



***16<sup>th</sup> IEEE International  
Requirements Engineering  
Conference***

***Conference Program***

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Barcelona, 8-12<sup>th</sup> September 2008

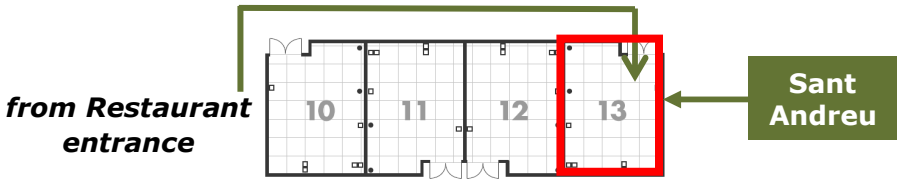
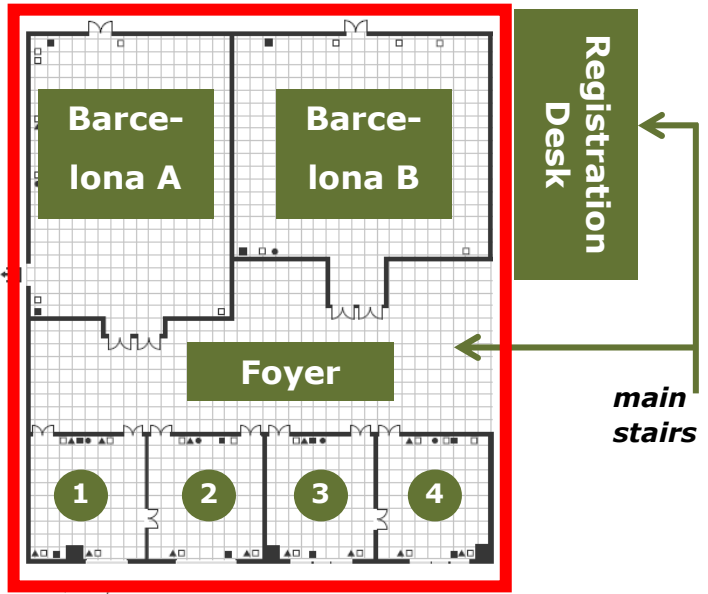
[www.re08.org](http://www.re08.org)



# Venue

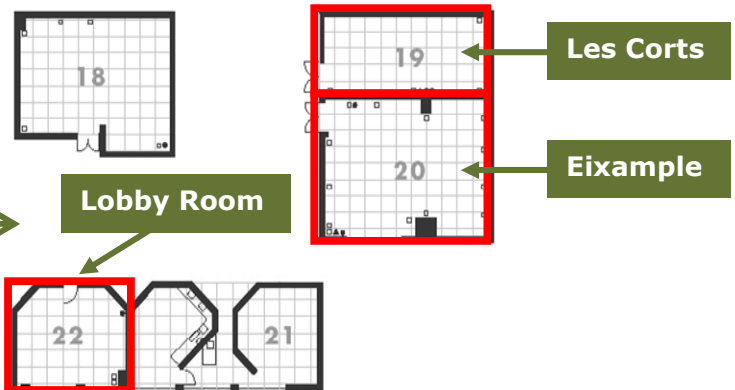
## FIRST FLOOR

- 1 Sants
- 2 Montjuïc
- 3 Sarrià
- 4 Sant Gervasi



## HALL LEVEL

from main entrance →



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# Conference Welcome

Welcome to RE'08, the 16th IEEE International Requirements Engineering Conference! The 16th RE takes place in Barcelona, Catalunya, Spain, a major economic center with a rich cultural heritage. The conference theme 'Requirements Engineering for a Sustainable World' reflects the new challenges that the global environmental problem is making on us. Sustainability of the earth and its natural resources represents a crucial issue that must be addressed in this technology-centric century. Although information services are generally not physical in nature and therefore do not directly result in the emission of greenhouse gasses or destruction of other natural resources, software does play a vital role in controlling machines and buildings that have a direct impact on the environment. When the target domain of software to be developed has a potential impact on the global environment, complex factors should be taken into consideration during the analysis and definition of requirements. This is a new challenge facing Requirements Engineering.

We are pleased to have three excellent keynote speakers to challenge us with new perspectives. Jean-Pascal van Ypersele is a Belgian professor of climatology and environmental sciences at the Université Catholique de Louvain-La-Neuve (UCL) and Vice-Chair of the Working Group II of the Intergovernmental Panel on Climate Change (IPCC). IPCC is well-known for having been awarded the Nobel Peace prize with Al Gore in 2007. Jean-Pascal is the right person to give a keynote on the topic of a sustainable world. Helio Piñón is an architect and professor at Universitat Politècnica de Catalunya. He designed a number of emblematic buildings in Barcelona, including Barceló Sants Hotel, which is the RE'08 venue and the Maremagnum and its bridge as pictured in the RE'08 banner. Helio's talk will be most appropriate to listen to in the city of Antonio Gaudí. Finally, Michael Jackson, a pioneer in RE with most influential books and also an independent consultant will raise our sights to the fundamental questions like how requirements and specifications are related to implementations or solutions, how innovation is related to reliance on well-tried norms and how specialization is related to general principles of Requirements Engineering.

The research paper sessions provide leading edge research on a wide variety of RE topics. Three groups of experts will give mini-tutorials on service-oriented systems and requirements, aspect-oriented RE and relationship between design science and RE. Three panels will bring experts in the field together to discuss RE education and training,

interaction design, and industrial practice. Panels provide ample opportunity for audience participation and discussion, as do all sessions. The industrial track program offers papers based on practical experience in industry with tips for best practice and reflections on process improvement. The industrial track is enforced with the participation of several commercial exhibitors presenting their tools on RE. Finally a posters and exhibits session gives an opportunity for more informal presentations and discussions with authors.

The conference is preceded by two days of workshops, tutorials, and the doctoral consortium. Tutorials introduce a variety of RE topics and provide training in techniques. Workshops focus on specific issues in RE, often following a theme from previous conferences and promote in depth exploration of issues. The doctoral consortium helps PhD students with feedback on their research from an international panel of experts.

RE'08, the premier international conference in Requirements Engineering, has been created by the hard work of the Organizing Committee, Program Board and Program Committee. A total of 164 papers were submitted from 33 countries. Each paper was reviewed by several members of the Program Committee. Their reviews were then used by the Program Board to make the final selections. A total of 38 papers were accepted for presentation at the conference and to appear in the proceedings, consisting of 18 full research papers, 5 short research papers and 15 industrial papers. A further 14 short poster papers were accepted. The high quality of these authors' work is a key contribution to the conference and the development of the RE discipline.

We thank all members of the different committees for their dedication and effort and our many corporate sponsors for their support. Finally we trust you will enjoy RE'08, gain further understanding of this exciting new discipline and experience the life in the cultural and modern as well as historic city of Barcelona.



Tetsuo Tamai  
RE'08 Program Chair



Xavier Franch  
RE'08 General Chair

# Organizing Committee

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## Tutorials

Oscar Pastor, Univ. Politècnica de Valencia, Spain

## Doctoral Symposium

Nazim Madhavji, Univ. Western Ontario, Canada

## Posters and Demos

Guttorm Sindre, NTNU, Norway

M. José Casany, Univ. Politècnica Catalunya, Spain

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João Araújo, Univ. Nova de Lisboa, Portugal

Selmin Nurcan, Univ. Paris 1, France

Marc Alier, Univ. Politècnica de Catalunya, Spain (local publicity)

Michael Goedicke, University of Duisburg-Essen (logo maintainer)

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Christof Ebert, Germany	Kyo Kang, Korea	Camille Salinesi, France
Martin Feather, USA	Soren Lauesen, Denmark	Guttorm Sindre, Norway
Stephen Fickas, USA	Julio Leite, Brazil	Eric Yu, Canada
Anthony Finkelstein, UK	Michel Lemoine, France	Didar Zowghi, Australia
Michael Goedicke, Germany	Robyn Lutz, USA	

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Christof Ebert, Germany	Neil Maiden, UK	Guenther Ruhe, Canada
Connie Heitmeyer, USA	Martin S. Feather, USA	Erik Simmons, USA

# Pre-conference Events

<b>Monday 8th Sept.</b>	Tutorials			Workshops		
9:00 – 10:30	T1	T4	T8	W3	W5	W7
10:30 – 11:00	Coffee-break					
11:00 – 12:30	T1	T4	T8	W3	W5	W7
12:30 – 14:00	Lunch					
14:00 – 15:30	T2	T4	T8	W3	W5	W7
15:30 – 16:00	Coffee-break					
16:00 – 17:30	T2	T4	T8	W3	W5	W7
20:00 – 21:00	Pre-conference reception					

<b>Tuesday 9th Sept.</b>	Tutorials				Workshops				
9:00 – 10:30	T9	T3	T5	T6	W1	W2	W4	W6	DS
10:30 – 11:00	Coffee-break								
11:00 – 12:30	T9	T3	T5	T6	W1	W2	W4	W6	DS
12:30 – 14:00	Lunch								
14:00 – 15:30	T10	T3	T5	T6	W1	W2	W4	W6	DS
15:30 – 16:00	Coffee-break								
16:00 – 17:30	T10	T3	T5	T6	W1	W2	W4	W6	DS

## Tutorials

- T1. *Practical Rationale Modelling*. Ian Alexander (Independent Consultant, UK)
- T2. *Strategic Actors Modelling with i\**.  
Eric Yu (University of Toronto, Canada), Jaelson Castro (UFPE, Recife, Brasil),  
Anna Perini (FBK-IRST, Italy)
- T3. *Innovation, Creativity and their Role in Business Requirements*.  
Suzanne Robertson, James Robertson (Atlantic Systems Guild, UK),  
Neil Maiden, Sara Jones (City University London, UK)
- T4. *Requirements Engineering Research Methodology: Principles & Practice*.  
Roel Wieringa (University of Twente, The Netherlands)
- T5. *Requirements Engineering: Both Sides of the Issues*.  
Al Davis (University of Colorado, USA)
- T6. *Requirements Management: A Full Life-Cycle Perspective for Global Markets*.  
Don Gause (State University of New York, USA)
- T8. *Successful Requirements Elicitation: Conducting Interviews and Running Workshops*.  
Robert Stevenson, Uwe Valentini (HOOD Group, Germany)
- T9. *How to Combine Requirements & Interaction Design Through Usage Scenarios*.  
Hermann Kaindl (Vienna University of Technology, Austria)
- T10. *System Requirements Reuse Based on Variability Management*.  
Mike Mannion (Glasgow Caledonian University, Scotland, UK),  
Hermann Kaindl (Vienna University of Technology, Austria).



- W1. **IWSPM'08**: *Second International Workshop on Software Product Management*.  
Christof Ebert (Vector Consulting, Germany), Gerald Heller (Hewlett-Packard, Germany),  
Sjaak Brinkkemper, Slinger Jansen (Utrecht University, The Netherlands)
- W2. **MERE'08**: *Third International Workshop on Multimedia and Enjoyable Requirements Engineering — Beyond Mere Descriptions and with More Fun and Games*.  
Oliver Creighton (Siemens AG, Germany), Olly Gotel (Pace University, USA)
- W3. **MaRK'08**: *First International Workshop on Managing Requirements Knowledge*.  
Walid Maalej (Technical University München, Germany), Anil Kumar Thurimella  
(Siemens AG, Germany), Hans-Jörg Happel (FZI Research Center for Information  
Technologies, Germany), Björn Decker (empolis GmbH, Germany)
- W4. **REET'08**: *Requirements Engineering Education and Training*.  
Didar Zowghi (University of Technology, Sydney, Australia), Jane Cleland Huang  
(DePaul University, USA), Joy Beatty (Seilevel Inc., USA)
- W5. **REV'08**: *Requirements Engineering Visualization*.  
Olly Gotel (Pace University, USA), Brian Berenbach (Siemens Corporate Research, USA)
- W6. **RELAW**: *Requirements Engineering and Law*. Annie I. Antón, Travis D. Breaux (North  
Carolina State University, USA), Dimitrios Kragiannis (University of Vienna, Austria),  
John Mylopoulos (University of Toronto, Canada)
- W7. **SOCCEER'08**: *International Workshop on Service-Oriented Computing Consequences for  
Engineering Requirements*. Luciano Baresi (Politecnico di Milano, Italy), Neil Maiden  
(City University London, UK), Klaus Pohl (University of Duisburg-Essen, Germany)

## Doctoral Symposium

*Non-Functional Requirements Driven Tool-support for Design Pattern Selection in End-User Development*. Paul Gordon Austrem

*Understanding and Supporting Very Large-Scale Requirements Engineering*. Krzysztof Wnuk

*Communication Metaphors for Requirements-Architecture Co-design*. Maria Albuquerque

*Defining Dependability Goals in Computer Systems for Space Projects*. Carlos Lahoz

*A Framework for Pragmatic Requirements Engineering*. Joachim Hoessler

*Towards a Theory of Knowledge Management Processes Underlying Requirements-Driven Collaboration*. Sabrina Marczak

*Timing diagrams add Requirements Engineering capability to Event-B Formal Development*.  
Tossaporn Joochim

*Requirements Engineering Techniques for Multi-channel Mobile work Solutions*. Sundar  
Gopalakrishnan

*A Case Study in Effective Requirements Practices in the Automotive Aftermarket*. Irene Caulfield

# Wednesday, 10<sup>th</sup> September 2008

9:00 - 10:30

## Conference opening (Barcelona B)

### Keynote 1 (Barcelona B): Architecture, Computers and Sustainability

**Speaker:** Helio Piñón (Universitat Politècnica de Catalunya, Spain)

**Chair:** Pere Botella (Universitat Politècnica de Catalunya, Spain)

11:00 - 12:30

### Session 1 (Research, Barcelona A): Change Management

**Chair:** Jane Cleland-Huang (DePaul University, USA)

*Supporting Requirements Change Management in Goal Oriented Analysis.*

Daisuke Tanabe, Kohei Uno, Kinji Akemine, Takashi Yoshikawa, Haruhiko Kaiya, Motoshi Saeki

*Proactively Managing the Evolution of Embedded System Requirements.*

Karina Villela, Joerg Doerr, Anne Gross

*Rule-Based Maintenance of Post-Requirements Traceability Relations.*

Patrick Mäder, Orlena Gotel, Ilka Philippow

### Session 2 (Research, Barcelona B): Social Systems

**Chair:** Jaelson Castro (Universidade Federal de Pernambuco, Brazil)

*Using Goal-Oriented Requirements Engineering for Improving the Quality of ISO/IEC 15504 based Compliance Assessment Frameworks.*

André Rifaut, Eric Dubois

*Legal Requirements, Compliance and Practice: An Industry Case Study in Accessibility.*

Travis D. Breau, Annie I. Antón, Kent Boucher, Merlin Dorfman

*Information Brokers in Requirement-Dependent Social Networks.*

Sabrina Marczak, Daniela Damian, Ulrike Stege, Adrian Schröter

### Session 3 (Practice, Sants): Training & Lessons Learned

**Chair:** Barbara Paech (Institute for Computer Science, Heidelberg, Germany)

*The Evaluation of a Requirements Engineering Training Program at Siemens.*

Brian Berenbach, Taryn Rayment

*Games-Based Requirements Engineering Training: An Initial Experience Report.*

Joy Beatty, Mike Alexander

*Requirements Engineering in the Development of Large-Scale Systems.*

Sascha Konrad, Michael Gall

**14:00 - 15:30**

### **Session 4 (Research, Barcelona A): Concepts & Values**

**Chair:** Oscar Pastor (Politécnica de Valencia, Spain)

*Value-based Requirements Engineering (VBRE).*

Sarah Thew, Alistair Sutcliffe

*Value-Driven Service Matching.*

Jaap Gordijn, Sybren De Kinderen, Roel Wieringa

*Revisiting the Core Ontology and Problem in Requirements Engineering.*

Ivan Jureta, John Mylopoulos, Stéphane Faulkner

*Info Cases: Integrating Use Cases and Domain Models.*

Michel Fortuna, Cláudia Werner, Marcos Borges

### **Session 5 (Panel, Barcelona B): Transforming the RE Classroom Experience**

**Moderator:** Didar Zowghi (University of Technology, Sydney, Australia)

**Panelists:** Jane Cleland-Huang, Don Gause, Orlena Gotel, Zhi Jin, Pete Sawyer

### **Session 6 (Practice, Sants): RE for Embedded Systems**

**Chair:** Christof Ebert (Vector Consulting Services, Germany)

*A Practical Approach to Requirements Reuse in Product Families of On-Board Systems.*

Antonio Monzón

*Requirements Engineering for Control Systems Development in Small and Medium-Sized Enterprises.*

Dominik Schmitz, Hans W. Nissen, Matthias Jarke, Thomas Rose, Peter Drews, Frank J. Hessler, Michael Reke

*Using Scenarios to Discover Requirements for Engine Control Systems.*

Alistair Mavin, Mark Novak, Philip Wilkinson, Neil Maiden, Perry Lynch

**16:00 - 18:00**

### **Poster and Research Tool Demos (Sant Gervasi)**

**Supervisor:** María José Casany (Universitat Politècnica de Catalunya)

*(See full list at page 13)*

### **Exhibitor Presentations (Sants)**

**Chair:** Pere Botella (Universitat Politècnica de Catalunya)

*(See full list at page 14)*

**19:30 - 21:30**

### **Conference Reception (Museu Nacional d'Art de Catalunya, MNAC)**

# Thursday, 11<sup>th</sup> September 2008

9:00 - 10:30

## Awards (Barcelona B)

### Keynote 2 (Barcelona B): Problems, Solutions and Requirements

**Speaker:** Michael Jackson (The Open University, UK)

**Chair:** Tetsuo Tamai (University of Tokyo, Japan)

11:00 - 12:30

### Session 7 (Research, Barcelona A): Learning

**Chair:** Daniela Damian (University of Victoria, Canada)

*Requirements Engineering Education in the 21st Century, an Experiential Learning Approach.*

Gil Regev, Donald C. Gause, Alain Wegmann

*Gameplay to Introduce and Reinforce Requirements Engineering Practices.*

Renel Smith, Orlena Gotel (Pace University, USA)

*Marginal Notes on Amethodical Requirements Engineering: What Experts learned from Experience.*

Susan Sim, Thomas Alspaugh, Ban Al-Ani (University of California, Irvine, USA)

### Session 8 (Mini-tutorial, Barcelona B): Service-Centric Systems and Requirements Engineering

**Speakers:** Luciano Baresi (Politecnico di Milano, Italy), Neil Maiden (City University London, UK), Peter Sawyer (Lancaster University, UK)

### Session 9 (Practice, Sants): Elicitation Techniques

**Chair:** Alan Davis (University of Colorado, USA)

*A Case Study: Requirements Elicitation Processes throughout a Project.*

Takako Nakatani, Shouzo Hori, Naoyasu Ubayashi, Keiichi Katamine, Masaaki Hashimoto

*A Case Study in Eliciting Scalability Requirements.*

Leticia Duboc, Emmanuel Letier, David Rosenblum, Tony Wicks

*Pattern Oriented Requirements towards ISVs.*

Kousik Sankar R, Asha S Hejmadi

**14:00 - 15:30**

**Session 10 (Research, Barcelona A): Priority**

**Chair:** Alistair Sutcliffe (University of Manchester, UK)

*“Fairness Analysis” in Requirements Assignments.*

Anthony Finkelstein, Mark Harman, S. Afshin Mansouri, Jian Ren, Yuanyuan Zhang

*Requirements Prioritization Based on Benefit and Cost Prediction: An Agenda for Future Research.*

Andrea Herrmann, Maya Daneva

*Examining the Relationships between Performance Requirements and “Not a Problem” Defect Reports.*

Chih-Wei Ho, Laurie Williams, Brian Robinson

**Session 11 (Mini-tutorial, Barcelona B): Aspect-Oriented RE: An Introduction**

**Speakers:** Awais Rashid (Lancaster University, UK), Yijun Yu (Open University)

**Session 12 (Panel, Sants): RE - Industry Needs**

**Moderator:** Ann Hickey (University of Colorado, USA)

**Panelists:** Alan Davis, Christof Ebert, Martin S. Feather, Suzanne Robertson, Frank Houdek, Sarah Gregory, Gert Bikker

**16:00 - 18:00**

**Session 13 (Research, Barcelona A): Elicitation**

**Chair:** David Callele (University of Saskatchewan, Canada)

*Inventing Requirements from Software: An Empirical Investigation with Web Services.*

Konstantinos Zachos, Neil Maiden

*Extracting and Modeling Product Line Functional Requirements.*

Nan Niu, Steve Easterbrook

*Using Data Mining and Recommender Systems to Facilitate Large-Scale, Open, and Inclusive Requirements Elicitation Processes.*

Carlos Castro-Herrera, Chuan Duan, Jane Cleland-Huang, Bamshad Mobasher

*Selecting Security Patterns that Fulfill Security Requirements.*

Michael Weiss, Haralambos Mouratidis

## **Session 14 (Panel, Barcelona B): How to Combine RE & Interactions Design**

**Moderator:** Hermann Kaindl (Vienna University of Technology, Austria)

**Panelists:** Larry Constantine, Oscar Pastor, Alistair Sutcliffe, Didar Zowghi

## **Session 15 (Practice, Sants): Requirements through the Life Cycle**

**Chair:** Frank Houdek (Daimler, Germany)

*How Far Can Statistics Help? Evaluating Design Options Against Requirements.*

Ian Alexander

*Linking Requirements and Testing in Practice.*

Eero J. Uusitalo, Marko Komssi, Marjo Kauppinen, Alan M. Davis

*Guiding Technology Deployment Decisions using a Quantitative Requirements Analysis Technique.*

Martin S. Feather, Kenneth A. Hicks, Ryan M. Mackey, Serdar Uckun

**20:00 – 22:00**

## **Conference Banquet (Restaurant Can Cortada)**

Buses depart at 19:30 from the conference venue

# Friday, 12<sup>th</sup> September 2008

9:00 - 10:30

## Session 16 (Research, Barcelona A): Formal Approach

**Chair:** Robyn Lutz (Iowa State University and Jet Propulsion Lab, USA)

*A Formal Approach to Semantic Composition of Aspect-Oriented Requirements.*

Nathan Weston, Ruzanna Chitchyan, Awais Rashid

*Requirements Capture with RCAT.*

Margaret Smith, Klaus Havelund

*Dynamic Consistency Checking of Domain Requirements in Product Line Engineering.*

Kim Lauenroth, Klaus Pohl

## Session 17 (Mini-tutorial, Barcelona B): Design Science, Engineering Science and Requirements Engineering

**Speakers:** Roel Wieringa (University of Twente, The Netherlands),  
Hans Heerkens (University of Twente, The Netherlands)

## Session 18 (Practice, Sants): Collaboration & Elicitation

**Chair:** Daniel Berry (University of Waterloo, Canada)

*Experience in e-Science Requirements Engineering.*

Sarah Thew, Alistair Sutcliffe, Oscar de Bruijn, John McNaught, Rob Procter, Colin Venters, Iain Buchan

*Leveraging Collaborative Technologies in the IO Requirements Process.*

Renato Recio, Claudia Salzberg, Jeff Palm

*Use and Influence of Creative Ideas and Requirements for a Work-Integrated Learning System.*

Sara Jones, Perry Lynch, Neil Maiden, Stefanie Lindstaedt

11:00 - 12:30

## Keynote 3 (Barcelona B): Climate change: Challenges and Opportunities for Software Requirements Engineering

**Speaker:** Jean-Pascal van Ypersele (Université Catholique de Louvain-la-Neuve,  
Vice-Chair of IPCC Working Group II)

**Chair and discussant:** Steve Easterbrook (University of Toronto, Canada)

12:30 – 13:00

## Conference closing. Invitation to RE'09 (Barcelona B)

## Posters and Research Demos

- DaWaRA: an Eclipse Plugin for Using i\* on Data Warehouse Requirement Analysis.*  
Octavio Glorio, Jesús Pardillo, José-Norberto Mazón, Juan Trujillo
- Balancing Security Requirements and Emotional Requirements in Video Games.*  
David Callele, Eric Neufeld, Kevin Schneider
- Supporting Requirements Model Evolution throughout the System Life-cycle.*  
Neil Ernst, John Mylopoulos, Yijun Yu, Tien Nguyen
- Web-based Stakeholder Participation in Distributed Requirements Elicitation.*  
Steffen Lohmann, Philipp Heim, Kim Lauenroth
- Reusing Terminology for Requirements Specifications from WordNet.*  
Katharina Wolter, Michal Smialek, Daniel Bildhauer, Hermann Kaindl
- An Integration of Requirements and User Interface Specifications.*  
Kizito Mukasa, Hermann Kaindl
- traceMaintainer – Automated Traceability Maintenance.*  
Patrick Mäder, Orlena Gotel, Tobias Kuschke, Ilka Philippow
- From Textual Scenarios to Message Sequence Charts: Inclusion of Condition Generation and Actor Extraction.*  
Leonid Kof
- Building Contingencies into Specifications.*  
Armstrong Nhlabatsi, Robin Laney, Bashar Nuseibeh
- Aligning Requirements with HIPAA in the iTrust System.*  
Aaron Massey, Paul Otto, Annie Anton
- A Method of Scenario Generation with Differential Scenario.*  
Masayuki Makino, Atsushi Ohnishi
- A Proposed Method for Automated Project Scheduling using Goals and Scenarios.*  
Akos Szoke
- Assessing the Quality of Software Requirements Specifications.*  
Eric Knauss, Christian El Boustani
- Aspects Composition in Problem Frames*  
Maria Lencastre, Ana Moreira, João Araújo, Jaelson Castro



## Exhibitors and exhibitors presentations

An exhibitors space will be opened Wednesday and Thursday at the hotel Foyer with booths from:



### Exhibitor presentations

**SIEMENS Corporate Research.** *Requirements Engineering@Siemens.*

Brian Berenbach

**POLAR CONSULTORES.** *Gestión integral de requisitos y pruebas de sistema.*

Enrique Castillo San Martín

**VISURE.** *How a modern RE tool can deliver value to the whole organization?*

Mika Alapiessa

**EXTESSY.** *Requirements Interchange Format RIF - Building a seamless information exchange for engineers.*

Manuel Reis Monteiro

**IBM.** *Managing Requirements with IBM Rational RequisitePro.*

Ana López Mancisidor

**JUSTINMIND.** *Put in motion software requirements through simulations.*

Pablo González

**TELELOGIC.** *Building and managing requirements lifecycle easily and fast.*

Gabriela Zornoza

**SYNERGIO.** *Start at the end.*

Roelof Lucassen

## Keynote Speakers

### **Helio Piñón (UPC). *Architecture, Computers and Sustainability***

Architecture acts on the matter adding subjective values to the logic of construction. Those values are based on the capacity of aesthetic judgment that has the person who conceives and executes a project. User functional requirements represent the fundamental condition of architecture and therefore they almost do not change from one building to another: the needs that human beings have on rooms and related spaces answer to highly typified patterns. On the other hand, symbolic, visual requirements have become central in contemporary architecture: buildings are constructed so that the community is compelled to speak about them, with the tacit assumption that they will satisfy some minimum conditions of habitability. In the last decades, computers have emerged in the architecture discipline. Computer programs can influence along two opposite directions: they can accentuate the pathology of "being spectacular" that architecture suffers, offering processes of automatic and arbitrary creation of form, and thus making symbolic requirements more easy to generate and explore; or they can help to take the decisions correctly, offering systems of representation that improve the conditions of judgment. The first way (the most aberrant) is clearly unsustainable; the second one contributes to the order of the world, propitiating formal consistency, and it is clearly sustainable, supporting reflection and sensibility on architects' projects and results.



### **Michael Jackson (Open University). *Problems, Solutions and Requirements***

We speak easily of software engineering and of requirements engineering, implicitly inviting comparison of our discipline with those of the established branches of engineering. How are requirements and specifications related to implementations or solutions? How is innovation related to reliance on well-tried norms? How is specialisation related to general principles of requirements engineering? What can case studies tell us about proposed development methods? What is the place of formalism in developing software-intensive systems? The books of Vincenti, Petroski and other established engineers have much to teach us as we look back over fifteen years of requirements engineering conferences and consider these fundamental questions.



## **Jean-Pascal van Ypersele (UCL, IPCC). *Climate change: Challenges and Opportunities for Software Requirements Engineering***

Climate change is happening now, and climate modelling and data analysis shows that it is mostly as a result of greenhouse gases (GHG) from human activities. Impacts will be important, with most damages in developing countries, but developed countries will be affected too. Together with life-style and behaviour changes, known technologies and policies can reduce GHG emissions at reason-able costs, but effective policies, including an effective carbon-price signal are required. The IPCC, which just received the Nobel Peace Prize with Al Gore, produces the most reliable set of assessed information about climate change in all its dimensions. Developed countries, with GHG emissions per capita that are up to 20 times larger than the quantity natural systems are able to absorb (using equitable per capita distribution) are confronted to a huge challenge. Climate-friendly policies offer opportunities to move our economy and social systems towards a more sustainable model of development. Software controlling machines and buildings that have a direct impact on environment can play an important role to reduce energy usage, and therefore emissions. Software used to model climate has become extremely important to understand climate behaviour and attempt to project it in the future. Quality matters in both cases, and some of the related challenges will be discussed.



*(Photo: Frédéric Deleuze (UCL))*

## Mini-tutorials

**Title:** *Aspect-Oriented Requirements Engineering: An Introduction.*

**Speakers:** Awais Rashid (Lancaster University, UK), Yijun Yu (Open University)

Aspect-oriented requirements engineering (AORE) techniques provide new composition mechanisms to specify and reason about dependencies that crosscut elements of a requirements specification. This tutorial provides a problem-driven introduction to AORE. The speakers will introduce a concrete requirements analysis problem highlighting challenges posed by crosscutting concerns. They will then discuss AORE analyses of the problem using specific AORE techniques. The focus will be on introducing the basic concepts of AORE and its support for compositional reasoning -reasoning about dependencies and interactions- over a requirements specification. The tutorial will end with a panel style discussion with the audience focusing on the relationship of AORE techniques with other contemporary RE approaches and potential applications of AORE beyond the presented problem description.

**Title:** *Service-Centric Systems and Requirements Engineering.*

**Speakers:** Luciano Baresi (Politecnico di Milano, Italy), Neil Maiden (City University London, UK), Peter Sawyer (Lancaster University, UK)

This mini-tutorial introduces web services and service-centric systems and explores their impact on requirements engineering processes, techniques and tools. Web services, service-centric systems and service-oriented architectures are changing the ways in which we develop software systems, however the changes needed to requirements processes and techniques have not been explored widely. In the mini-tutorial we will introduce web services and service-oriented architectures and current trends in this field, then introduce new tools and techniques with which to engineer requirements for service-centric systems developed in the EU-funded SeCSE project. These include tools and techniques for specifying and publishing web services with functional and quality features, discovering web services compliant with early requirements, specifying service-level agreements from requirements, and service monitors based on requirements.

**Title:** *Design Science, Engineering Science and Requirements Engineering.*

**Speakers:** Roel Wieringa, Hans Heerkens (University of Twente, The Netherlands)

For several decades there has been a debate in the computing sciences about the relative roles of design and empirical research, and about the contribution of design and research methodology to the relevance of research results. In this minitutorial we review this debate and compare it with evidence about the relation between design and research in the history of science and technology. Our review shows that research and design are separate but concurrent activities, and that relevance of research results depends on problem setting rather than on rigorous methods. We argue that rigorous scientific methods separate design from research, and we give simple model for how to do this in a problem-driven way.

## Panels

**Title:** *Transforming the RE Classroom Experience.*

**Moderator:** Didar Zowghi (University of Technology, Sydney, Australia)

**Panelists:** Jane Cleland-Huang, Don Gause, Orlena Gotel, Zhi Jin, Pete Sawyer

Although, as a community we have developed extensive curriculum plans and have identified skill sets that requirements engineers need to develop, we have spent little time engaging in the discussion of how requirements principles and practices can best be taught. This panel asks the question of how we can improve requirements engineering education and training programs by transforming the learning process into one that actively engages students as they seek to acquire knowledge and learn critical skills.

**Title:** *RE - Industry Needs.*

**Moderator:** Ann Hickey (University of Colorado, USA)

**Panelists:** Alan Davis, Christof Ebert, Martin S. Feather, Suzanne Robertson, Frank Houdek, Sarah Gregory, Gert Bikker

Requirements engineering (RE) is the discipline within systems and software engineering that bridges the entire life cycle and thus significantly influences the success or failure of a product or project. From a business perspective, it is what makes the difference between a winning product and a mere set of features. Therefore, good requirements engineering practices in industry are critical to succeed – and survive – in ever-changing markets. The goal of this panel is to address the often perceived theory-practice gap between academia and industry by delivering insights into concrete industry demands/needs for improvements in RE, identifying potential solutions to those needs, and challenging academia and industry to address unmet needs.

**Title:** *How to Combine RE & Interactions Design.*

**Moderator:** Hermann Kaindl (Vienna University of Technology, Austria)

**Panelists:** Larry Constantine, Oscar Pastor, Alistair Sutcliffe, Didar Zowghi

In this panel, we propose to figure out how requirements engineering and interaction design can be usefully combined. In particular, some people argue that scenarios / use cases should be concrete, as in story-telling. Others argue for use of “essential” use cases as a methodological approach to interaction and user-interface design. Somewhat in the middle, it is argued that use cases should help acquiring the requirements in the first place. What should the practitioner believe and, in particular, do, in order to develop useful and usable software and systems?

## Related events held during RE'08

*IREB Certified Professional Examination.*


Barcelona, 10<sup>th</sup> September 18:00-19:00, hotel Barceló Sants (room TBA)

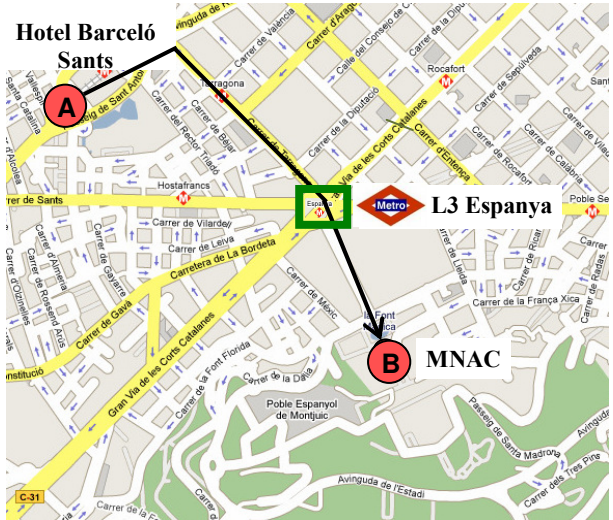
Reduced fees for RE'08 attendees

See <http://certified-re.de/en/mission/requirements-engineering-as-key-discipline/> for details

# Social Events

## Conference Reception

The Conference Reception will be held on Wednesday 10th at the Museu Nacional d'Art de Catalunya (Catalan National Museum of Art, MNAC). The museum is at walking distance from the conference venue (about 25-30 minutes) or else you can take the underground (2 stops  L3 Espanya + 5-minute walk). The reception will include a cocktail with food and beverages and a visit to one of the museum spaces.



## Conference Banquet

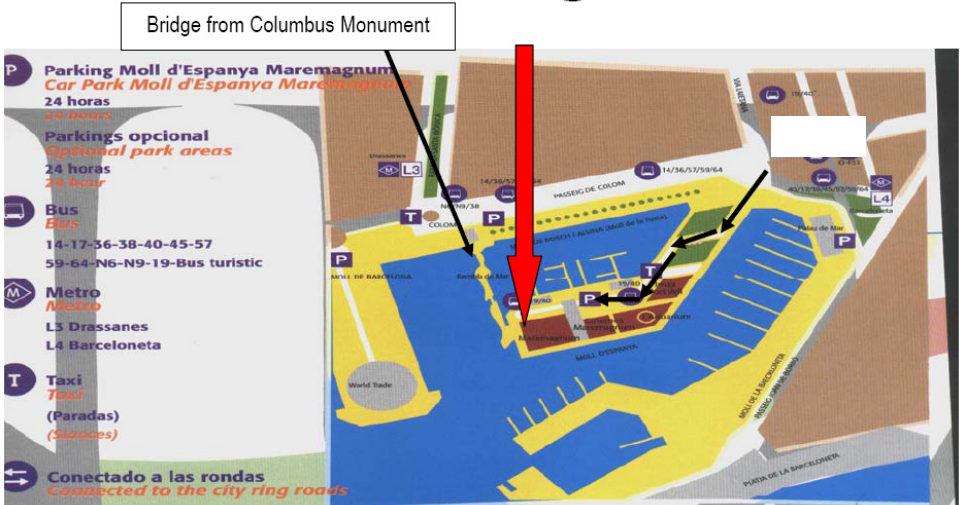
The Conference Banquet will be held on Thursday 11th at the Restaurant Can Cortada (Avinguda Estatut De Catalunya S/N). The original building dates from XI century and was later converted into a farmhouse ("Masia"). Its speciality is traditional Catalan market cuisine. A lively show will take place after the dinner. There will be buses from and to the conference venue. Alternatively, you may reach the restaurant by underground ( L3 Valldaura; about 20-25 minutes from downtown + 5-minute walk).



## Pre-Conference Reception

The Pre-Conference Reception will be held on Monday 8<sup>th</sup>, 20:00, at the Sala Maremagnum. The place is at the harbour area, just 10 minutes walking from the underground (Metro L3 Drassanes; 5 stops from the hotel venue, no line transfer required). The reception will include a cocktail and a few snacks.

## Sala Maremagnum



**Maremagnum, 2<sup>na</sup> floor.  
Just leaving the panoramic lift.**



17<sup>th</sup> IEEE International  
Requirements Engineering  
Conference  
31 August - 4 September 2009  
Atlanta, Georgia, USA



## Requirements Engineering: the Essential Bridge

The world is becoming ever more dependent on software intensive systems. They are central to our economy, to our society, to the services we depend upon and, increasingly to the very survival of the global ecosystem. Despite many failures, some of them very well publicized, the engineering of such systems has improved consistently over the past few decades. However many challenges remain. Every computer-based system involves relating the myriad, informal facets of the real world to the intricate and formal specifics of a software system. Understanding potentials or details of software systems is not expected of stakeholders, who have their own specialized concerns. Similarly, the eager and technologically capable developers are not expected to understand the nuances of the many domains where software applies. Requirements Engineering (RE) is the essential capability that can bridge the two perspectives. The RE activity is multi-disciplinary. When defining the requirements of major systems we must bring to bear expertise from a wide range of specialisms such as Human-Computer Interaction, Systems Modeling, and Security. The RE research field builds the effective bridges between these and other sub-disciplines of the Computer Science and Information Systems fields. The many computer-based system needs of business and society are often contradictory, inadequately defined, and rapidly changing. RE helps stakeholders communicate, helping to reconcile their conflicts, clarify their goals, and reflect their priorities. If our society is to seek a better future we will need all of the models, methods, and tools that RE can provide.

The IEEE International Requirements Engineering Conference provides the premier international forum for researchers, educators, industrial practitioners and students to present and discuss the most recent innovations, trends, experiences and concerns in the field of requirements engineering.

**General Chair:** William Robinson, Georgia State University, USA.

**Program Chair:** Kevin Ryan, University of Limerick, Ireland.

**Call for papers:** technical solution; scientific evaluation; industrial practice & experience; survey or review. Call for workshops, tutorials and other types of submissions also opened.

### Important dates:

Paper abstracts	February 2, 2009
Paper submissions (all categories)	February 12, 2009
Tutorial, workshop and panel submissions	March 9, 2009
Notification to authors	April 22, 2009
Doctoral symposium, poster and other submissions	May 11, 2009



# Conference at a Glance

Wednesday 10th Sept.	Track 1 (Barcelona A)	Track 2 (Barcelona B)	Track 3 (Sants)		
8:15 – 9:00				Exhibitors fair (Foyer)	
9:00 – 10:30	<b>Opening. Keynote: Helio Piñón</b> (Barcelona B)				Registration (Main desk)
10:30 – 11:00	<b>Coffee-break</b> (Foyer)				
11:00 – 12:30	1. Research <b>Change Management</b>	2. Research <b>Social Systems</b>	3. Practice <b>Training&amp;Les- sons Learned</b>		
12:30 – 14:00	<b>Lunch</b> (Hotel Restaurant)				
14:00 – 15:30	4. Research <b>Concepts &amp; Values</b>	5. Panel <b>Classroom Experience</b>	6. Practice <b>RE for Embe- ded Systems</b>		
15:30 – 16:00	<b>Coffee-break</b> (Foyer)				
16:00 – 18:00	<b>Posters and research demos</b> (Sant Gervasi)		<b>Exhibitor presentations</b>		
18:00 – 19:30					
19:30 – 21:30	<b>Conference Reception (MNAC)</b>				

Thursday 11th Sept.	Track 1 (Barcelona A)	Track 2 (Barcelona B)	Track 3 (Sants)		
8:15 – 9:00				Exhibitors fair (Foyer)	
9:00 – 10:30	<b>Awards. Keynote: Michael Jackson</b> (Barcelona B)				Registration (Main desk)
10:30 – 11:00	<b>Coffee-break</b> (Foyer)				
11:00 – 12:30	7. Research <b>Learning</b>	8. Mini-tutorial <b>Service cen- tric systems</b>	9. Practice <b>Elicitation Techniques</b>		
12:30 – 14:00	<b>Lunch</b> (Hotel Restaurant)				
14:00 – 15:30	10. Research <b>Priority</b>	11. Mini-tutorial <b>Aspect Orientation</b>	12. Panel <b>RE – Industry Needs</b>		
15:30 – 16:00	<b>Coffee-break</b> (Foyer)				
16:00 – 18:00	13. Research <b>Elicitation</b>	14. Panel <b>RE &amp; Interac- tions Design</b>	15. Practice <b>RE through Life-Cycle</b>		
18:00 – 20:00					
20:00 – 22:00	<b>Conference Banquet (Can Cortada)</b>				

Friday 12th Sept.	Track 1 (Barcelona A)	Track 2 (Barcelona B)	Track 3 (Sants)	
8:15 – 9:00				Registration (Main desk)
9:00 – 10:30	16. Research <b>Formal Approach</b>	17. Mini-tutorial <b>Design and Engineering Science &amp; RE</b>	18. Practice <b>Collaboration &amp; Elicitation</b>	
10:30 – 11:00	<b>Coffee-break</b> (Foyer)			
11:00 – 12:30	Keynote: <b>Jean-Pascal van Ypersele</b> (Barcelona B)			
12:30 – 13:00	<b>Closing. Invitation to RE'09</b> (Barcelona B)			

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