

4th European Conference ServiceWave 2011

26th-28th October, Poznan, Poland

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.

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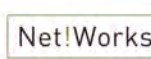
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Message from the Chairs

It is our pleasure to welcome you to the 4th European Conference ServiceWave 2011, held in Poznan, Poland, October 26-28. ServiceWave 2011 is the fourth edition of the ServiceWave conference series and the second edition to be part of the Future Internet week. The ServiceWave conference series is the premier European forum for practitioners, researchers, and educators to discuss the most recent innovations, trends, experiences and concerns and to set the agenda for research on the Future Converged Internet of Content (IoC), Services (IoS), Things (IoT) and related network of the future (NoF) technologies.



Klaus Pohl,
General Chair

ServiceWave fosters cross-community excellence by bringing together industrial and academic experts from various disciplines such as cloud computing, business process management, distributed systems, computer networks, wireless & mobile communication networks, grid computing, networking, service engineering, service science and software engineering.

This year's scientific track especially sought reports of novel ideas and techniques that enhance service-oriented computing as well as reflections on current research and industrial practice towards a converged Future Internet by scoping the Call for Papers around the following four topics:

- **Business Services:** Dealing ideas and techniques that allow expressing, understanding, representing, and managing business processes in a service-oriented manner
- **Cloud Computing:** Discussing the potential of emerging techniques and technologies to contribute to a European Cloud Computing Strategy
- **Security, Privacy and Trust:** Taking us from a fragile current internet to a trustworthy Future Internet bridging the virtual and physical worlds
- **Service Engineering Fundamentals:** Dealing with topics around fundamental engineering techniques that allow us to move towards a Future Internet Service Infrastructure

The ServiceWave programme features high quality contributions from the above mentioned research areas.

In addition to the presentations of the peer-reviewed paper (each submitted paper was reviewed by at least three reviewers) the ServiceWave programme includes 13 invited presentations. The papers of both types of presentations are included in proceedings and will be presented in 9 sessions, whereas the Thursday of the conference is dedicated to the Scientific Track.

ServiceWave 2011 will be opened on Wednesday afternoon by several high-quality presentations on relevant topics for the Future Converged Internet.



Rainer Zimmermann will speak about the European Commission's view on "Software and Services in Horizon 2020" and the keynote speakers will provide an industry view on the relevance of software and services in the Future Converged Internet as well as industry-relevant challenges, setting a context for discussions throughout the conference. Additionally there will be a session about the FI-PPP in which three use case projects take up the opportunity to present their most recent results.



Julien Vayssière,
Demonstration Chair

Moreover, there will be a joint ServiceWave, FIA and FIRE demonstration evening, for which 14 demonstrations were accepted based on a two-page extended abstract as well as a short video of the actual demonstration. Accepted demonstrations cover a wide spectrum of technology and application domains.



Andrea Zisman, Ignacio Llorente,
Mike Surridge, and Witold Abramowicz
(Scientific Track Chairs)

Besides the main conference, there will be scientific workshops, full- and half-day: EDBPM, OCS, CT4CS, NESSOS and WAS4FI. We would like to thank the organizers of the two full day workshops and OCS as well as the four half day workshops CT4CS, NESSOS, MONA+ and WAS4FI, which are held on the last day of the conference, for their effort. We also thank Michel Cezon and Andreas Metzger for managing the workshop selection process.

Above all, ServiceWave is a collaborative effort. First of all, we would like to thank the authors for providing the content of the programme. We would like to express our gratitude to the Programme Committee and external reviewers, who worked very hard in reviewing papers and providing suggestions for their improvements.

We also thank, Josema Cavanillas for serving as Industry Track Chair and the speakers of the FI-PPP session allowing us to provide an interesting conference opening. Furthermore, we thank the organising team from Poznan for hosting the Future Internet week and helping us in setting up

the next edition of ServiceWave, the NESSI team including Veronique Pevtschin, Barbara Pirillo and Sophie Debeck, which again have done a great job in promoting the event and last but not least the organisational team from paluno including Selda Santas, Richard Pohl, Andre Heuer and Vanessa Stricker for making this edition happening.

Finally, we thank all the sponsors of ServiceWave 2011 who have contributed generously to the smooth running of the working conference itself.

We hope that you will enjoy participating in the event as much as we enjoyed preparing it, and that you will bring back home nice memories and inspirations.

Andrea Zisman
Ignacio Llorente
Mike Surridge
Witold Abramowicz
(Scientific Track)

Julien Vayssière
(Demonstration Chair)

Klaus Pohl
(General Chair)

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ServiceWave 2011 Organisers

The ServiceWave conference series is organised through a collaboration between academia and industry.

The organisers include the NESSI European Technology Platform (ETP) and S-Cube the academic network of excellence, which both dedicated to software and services. Financial and operational support is provided by Paluno – the Ruhr Institute for Software Engineering – at University of Duisburg- Essen. ServiceWave is also organised in collaboration with other ETPs active in the domain of Information and Communication Technologies (ITC) – Net!Works, EPoSS, ISI, NEM and the national Spanish technology platform INES, EfiA, the SOFI research project and in collaboration with ICSOC, the International Conference on Service Oriented Computing.

For its fourth edition, ServiceWave 2011 is hosted in Poznan, Poland at the Technical University of Poznan as part of the Future Internet week, which is organized by PSNC, the Poznan Supercomputing and Networking Center.

General Chair

Klaus Pohl – paluno - University of Duisburg-Essen, Germany

Scientific Chairs

Witold Abramowicz – Poznan University of Economics, Poland
Ignacio M. Llorente – Complutense University of Madrid, Spain
Mike Surridge – IT Innovation, UK
Andreas Zisman – City University London, UK

Demonstration Chair

Julien Vayssiere - Smart Services CRC, Australia

Workshop Chairs

Andreas Metzger - paluno - University of Duisburg-Essen, Germany
Michel Cezon - INRIA, France

Industry Track Chair

Jose Maria Cavanillas - Atos, Spain

Organisational Chair

Vanessa Stricker - paluno - University of Duisburg-Essen, Germany

Organisational Team

Veronique Pevtschin - Engineering Ingegneria Informatica, Italy
Barbara Pirillo - Engineering Ingegneria Informatica, Italy
Sophie Debeck - Engineering International Belgium, Belgium
Andre Heuer - paluno - University of Duisburg-Essen, Germany
Selda Saritas - paluno - University of Duisburg-Essen, Germany
Daniel Schröter - paluno - University of Duisburg-Essen, Germany

Programme & Demonstration Committees

Please check www.servicewave.eu for the full lists of committee members.

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SIEMENS

Siemens – A global partner of innovations

Siemens AG (Berlin and Munich) is a global powerhouse in electronics and electrical engineering, operating in the industry, energy and healthcare sectors. For over 160 years, Siemens has stood for technological excellence, innovation, quality, reliability and internationality.

Innovations are one of the most important pillars of our business success. In fiscal 2010, we invested € 3.846 billion in research and development, maintaining our R&D outlays at a high level despite the financial and economic crisis. We developed new key technologies and brought cutting-edge innovations to market readiness. Breakthroughs included the commissioning in China of the world's first high-voltage direct-current transmission system



to transport electricity at a voltage of 800 kilovolts, and the market launch of the latest generation of gas turbines in the U.S. When operated in a combined cycle with steam turbines, our new gas turbines achieve a record-breaking efficiency of over 60 percent. By comparison, the average efficiency of combined-cycle

power plants in the U.S. is currently less than 40 percent. These are just two examples of successful innovations from our Environmental Portfolio. Other ecofriendly technologies developed by our researchers include new solutions for smart grids, electric mobility (from drives to rapid battery recharge stations), organic light-emitting diodes, solar energy, CO₂ separation for power plants, and power storage units for Renewable energies. R&D for our Environmental Portfolio focuses primarily on increasing the efficiency of power generation (whether renewable or conventional), low-loss power transmission, the expansion of smart grids, and efficient energy utilization in transportation, industry, building technology and lighting. Our researchers are also working on the further development of water and air pollution controls and drinking water treatment systems that use, for example, new membrane technologies.

Research and development

Siemens has roughly 30,100 R&D employees, of whom 12,800 are in Germany and 17,300 in other countries such as the U.S., China, Austria, India, Slovakia, Switzerland, the UK, Croatia, Sweden, Denmark, the Czech Republic and France. To remain at the cutting edge of innovation, we participate every year in over 1,000 research partnerships with universities, research institutes and industrial partners around the world.

Corporate Technology (CT), our central research unit, works hand-in-hand with the R&D teams at our Sectors and Divisions. With major research centers in Germany, the U.S., Austria, Slovakia, Russia, India, China, Japan and Singapore, CT employs over 5,000 people in a worldwide network of innovation.

A Network of Expertise

The goal of Corporate Technology (CT) and its worldwide network of experts is to act as a powerful innovation partner for Siemens' business units. The organization provides expertise regarding strategically important areas to ensure the company's technological future, and to acquire patent rights that safeguard its business operations. Against the background of megatrends such as climate change, urbanization, globalization, and demographic change, CT focuses on innovations that have the potential to change the rules of the game over the long term in areas that interest Siemens.



Corporate Technology conducts research in some 50 technology fields, including materials and microsystems, production processes, security, software and engineering, energy systems and sensors. The unit also develops new solutions for automation, healthcare IT systems and imaging processes, information and communications technologies, and the extraction and processing of raw materials.

In its Global Technology Fields (GTFs), Corporate Technology brings together experts from globally operating research teams all over the world in order to pool their expertise and become a preferred innovation partner for the Siemens sectors. In addition, ten lighthouse projects (pp. 12-13) are investigating in which fields of research the innovative power of Siemens should be focused in particular over the long term. Current topics range from smart grids to electric mobility to energy storage, and from the use of CO₂ to the automatic generation of knowledge from self-learning systems. These projects involve researchers from various technology clusters and Siemens sectors, who work together in interdisciplinary teams.

Patents and research expenditures

The Siemens patent portfolio comprises more than 57,000 patents worldwide. In fiscal 2010, we were No. 3 in Germany, No. 2 in Europe and No. 13 in the U.S. in patent applications. In the same period, our employees submitted around 8,800 invention reports – about 40 per workday.

Co-operation and collaboration

Siemens enters into more than 1,000 partnerships with universities, research institutes, and industrial partners every year. About half of these partnerships involve Corporate Technology — and these collaborations are an indispensable means of developing strategically important technologies.

Exploiting service orientation is one of Siemens strategic goals. Siemens is a founding partner of the European Technology Platform NESSI (Networked European Software and Services Initiative). Reinhold Achatz, Corporate Vice President and Head of Siemens Corporate Research and Technologies, represents NESSI as chair of the board. As a partner in several projects Siemens contributes with its wide range of industrial expertise. Siemens focus areas are software and services, architectural patterns, virtualized infrastructures industrial use cases and standardization. In addition Siemens is a founding member of the European Future Internet Initiative which has been setup by sixteen major industrial European players in the ICT environment to shape the Future Internet activities in Europe together with the European Commission.

www.siemens.com

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Engineering Group is the largest Italian player in System Integration and is the market leader along the whole value chain of software production. Engineering operates through 5 Business Units supported by 6 Horizontal Competence Centres and a large Research & Innovation Division with 600 researchers active on R&D projects co financed by both Italian and European authorities. Engineering Group employs 6,200 people.

Engineering operates in all market segments – banks, insurance, industry, telecommunications, defence, healthcare, central and local public administration, utility and strategic consultancy – offering technological expertise to develop and manage complex information systems for more than 800 client companies.

Engineering Ingegneria Informatica also offers managed operations at the Pont Saint Martin Service Centre, a 12,000 m² data centre facility guaranteeing uninterrupted service 365 days of the year, 24 hours a day and which has reached Tier 3 in the quality standards and Uptime Institute security.

Over the three years 2006 to 2008, Engineering invested over 50 M€ in R&D and its Research and Innovation centre obtained major results in the relevant domains of services architectures, process security, information systems and business process modelling.

ENG also invests in major international partnerships including

- the open source consortium, OW2 of which Engineering is a founding member
- the European Technology Platform dedicated to software and services, NESSI, of which Engineering is a founding partner
- the European Technology Platform dedicated to networked and electronic media, NEM, of which Engineering is a member
- the European Organization Security association, of which Engineering is a member and coordinates the ICT Working Group focusing on secure solutions for critical infrastructures as well as the role of security in public and private procurement requirements
- the European Future Internet Initiative (and its evolution into the European Future Internet Alliance)

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ServiceWave 2011 is pleased to welcome its speakers



Reinhold Achatz

Corporate Vice President of Siemens AG, head of Corporate Research and Technologies, head of the Corporate Development Center.

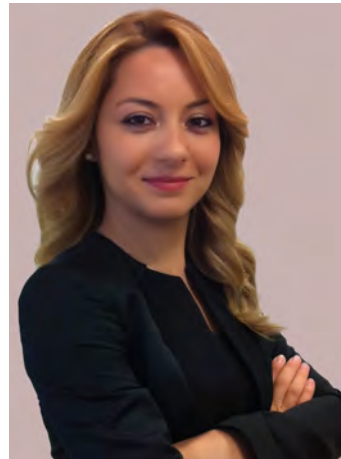
Keynote: Is Software & Service Research still need in 'Horizon 2020'? - An Industry Perspective

Reinhold Achatz is Corporate Vice President of Siemens AG and head of Corporate Research and Technologies and head of the Corporate Development Center. He is responsible for global corporate research and development at

Siemens with ca. 5,800 employees worldwide.

Dr Achatz holds a degree in Electrical Engineering (Dipl. Ing.), from the Friedrich-Alexander University in Erlangen-Nuremberg (1979), a Ph.D. in Information Technology in Mechanical Engineering (Dr. Ing.), from the Technical University of Munich (2009) and was awarded an honorary advisory professorship from the Tsinghua University in Beijing, China (2010).

In 1980, he joined Siemens AG Automation as a software engineer and held numerous management positions. In 2000, Dr Achatz joined Siemens Energy and Automation (SE&A) as vice president, served as a member of the Executive Committee and was responsible for US industrial automation and software business. In 2002, he was appointed vice president for Software and Engineering at Corporate Technology in Munich, responsible for software and engineering strategy, as well as the worldwide Software Initiative (SWI). He is a member of the Siemens Steering Committee Innovation and has been honoured as a "Siemens Top Innovator" for his outstanding innovations in software-based components for set-up, operations and execution accuracy of machine tools.



Duygu Öktem

TT Group R&D Manager
EU Joint Research

Keynote: Staying in the game: Strategies of Telecom Operators

Duygu Oktem received her BS in Computer Engineering from Anadolu University, Eskisehir, Turkey in 2005. She started working for the Ministry of Public Works and Settlement as software engineer. Then she joined The Scientific and Technological Research Council of Turkey (TUBITAK) and worked

in the EU Framework Programmes National Coordination Office as the contact point of EUREKA ICT Clusters (CELTIC, ITEA2 and CATRENE). During her years in TUBITAK she represented Turkey in EUREKA ICT Clusters, evaluated R&D projects submitted from Turkey, trained Turkish ICT firms about participating and managing multinational R&D Programmes. She joined Turk Telekom Group in 2009 and is currently working as R&D Manager in the Turk Telekom Group; responsible for EU joint research activities. She is also designing and coordinating R&D policy activities of Turk Telekom Group. She is the chair of Software Working Group in national Electric and Electronic Technology Platform, Technical Committee Member of EUREKA Eurogia+ cluster and Steering Committee Member of NEM European Technology Platform. She still studies MS degree on Information Systems in Middle East Technical University (METU) in Ankara.



Rainer Zimmermann

Head of Unit for Software & Service Architectures and Infrastructures. Directorate General for Information Society and Media, European Commission

Invited Talk: Software and Services in Horizon 2020

Rainer graduated in Engineering from the Technical University (TU) of Berlin in 1977 and obtained his Dr-Ing in 1985 from the same University. He worked from 1977 to 1985 as a researcher for the TU Berlin and the Fraunhofer Society. He then joined the Commission as a

Project Officer for projects in the fields of Production Engineering, High Performance Computing (1990) and Software (1992). In 1995 he became Head of Unit for Telematics between Administrations the IDA programme. After heading the Software and Systems unit (1999), the Unit for Nanoelectronics and Photonics (2005) and the Unit for Future Networks (2010) he is currently Head of Unit for Software & Service Architectures and Infrastructures of the Directorate General for Information Society and Media.

Programme

Wednesday, 26th October 2011 - Conference Opening

Registration opening hours: 09:00 - 10:00 & 13:00 - 17:30

Conference Opening & Welcome	
14:15 - 14:30	Room 1 Klaus Pohl: ServiceWave General Chair
Invited talk	
14:30 - 15:00	Room 1 Rainer Zimmermann: Software and Services in Horizon 2020
Invited Industrial Keynotes	
15:00 - 16:30	Room 1 Reinhold Achatz: Is Software & Service Research still need in 'Horizon 2020'? - An Industry Perspective Duygu Öktem: Staying in the game: Strategies of Telecom Operators
16:30 - 17:00	Coffee Break
FI-PPP Session	
17:00 - 18:30	Room 1 Business Services 1 Room 2 HOLA! Project Presentation
19:00 - 21:00	Demonstrations Evening Food and drinks will be served during the evening

Thursday, 27th October 2011- Scientific Track

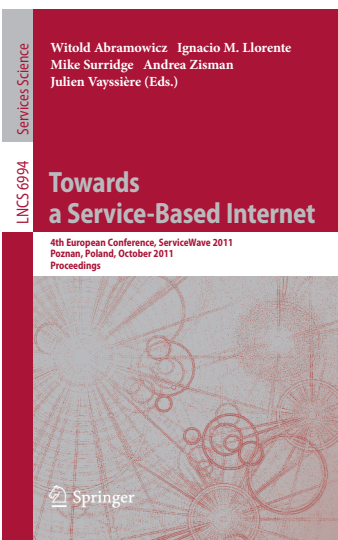
Registration opening hours: 08:30 - 17:00

09:30 - 11:00	Software Engineering Fundamentals 1 Room 1	Cloud Computing 1 Room 2
11:00 - 11:30	Coffee Break	
11:30 - 13:00	Software Engineering Fundamentals 2 Room 1	Cloud Computing 2 Room 2
13:00 - 15:00	Lunch	
15:00 - 16:30	Software Engineering Fundamentals 3 Room 1	Security Privacy and Trust 1 Room 2
16:30 - 17:00	Coffee Break	
17:00 - 18:30	Security Privacy and Trust 2 Room 1	Cloud Computing 3 Room 2
18:30-18:45	Conference Closing Room 1	
19:30	Gala Dinner The gala dinner takes place at the Archeological Museum Poznan and is sponsored by SIEMENS	

Friday, 28th October 2011- Scientific Workshops

Registration opening hours: 08:30 - 15:00

	EDBPM	WAS4FI	NESSOS
09:30 - 11:00	Room 94/2	Room 1	Room 2
11:00 - 11:30	Coffee Break		
	EDBPM cont.	WAS4FI cont.	NESSOS cont.
11:30 - 13:00	Room 94/2	Room 1	Room 2
13:00 - 15:00	Lunch		
	EDBPM cont.	OCS	CT4CS
15:00 - 16:30	Room 94/2	Room 1	Room 2
16:30 - 17:00	Coffee Break		
	EDBPM cont.	OCS cont.	CT4CS cont.
17:00 - 18:30	Room 94/2	Room 1	Room 2



ServiceWave 2011 research papers and demonstration abstracts are available in the conference proceedings published by Springer in the volume 6994 of the Lecture Notes in Computer Science Series:

“Towards a Service-Based Internet”

Proceedings 4th European Conference, ServiceWave 2011, Poznan, Poland, October 26-28, 2011

Editors:

Abramowicz, Witold; Llorente, Ignacio M.; Surridge, Mike; Zisman, Andrea; Vayssière, Julien

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Special Thanks to



The ServiceWave conference series is organised through a collaboration between academia and industry.

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

As S-Cube aims to integrate ideas from different research areas, the ServiceWave conference series provides the platform with an opportunity to disseminate and discuss innovative and integrated research ideas in order to bridge the gap between the grid computing, software engineering, business process management and service-oriented computing research communities.

www.s-cube-network.eu

Scientific Track Details Programme

The scientific programme of ServiceWave has been supported in parts by S-Cube (funded by the European Community's Seventh Framework Programme FP7/2007-2013 under Objective 1.2 'Services and Software Architectures, Infrastructures and Engineering'). Turn to page 9 for more information about S-Cube.

Wednesday, 26th October 2011

Business Services 1

Chaired by Witold Abramovicz

Adrian Paschke: A Semantic Rule and Event Driven Approach for Agile Decision-Centric Business Process Management (Invited)

Radosław Hofman: Web Services Trustworthiness Model (Invited)

The ServiceWave conference series is the premier European forum for practitioners, researchers, and educators to discuss the most recent innovations, trends, experiences and concerns and to set the agenda for research on 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 scientific track of ServiceWave 2011 is organized around 9 sessions on the 4 topics of Business Services, Cloud Computing, Security Privacy and Trust and Service Engineering Fundamentals bringing together different communities contributing to at least one central aspect of the Future Converged Internet

Thursday, 27th October 2011

Software Engineering Fundamentals 1 (9:30-11:00) <i>Chaired by Wolfgang Ziegler</i> Barbara Pernici: Adaptive services and energy efficiency (Invited) Valeria Cardellini, Valerio Di Valerio, Vincenzo Grassi, Stefano Iannucci and Francesco Lo Presti: A Performance Comparison of QoS-driven Service Selection Approaches Marco Abundo, Francesco Lo Presti and Valeria Cardellini: Optimal Admission Control for a QoS-aware Service-oriented System	Cloud Computing 1 (9:30-11:00) <i>Chaired by Erik Elmroth</i> Simon Ostermann, Radu Prodan and Thomas Fahringer: Integration of an event-based simulation framework into a scientific workflow execution environment for Grids and Clouds Gintautas Dzemyda, Virginijus Marcinkevicius and Viktor Medvedev: Large-Scale Multidimensional Data Visualization: A Web Service for Data Mining Dinh Khoa Nguyen, Francesco Lelli, Yehia Taher, Michael Parkin, Mike P. Papazoglou and Willem-Jan Van Den Heuvel: Blueprint Template Support for Engineering Cloud-based Services
Software Engineering Fundamentals 2 (11:30-13:00) <i>Chaired by Arian Zwegers</i> Krzysztof Kozłowski: Future Services (Invited) Eric Schmieders and Andreas Metzger: Preventing Performance Violations of Service Compositions using Assumption-based Run-time Verification Qing Gu, Michael Parkin and Patricia Lago: A Taxonomy of Service Engineering Stakeholder Types	Cloud Computing 2 (11:30-13:00) <i>Chaired by Ignacio Llorrente</i> Erik Elmroth: Self-Management Challenges for Multi-Cloud Architectures (Invited) Christine Morin: Virtual Execution Platform: Challenges in Being Part of a Cloud Federation (Invited) Dana Petcu: Portability and interoperability between Clouds: challenges and case study (Invited)
Software Engineering Fundamentals 3 (15:00-16:30) <i>Chaired by Barbara Pernici</i> Valerie Issany: Service Oriented Middleware for the Internet of Things: A Perspective (Invited) Andreas Metzger and Clarissa Cassales Marquezan: Future Internet Apps: The Next Wave of Adaptive Service-oriented Systems? Mirko Sonntag, Sven Hotta, Dimka Karastoyanova, David Molnar and Siegfried Schmauder: Using Services and Service Compositions to Enable the Distributed Execution of Legacy Simulation Applications	Security Privacy and Trust 1 (15:00-16:30) <i>Chaired by Antonio Garcia Vazquez</i> Micha Choras, Rafa Kozik, Rafa Piotrowski, Juliusz Brzostek and Witold Ho lubowicz: Network Events Correlation for Federated Networks Protection System Alvaro Arenas, Benjamin Aziz, Szymon Maj and Brian Matthews: An Autonomic Security Monitor for Distributed Operating Systems (Invited) Borka Jerman Blazic: An improved taxonomy of trust and reputation in on-line environments: the P2P networks case (Invited)
Security Privacy and Trust 2 (17:00-18:30) <i>Chaired by Mike Surridge</i> Olivier Delande, Edith Felix, Fabio Massacci, Federica Paci, Stephane Paul: Security Risk Management and Change Engineering throughout the whole system engineering process (Invited) Antonio García Vázquez, Pedro Soria-Rodríguez: FI-WARE Security: Future Internet Security Core (Invited) Leand Krutsevich, Fabio Martinelli and Artsiom Yautsiukhin: A General Method for Assessment of Security in Complex Services	Cloud Computing 3 (17:00-18:30) <i>Chaired by Dana Pectu</i> Stefan Tai: Internet of Services and Cloud Computing (Invited) Himanshu Vashishtha and Eleni Stroulia: Enhancing Query Support in HBase via an Extended Coprocessors Framework Melanie Siebenhaar, Ulrich Lampe, Tim Lehrig, Sebastian Zöller, Stefan Schulte and Ralf Steinmetz: Complex Service Provisioning in Collaborative Cloud Markets

Demonstration Evening

Building up on the success of the demonstration sessions held in Stockholm in 2009 and Ghent in 2010, the unique demonstration evening for 2011 is intended to showcase 14 innovative implementation approaches, technologies and tools related to the Future Converged Internet of Content (IoC), Services (IoS) and Things (IoT) originating from different application domains. For the second time, ServiceWave, FIA and FIRE as part of the Future Internet week are joining forces to continue the popular evening event in an unconstrained atmosphere with food, discussions and fun.

FIA/FIRE/ServiceWave Collaboration

The Future Internet Assembly – FIA – groups 100 projects which subscribed to the Bled Declaration. They agreed to coordinate their R&D activities to foster a strong European footprint on Future Internet. More than € 650 million are invested by the participants and by the European Commission to make this happen. FIA mobilises a community of some 400 experts active in shaping the European Future Internet vision.

FIRE promotes the concept of experimentally-driven research for the Internet of the Future, joining the two ends of academic-driven visionary research and industry-driven testing and experimentation. To make this approach a reality, FIRE aims to create a dynamic, sustainable, large scale European Experimental Facility, which is built by gradually connecting and federating existing and new test beds for emerging or future internet technologies.

D1: Travel eCommerce experiment – through a single access point to different test bed resources via web-services

Jeremie Leguay, Annika Sällström, Brian Pickering

This is a demonstration of a test in runtime of a Future Internet solution under development. The test involves resources from three different testbeds independent of place to build the application, to check functional coverage and to evaluate the performance in different client environments. The TEFIS portal is used for planning the experiment, to request testbed resources on demand, to configure and deploy test resources and run/re-run individual testruns and then to monitor and access results from the test.

D2: FIRE infokiosk

Timo Lahnalampi

FIRE STATION provides the FIRE Initiative with an active hub that matches, guides and co-ordinates demand for - and offering of - FIRE experimentation facilities in the context of future networks and services. FIRESTATION contains a FIRE Office and a FIRE Architecture Board. The purpose of FIRE STATION is to join forces to allow for the most efficient bilateral (and multilateral when and if appropriate) collaboration, reduce duplication of work, share experiences and best practices and work for the future of experimental research.

D3: SLA Translations with a Model-Driven Business Impact Analyses Framework

Ulrich Winkler, Wasif Gilani

A Business Continuity Management (BCM) Impact Analysis derives business-level BCM Service Level Agreements (SLAs) which need to be translated at service-level, infrastructure-level and facility-level. However, translation and optimization of SLAs across a large and distributed service-oriented system is not an easy task. In this demo we will present our Stochastic-Petri-Net based approach to automatically translate and optimize BCM SLAs for large service oriented systems. We will do the demo in the context of a business use-case.

D4: OFELIA – Pan-European Test Facility for Open Flow Experimentation

Andreas Köpsel, Hagen Woesner

The demonstration will show the live access to the control framework of a pan-European OpenFlow testbed. The testbed spans five islands all over Europe, allowing experimenters access not only to virtual machines but to the switches interconnecting them. This extends the control of networking experiments beyond best-effort overlays to a real control of the network, its routing and forwarding functions itself.

D5: Coverage and Capacity Extensions by means of Opportunistic Networks in the Future Internet

Panagiotis Demestichas, Jens Gebert, Markus Mueck

The work showcases how opportunistic networks can be used for expanding the coverage and the capacity of infrastructures in a Future Internet context. Opportunistic networks are managed by cognitive systems, which collaborate through control mechanisms. The demonstration of these technologies shows enhanced service provision capabilities, higher resource utilization, lower transmission powers, and “green” network operation.

D6: REMICS- REuse and Migration of legacy applications to Interoperable Cloud Services

Andrey Sadovykh, Christian Hein, Brice Morin, Parastoo Mohagheghi, Arne J. Berre

The main objective of the REMICS project is to specify, develop and evaluate a tool-supported model-driven methodology for migrating legacy applications to interoperable service cloud platforms. The migration process consists of understanding the legacy system in terms of its architecture and functions, designing a new SOA application that provides the same or better functionality, and verifying and implementing the new application in the cloud.

Demonstration Evening

D7: Towards governance of rule and policy driven components in distributed systems

Pierre De Leusse, K. Zielinski

It is becoming increasingly difficult to integrate rule and policy driven components and manage interoperability in distributed environments. This is mostly due to two factors: 1) an extended number of specifications and products and 2) the increasing use of such technologies. We present an infrastructure that leverages on a set of middleware, discovery protocol, knowledge interchange and consolidation to alleviate the environment's complexity.

D8: SLA-enabled Enterprise IT

Michael Nolan, John Kennedy, Jessica Mccarthy, Joe Butler, Miha Stopar, PrimozHadaln, Damjan Murn, Andy Edmonds

The SLA@SOI project has researched and engineered technologies to embed SLA-aware infrastructures into the service economy. It has published models, defined architectures, developed an open-source framework and driven open standards such as the Open Cloud Computing Interface. In this demo the application of SLA@SOI in an enterprise IT use case will be demonstrated. The presentation will illustrate various scenarios that SLA-enabling can support at negotiation-time, run-time and indeed post-provisioning.

D9: SeCMER: A Tool to Gain Control of Security Requirements Evolution

Gábor Bergmann, Fabio Massacci, Federica Paci, Thein Than Tun, Dániel Varró, YijunYu

The tool allows to model requirement evolution in different state of the art requirement languages such as SI* and Problem Frames (PF). The tool also supports the automatic detection of requirement changes and violation of security properties, and argumentation analysis to check security properties are preserved by evolution. Change driven transformations based on evolution rules are leveraged to check argument validity, to automatically detect violations or fulfillment of security properties, and to issue alerts prompting human intervention, a manual analysis or argumentation process, or trigger automated reactions in certain cases.

D10: FIRE OpenLab IP Testbedand Tool Demo

Timur Friedman

OpenLab is a project that supports Future Internet Research and Experimentation by operating and extending advanced testbeds. The demonstration provides an insight into a sub-set of available testbeds and management tools offered by the project. These are tailored for experimentation by researchers that are seeking test environments for trying out their innovative Future Internet-related algorithms, protocols, services or applications.

D11: Distributed spectrumsensing in a cognitive networking test bed

Stefan Bouckaert

The FP7-CREW project federates European wireless testbeds, with the aim of facilitating experimental research in the field of cognitive radio, cognitive networking and spectrum sensing. This demonstration shows the federation in action: throughout the w-iLab.t wireless testbed, multiple imec spectrum sensing engines were installed. A GUI presents a real-time overview of the RF spectrum occupation. After the experiments, the spectral data is used to create a spatiotemporal view of the spectrum.

D12: DTN Simulation Tool for N4C Integration Support

Witold Holubowicz, Lukasz Kiedrowski, Krzysztof Romanowski

A simulation tool developed in the N4C project is demonstrated. The project involved development, integration, and deployment of delay-tolerant networks (DTN) and applications in remote areas. The tool supports DTN system integration and testing by connecting physical and virtual network nodes via DTNs simulated with the aid of the ns-3 network simulator. Simulation examples illustrate node discovery and message transport – direct as well as using a 'data mule' service.

D13: Testing and profiling data Internet services in mobile devices

Almudena Díaz Zayas, Pedro Merino Gómez

This set up is principally intended to analyze the performance of mobile application and services running on commercial smartphones collecting measurements directly from the mobile device. Particularly, the demo focuses on the capture and analysis of information related to real time services such as video streaming and VoIP; and obtaining key performance parameters such as packet losses, jitter, inter-packet delay and PESQ. The demo will also introduce a complete set of processing scripts which will provide a numerical and graphical representation of the measurements collected by the tools mentioned.

D14: Demonstration of the OPTIMIS toolkit for Cloud Service Provisioning

Wolfgang Ziegler, Csilla Zsigri, Rosa M. Badia, Johan Tordsson, Ana Juan Ferrer, Erik Elmroth, Francisco Hernández, Karim Djemame, RaúlSirvent, Jordi Guitart, Theo Dimitrakos, Srijith K. Nair, George Kousiouris, Kleopatra Konstanteli, Theodora Varvarigou, Benoit Hudzia, Alexander Kipp, Stefan Wesner, Marcelo Corrales, Nikolaus Fargó, Tabassum Sharif and Craig Sherida.

The innovations demonstrated are aimed at optimizing Cloud services and infrastructures based on aspects such as trust, risk, eco-efficiency, cost, performance and legal constraints. Adaptive self-preservation is part of the toolkit to meet predicted and unforeseen changes in resource requirements. By taking into account the whole service life cycle, the multitude of future Cloud architectures, and a by taking a holistic approach to sustainable service provisioning, the toolkit provides a foundation for a reliable, sustainable, and trustful Cloud computing industry.

FI-PPP Session Details

Introduction by Pauli Kuosmanen

Future Internet Public Private Partnership

The Future Internet Public Private Partnership (FI-PPP) aims to advance Europe's competitiveness in Future Internet technologies and systems and to support the emergence of Future Internet-enhanced applications of public and social relevance. It addresses the need to make public service infrastructures and business processes significantly smarter (i.e. more intelligent, efficient, and sustainable) through tighter integration with the Internet infrastructure and computing capabilities.

The FI-PPP aims to increase the effectiveness of business processes and of the operation of infrastructures supporting applications in sectors such as transport, health, or energy, and to derive innovative and viable business models in these sectors, strengthening the competitive position of European industry in domains like telecommunication, mobile devices, software and services, content provision and media.

The FI-PPP follows an industry-driven, holistic approach encompassing R&D on network and communication infrastructures, devices, software, service and media technologies; and their experimentation and validation in real application contexts. It brings together the demand and supply sides, and also requires involving users early into the research lifecycle. The platform to be developed will thus be used by many actors, in particular by SMEs and public administration services, to validate the technologies in the context of smart applications and their viability to support "user driven" innovation schemes.

In this session we highlight the service aspect of the FI-PPP by introducing three important use case domains in the program.

Abstracts:

ENVIROFI: Identification and Specification of Generic and Specific Enablers of the Future Internet – Illustrated by the Geospatial and Environmental Domain

by **Arne J. Berre, Thomas Uslander and Sven Schade**

The identification and specification of generic and specific enablers of the Future Internet is based on a use-case oriented methodology taking into account life cycle and architectural constraints. The approach is illustrated by examples from the geospatial and environmental domain that are both elaborated in the ENVIROFI usage area project as part of the Future Internet Public Private Partnership program. The approach claims to be applicable to other thematic domains and usage areas.

FINEST: Future Internet Technology for the Future of Transport and Logistics

by **Andreas Metzger, Rod Franklin, Michael Stollberg, Yagil Engel, Kay Fjortoft, Rene Fleischhauer, Clarissa Marquezan and Lone Sletbakk Ramstad**

International freight transport is the foundation of global trade, representing a large and growing industry where various stakeholders collaborate to transport goods around the world. The ICT infrastructures currently employed throughout logistics business networks are limited and the use of manual systems is common. This drastically hampers the operational efficiency of logistic service providers, carriers, and the various other stakeholders involved in transport processes. This paper presents an initial conceptual architecture for an ICT platform to overcome these deficiencies. The architecture is built on top of Future Internet technologies that provide generic capabilities for the efficient and effective development of cloud-based applications based on the Internet of Services, Internet of Things, and Internet of Contents with integrated security and privacy mechanisms.

FINSENY: ICT Enablers for Smart Energy

by **Johannes Riedl, Kolja Eger, Werner Mohr and Ludwig Karg**

Almost all innovative applications in usage areas like energy, transport & logistics, healthcare rely on specific Information & Communication Technologies (ICT). These services often need to fulfill very stringent requirements which cannot easily be fulfilled by today's technologies. Developing usage area specific ICT solutions is not the solution since this prohibits benefiting from an economy of scale. Initiated by the European Commission (EC) the Future Internet Public Private Partnership (FI-PPP) has been setup to systematically identify ICT requirements from different usage areas and address as many of them as possible by so-called generic Future Internet / ICT enablers. Obviously, Smart Energy is a very important usage area which is addressed by the FI-PPP project FINSENY. This article will provide a detailed description of the project setup and its methodology.

Workshop Track

Workshops in details

Following the success of previous ServiceWave workshops, ServiceWave 2011 will feature five workshops on emerging issues and essential aspects of the "Future Converged Internet". The following workshops have been selected:

EDBPM - 4th International Workshop "From Event-Driven Business Process Management to Ubiquitous Complex Event Processing"

FULL DAY

Organized by:

Rainer von Ammon, CITT, Germany

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 Workshop on Optimising Cloud Services

HALF DAY

Organized by:

Rosa M. Badia, Barcelona Supercomputing Center, Spain
Wolfgang Ziegler, Fraunhofer Institute SCAI, Germany

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 both offerings and requirements increase, technology is needed allowing to (automatically) optimise 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.

CT4CS - 1st Workshop on Cloud Trust for Cyber Security

HALF DAY

Organized by:

Salima Benbernou, Université Paris Descartes, France
Joseph Latanicka, Thales Theresis, France
Philippe Massonet, CETIC, Belgium

Cloud technologies are being widely adopted by the enterprise community as a computing infrastructure to deploy business-critical software systems. Clouds hold the promise as one of the enabling technologies for utility computing, and have drawn a lot of interest from business users. However, the explosive popularity of virtualization and cloud computing has created a rich foundation for new and successful cyber-attacks due to the lack of security and trust. The objective of the workshop is to explore the cyber threats issues targeting virtualization and cloud computing platforms and to provide a forum for exchange of ideas between Cloud researchers working on trust and security issues, and software security experts whose technologies could be applied to the Cloud.

NESSOS - 1st Industry Seminar on Secure Service Engineering: From Best Practices to Scientific Excellence (and Vice Versa)

HALF DAY

Organized by:

Aljosa Pasic, Atos Origin, Spain
Fabio Martinelli, CNR, Italy
Jorge Cuellar, Siemens, Germany

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 behaviourally 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 artefacts, 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

HALF DAY

Organized by:

Javier Cubo, University of Málaga, Spain
Howard Foster, City University London, United Kingdom
Winfried Lamersdorf, University of Hamburg, Germany
Guadalupe Ortiz, University of Cádiz, Spain

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.

Social Events & Practical Information



Gala Dinner at POZNAN ARCHAEOLOGICAL MUSEUM

Thursday, 27th October, 19:30

Address:

Dzialynski Palace
ul. Wodna 27
61-781 Poznan

The Gorka Palace was constructed around 1540 by the rearrangement of some neighbouring Gothic houses. Its original, Early Renaissance gate from 1548, inner yard with column gallery and two rooms on the second floor are still preserved.

The origins of the Museum date back to September 23th, 1857 when the Department of Historical and Moral Sciences of the Poznan Society of the Friends of Sciences decided to establish the Museum of Polish and Slavic Antiquities. In 1923 the archaeological collections of this Museum were joined with a similar collection of the former Provincial Museum in Poznan (Kaiser-Friedrich Museum), founded by the Germans in 1894. From both collections an independent Department of the Wielkopolskie Museum was created with its own seat. In 1945 the independent Prehistoric Museum was established which in 1950 changed its name to the present one. In 1967 the Museum received a new seat in the Gorka Palace, reconstructed after destruction in the war.

Sightseeing: At 19:30 a sightseeing tour in the palace will be provided for all participants. The banquet will be opened at 20:00

Transport: Further information about the transport to the dinner will be provided during the conference. However, the museum is situated in the heart of the city only 1.5 km walking distance from the conference venue.

Special Thanks to our Gala Dinner Sponsor!

SIEMENS

Lecture-Conference Center

ServiceWave2011 will take place in the Lecture-Conference Center on the premises of the campus of Poznan University of Technology. It is situated on the banks of Warta River, with the view of the oldest part of the City.

The complex consists of two buildings. The first part was built in 2005, and the second was constructed last year. All the events will be arranged in several rooms of an amphitheater type.

Address of the Lecture-Conference Center:

Technical University of Poznan
Piotrowo 2 Street
Poznan

Shuttle Service: During the conference, free transportation from dedicated hotels to the Conference Centre is provided before the morning sessions and after the evening sessions.

Taxi companies

CENTRAL TAXI tel. +48 61 877 33 44
EXPRESS TAXI tel. +48 61 9624 or +48 61 8480 480

Wi-Fi Information

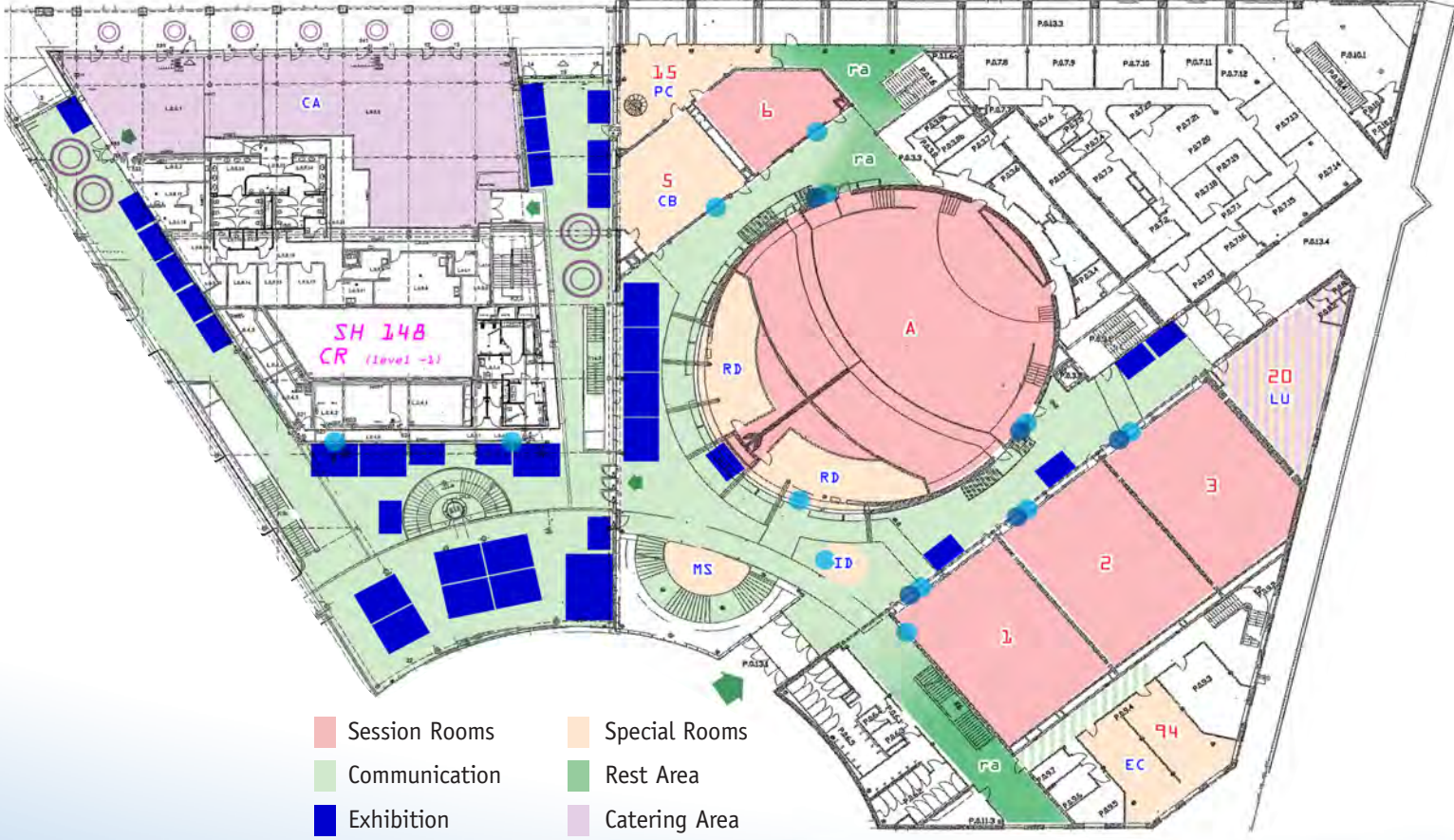
Free Wi-Fi access is available at the conference venue. Therefore, you have to provide your e-mail address used for your conference registration and an authorization code that you received upon registration. Further information will be announced.

Programme Editor and Design

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