem-Jan van den Heuvel and Mike P. Papazoglou. Collaboration plan for joint activities with ict ssai&e projects. Deliverable CD-SoE-1.2.2, S-Cube Consortium, 2008.

A   EU ICT Projects Mentioned in the Deliverable

ALIVE: http://www.ist-alive.eu/

BREIN: http://www.eu-brein.com/

EGEE: http://www.eu-egee.org/

EDGeS: http://edges-grid.eu/

COMPAS: http://www.compas-ict.eu/

DIVA: http://www.ict-diva.eu/

GREDIA: http://www.gredia.eu/

ICS-FORTH: http://www.ics.forth.gr/

IRMOS: http://www.irmosproject.eu/

MOST: http://www.most-project.eu/

NEXOF-RA: http://www.nexof-ra.eu/

PERSIST: http://www.ict-persist.eu/

plugIT: http://www.ics.forth.gr/isl/projects/projects_individual.jsp?ProjectID=58

ROMULUS: http://www.ict-romulus.eu/

SeCSE: http://www.secse-project.eu/

SHAPE: http://www.shape-project.eu/

SLA@SOI: http://sla-at-soi.eu/

SOA4ALL: http://www.soa4all.eu/

B   List of Joint Publications

Reference	Partners involved (Short name)
Elisabetta Di Nitto, Dimka Karastoyanova, Andreas Metzger, Michael Parkin, Marco Pistore, Klaus Pohl, Fabrizio Silvestri, and Willem-Jan Van den Heuvel. S-Cube: Addressing multidisciplinary research challenges for the internet of services. In Towards the Future Internet: A European Research Perspective, Amsterdam, 2009. IOS Press.	POLIMI, US-TUTT, UniDue, Tilburg, FBK, CNR
Branimir Wetzstein, Philipp Leitner, Florian Rosenberg, Ivona Brandic, Frank Leymann, and Schahram Dustdar. Monitoring and analyzing influential factors of business process performance. In Proceedings of the 13th IEEE International Enterprise Distributed Object Computing Conference (EDOC09), Auckland, New Zealand, 2009.	USTUTT, TUW
Willem-Jan Van den Heuvel, Olaf Zimmermann, Frank Leymann, Patricia Lago, Ina Schieferdecker, Uwe Zdun, and Paris Avgeriou. Software service engineering: Tenets and challenges. In Proceedings of ICSE 2009 Workshop - Principles of Engineering Service Oriented Systems (PESOS). IEEE Computer Society, May 2009.	Tilburg, USTUTT, VUA, TUW
Andreas Gehlert, Olha Danylevych, and Dimka Karastoyanova. From requirements to executable processes - a literature study. In Proceedings of the 5th International Workshop on Business Process Design (BPD 2009), Ulm, Germany, 7 September 2009.	USTUTT, UniDue
Qing Gu, Patricia Lago, and Elisabetta Di Nitto. Guiding the service engineering process: the importance of service aspects. In 2nd IFIP WG5. 8th Workshop on Enterprise Interoperability (IWEI 2009), Valencia, Spain, 2009.	VUA, POLIMI
Attila Kertesz, Gabor Kecskemeti, and Ivona Brandic. An SLA-based resource virtualization approach for on-demand service provision. In Proceedings of the 3rd International Workshop on Virtualization Technologies in Distributed Computing (VTDC 09). New York, NY, USA, 2009	SZTAKI, TUV
Kyriakos Kritikos and Dimitris Plexousakis. Mixed-integer programming for qos-based web service matchmaking. IEEE Transactions on Services Computing, 2(2):122139, 2009. ISSN 1939-1374.	POLIMI, UOC
Konstantinos Zachos, Christos Nikolau, Pantelis Petridis, George Stratakis, Manolis Voskakis, and Eyaggelos Papathanasiou. Enhancing service network analysis and service selection using requirements-based service discovery. In 1st International Conferences on Advanced Service Computing, Service Computation 2009. Athens, Greece, November 2009	CITY ,UOC
Luciano Baresi, Sam Guinea, Marco Pistore, and Michele Trainotti. Dynamo + Astro: An integrated approach for BPEL monitoring. In Proceedings of the IEEE 7th International Conference on Web Services (ICWS 2009), 2009.	FBK, POLIMI
Antonio Bucchiarone, Cinzia Cappiello, Elisabetta Di Nitto, Raman Kazhamiakin, Valentina Mazza, and Marco Pistore. Design for adaptation of service-based applications: Main issues and requirements. In Proceedings of the 5th International Workshop on Engineering Service-Oriented Applications: Supporting Software Service Development Lifecycles (WESOA), 2009.	FBK, POLIMI

Reference	Partners involved (Short name)
Raman Kazhamiakin, Branimir Wetzstein, Dimka Karastoyanova, Marco Pistore, and Frank Leymann. Adaptation of service-based applications based on process quality factor analysis. In Proceedings of the 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+), 2009.	USTUTT, FBK
Barbara Pernici, Andreas Gehlert, Marco Pistore, Pierluigi Plebani, and George Spanoudakis, editors. Proceedings of the ICSOC/ServiceWave Workshop on Industrial Experiences for Service Oriented Computing (IE4SOC). Technical report Politecnico di Milano, Dipartimento di Elettronica e Informazione, n. 2009/71, Stockholm, Sweden, 23 November 2009.	POLIMI, UniDue, FBK, CITY

C   List of Presentations and Talks

Conference/Forum	Presenter	Title/Reference
ICEIS 2009	Barbara Pernici	"Invited talk on the Design of Adaptive Web Services. 11th International Conference on Enterprise Information Systems. May 2009, Milan, Italy.
WISS'09	Florian Rosenberg	"Towards Composition as a Service - A Quality of Service Driven Approach." IEEE Workshop on Information and Software as Service (WISS'09), co-located with the 25th International Conference on Data Engineering (ICDE'09). March 2009. Shanghai, China.
Future of the Internet Assembly	Andreas Metzger	"Service Engineering Challenges on Internet Scale Systems of Systems: An S-Cube Perspective." Panel Discussion on "Internet-scaled System of Systems." Future of the Internet Assembly. May 2009. Prague, Czech Republic.
PESOS 2009	Baryiannis Georgios	George Baryannis, Dimitris Plexousakis: "The Frame Problem in Web Service Specifications." Workshop on Principles of Engineering Service Oriented Systems (PESOS 2009). May 2009. Vancouver, Canada.
ICNS 2009	Branimir Wetzstein	Branimir Wetzstein, Steve Strauch, Frank Leymann: "Measuring Performance Metrics of WS-BPEL Service Compositions." In Proceedings of 5th International Conference on Networking and Services (ICNS 2009). April 2009. Valencia, Spain.
ICIW 2009	Olha Danylevych	Olha Danylevych, Dimka Karastoyanova, Frank Leymann: "Optimal Stratification of Transactions." In Proceedings of the 4th International Conference on Internet and Web Applications and Services (ICIW 2009). May 2009. Venice/Mestre, Italy.
PESOS 2009	Patricia Lago	Willem-Jan van den Heuvel, Olaf Zimmermann, Frank Leymann, Patricia Lago, Ina Schieferdecker, Uwe Zdun, Paris Avgeriou: "Software Service Engineering: Tenets and Challenges." Workshop on Principles of Engineering Service Oriented Systems (PESOS 2009). May 2009. Vancouver, Canada.
University of Duisburg-Essen	Neil Maiden	Maiden N.A.M.: "Using Codified HCI Knowledge in Service-Based Applications". Department Presentation, 2009.
ICSE 2009	Brice Morin	Brice Morin, Olivier Barais, Grégory Nain, Jean-Marc Jézéquel: "Taming Dynamically Adaptive Systems using models and aspects." In Proceedings of the 1st International Conference on Software Engineering (ICSE 2009). May 2009. Vancouver, Canada.

Conference/Forum	Presenter	Title/Reference
CAL'09	Grégory Nain	Grégory Nain, Olivier Barais, Régis Fleurquin: "EntiMid: un middleware aux services de la maison." In 3ème Conférence Francophone sur les Architectures Logicielles (CAL'O9). March 2009. Nancy, France.
SSAI&E Summer School	Andreas Metzger	"Quality Assurance for Service-based Systems: From Software Engineering to Service Engineering," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School, Crete, June, 2009.
Internet of Services 2009 Collaboration Meeting	Andreas Metzger	"Service Orchestration Challenges: An S-Cube Perspective," Presentation at the Internet of Services 2009 Collaboration Meeting, FIA Session. June 2009. Brussels, Belgium.
Internet of Services 2009 Collaboration Meeting	Andreas Metzger	"Adaptation of Service-Based Systems based on Requirements Engineering and Online Testing," Presentation at the Internet of Services 2009 Collaboration Meeting, Service Engineering Session. June 2009. Brussels, Belgium.
Future of the Internet Assembly	Andreas Metzger	"Service Engineering Challenges on Internet Scale Systems of Systems: An S-Cube Perspective," Panel Discussion in Future of the Internet Assembly, Internet-scaled System of Systems Session. May 2009. Prague, Czech Republic .
CAiSE Conference, Amsterdam, June 2009.	Klaus Pohl, Andreas Metzger	"Towards the Next Generation of Service-Based Systems: The S-Cube Research Framework," Keynote.
SSAI&E collaboration event	Marco Pistore	"S-Cube - Overall Research Issues in Service Architecture," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) collaboration event on Internet of Services: Internet of Services Technical Collaboration meeting for FP-6 & FP-7 projects. 11 June 2009. Brussels, Belgium.
Joint EGEE and EDGeS Summer School on Grid Application Support.	Nicola Tonellotto	Nicola Tonellotto: "S-CUBE and the Future Internet Challenges." Joint EGEE and EDGeS Summer School on Grid Application Support. July 2009. Budapest, Hungary.
VTDC09	Attila Kertesz	Attila Kertesz, Gabor Kecskemeti, and Ivona Brandic: "An SLA-based resource virtualization approach for on-demand service provision," Presentation.
SSAI&E Summer School	Miklos Kozlovszky	"Service Grid Architectures & Tools," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School, Crete, June 2009.

Conference/Forum	Presenter	Title/Reference
Joint EGEE and EDGeS Summer School on Grid Application Support.	Attila Kertesz	"Autonomic Resource Virtualization in Cloud-like Environments," Presentation.
SSAI&E Summer School	Kyriakos Kritikos	"Constraint-Based QoS-Aware Service Adaptation," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School, Crete, June, 2009.
IEEE CEC 2009	Pierluigi Plebani	Marco Comuzzi, Kyriakos Kritikos, Pierluigi Plebani: "A Semantic Based Framework for Supporting Negotiation in Service Oriented Architectures." 2009 IEEE Conference on Commerce and Enterprise Computing (CEC 2009). 20-23 July 2009. Vienna, Austria.
ICWE 2009	Martin Treiber	Martin Treiber, Hong Linh Truong, Schahram Dustdar: "SOAF - Design and Implementation of a Service-Enriched Social Network." In Proceedings of the 9th International Conference on Web Engineering (ICWE 2009). 24-26 June 2009. San Sebastián, Spain.
CAiSE 2009. Amsterdam, Netherlands	Vasilios Andrikopoulos	Vasilios Andrikopoulos, Salima Benbernou, Mike P. Papazoglou: "Evolving Services from a Contractual Perspective." In Proceedings of the 21st International Conference on Advanced Information Systems Engineering (CAiSE 2009). 8-12 June 2009. Amsterdam, The Netherlands.
SSAI&E Summer School	Dimka Karastoyanova	"Aspects and BPEL," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School, Crete, June, 2009.
SSAI&E Summer School	Frank Leymann	"Cloud Computing," Presentation at the Service and Software Architectures, Infrastructures and Engineering (SSAI&E) Summer School, Crete, June, 2009.
MONA+ workshop, collocated with ICSOC 2009	Asli Zengin	Raman Kazhamiakin, Marco Pistore and Asli Zengin. "Cross-layer Adaptation and Monitoring of Service-Based Applications." In Proceedings of the 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+). 24 November 2009. Stockholm, Sweden.
WESOA 2009, collocated with ICSOC 2009	Antonio Bucchiarone	Antonio Bucchiarone, Cinzia Cappiello, Elisabetta Di Nitto, Raman Kazhamiakin, Valentina Mazza and Marco Pistore: "Design for Adaptation of Service-Based Applications: Main Issues and Requirements." In Proceedings of the 5th International Workshop on Engineering Service-Oriented Applications (WESOA09) in conjunction with ICSOC/ServiceWave. 23 November 2009. Stockholm, Sweden.

Conference/Forum	Presenter	Title/Reference
WICSA/ECSA 2009 conference	Antonio Bucchiarone	Antonio Bucchiarone, Patrizio Pelliccione, Charlie Vattani and Olga Runge. Self-Repairing Systems Modeling and Verification using AGG. In Proceedings of the 2009 Joint Working IEEE/IFIP Conference on Software Architecture & European Conference on Software Architecture (WICSA/ECSA 2009), Pages 181-190, 2009.
MoDELS 2009	Sagar Sen	Sagar Sen, Naouel Moha, Benoit Baudry, Jean-Marc Jézéquel: Meta-model Pruning. In Proceedings of the 12th International Conference on Model Driven Engineering Languages and Systems (MoDELS 2009). Denver, CO, USA, 4-9 October 2009.
IE4SOC 2009	Pierluigi Plebani	"The S-Cube approach to the modelling of industrial case studies."
WESOA 2009, collocated with ICSOC 2009	Sonja Zaplata	Sonja Zaplata, Kristian Kottke, Matthias Meiners, Winfried Lamersdorf: "Towards Runtime Migration of WS-BPEL Processes." In Proceedings of the 5th International Workshop on Engineering Service-Oriented Applications (WESOA09) in conjunction with ICSOC/ServiceWave. 23 November 2009. Stockholm, Sweden.
WESOA 2009, collocated with ICSOC 2009	Michele Mancioppi	Michele Mancioppi, Mikhail Perepletchikov, Caspar Ryan, Willem-Jan van den Heuvel, Mike P. Papazoglou: "Towards a Quality Model for Choreography." In Proceedings of the 5th International Workshop on Engineering Service-Oriented Applications (WESOA09) in conjunction with ICSOC/ServiceWave. 23 November 2009. Stockholm, Sweden.
I3E 2009	Sonja Zaplata	Sonja Zaplata, Viktor Dreiling, Winfried Lamersdorf: "Realizing Mobile Web Services for Dynamic Applications." In Proceedings of the 9th International IFIP Conference on e-Business, e-Services, and e-Society (I3E 2009). 23 September 2009. Nancy, France.
ICSOC/ServiceWave 2009	Vasilios Andrikopoulos	"The S-Cube Knowledge Model," Demonstration session
2nd EU-Japan Symposium on "Future Internet" and "New-Generation Network"	Michael Parkin	"Service Analysis and Design Considerations," Invited talk. Services Session of 2nd EU-Japan Symposium on "Future Internet" and "New-Generation Network". Tokyo, Japan. 14 October 2009.

Conference/Forum	Presenter	Title/Reference
ComputationWorld09	Konstantinos Zachos	K. Zachos, C. Nikolau, P. Petridis, G. Stratakis, M.Voskakis and E. Papathanasiou: Enhancing Service Network Analysis and Service Selection using Requirements-based Service Discovery, 1st International Conferences on Advanced Service Computing, Service Computation 2009, Athens, Greece. November 2009.
MONA+ workshop, collocated with IC-SOC 2009	Ricardo Contreras	K. Mahbub and A. Zisman: "Replacement Policies for Service-Based Systems." In Proceedings of the 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+). 24 November 2009. Stockholm, Sweden.
BPD 2009	Olha Danylevych	Andreas Gehlert, Olha Danylevych, Dimka Karastoyanova: "From Requirements to Executable Processes - A Literature Study." In Proceedings of the 5th International Workshop on Business Process Design (BPD '09). 7 September 2009. Ulm, Germany.
ICSOC 2009 Conference	Dimka Karastoyanova	Tobias Anstett, Dimka Karastoyanova, Frank Leymann, Ralph Mietzner, Ganna Monakova, Daniel Schleicher, Steve Strauch: "MC-Cube: Mastering Customizable Compliance in the Cloud." In Proceedings of the 7th International Joint Conference on Service-Oriented Computing (ICSOC/ServiceWave 2009). Stockholm, Sweden. 24-27 November 2009.
Future of the Internet Assembly, Stockholm, November 2009	Dimka Karastoyanova	"Service Orchestration" in the session "Orchestration across things, services and content," S-Cube Representative
MONA+ workshop, collocated with IC-SOC 2009	Dimka Karastoyanova	Raman Kazhamiakin, Branimir Wetzstein, Dimka Karastoyanova, Marco Pistore, Frank Leymann: "Adaptation of Service-Based Applications Based on Process Quality Factor Analysis." In Proceedings of the 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+). 24 November 2009. Stockholm, Sweden.
Mashups09	Martin Treiber	Martin Treiber, Kyriakos Kritikos, Daniel Schall, Dimitris Plexousakis, Schahram Dustdar: "Modeling Context-aware and Socially- enriched Mashups." In Proceedings of the 3rd International Workshop on Web APIs and Services Mashups (Mashups'09) at OOPSLA 2009, 25 October 2009, Orlando.

Conference/Forum	Presenter	Title/Reference
MONA+ workshop, collocated with IC-SOC 2009	Martin Treiber	Martin Treiber, Vasilios Andrikopoulos, Schahram Dustdar: "Service Fitness in Service Networks." In Proceedings of the 2nd Workshop on Monitoring, Adaptation and Beyond (MONA+). 24 November 2009. Stockholm, Sweden.
NFPSLAM-SOC'09	Philipp Leitner	Philipp Leitner, Branimir Wetzstein, Florian Rosenberg, Anton Michlmayr, Schahram Dustdar, Frank Leymann: "Runtime Prediction of Service Level Agreement Violations for Composite Services." In Proceedings of the 3rd Workshop on Non-Functional Properties and SLA Management in Service-Oriented Computing (NFPSLAM-SOC'09). 23 November 2009. Stockholm, Sweden.
EDOC 2009	Florian Rosenberg	Branimir Wetzstein, Philipp Leitner, Florian Rosenberg, Ivona Brandic, Schahram Dustdar, Frank Leymann: "Monitoring and Analyzing Influential Factors of Business Process Performance." In Proceedings of the 2009 IEEE International Enterprise Distributed Object Computing Conference (EDOC 2009). 01 - 04 September 2009. Auckland, New Zealand.
PDMC 2009	Attila Kertesz	Attila Kertesz, Zsolt Nemeth: "Formal Aspects of Grid Brokering." In Proceedings of the 8th International Workshop on Parallel and Distributed Methods in Verification. 4 November 2009. Eindhoven, The Netherlands.
SIKS Course on System architecture and modeling	Michele Mancioppi	Michele Mancioppi: "Modeling Service-Enabled Processes: From Business Processes to Service Compositions." Presentation at the SIKS Course on System architecture and modeling. 10 December 2009. Vught, The Netherlands.
ASSIST Colloquium	Michele Mancioppi	Michele Mancioppi: "Modeling Service-Enabled Processes: From Business Processes to Service Compositions." ASSIST Colloquium. 15 January 2009. Enschede, The Netherlands.