

Theme: Requirements for Innovation in a Changing World

12th IEEE International Requirements Engineering Conference (RE '04) Program



<http://www.re04.org>

6th –11th September 2004
Kyoto, Japan

Sponsor: IEEE Computer Society and SIGSE of IPSJ



In Cooperation

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Welcome and Yokoso(ようこそ) to RE '04 in Kyoto

Welcome and Yokoso to RE '04 in Kyoto, the heart of Japanese culture! The International Requirements Engineering Conference has touched down in Japan and the Asia-Pacific region for the first time in its 12 year history. It provides a great opportunity to both the International Requirements Engineering community and people from the region to meet and learn from each other. It also demonstrates both the increasing globalization of the Requirements Engineering discipline and the importance of recognised local cultures. Requirements cannot be expressed without recognizing business practices and how people work, both of which are inextricably linked with their cultural background. Since bringing together different cultures is a source of innovation, this year's conference offers a unique opportunity.

For years software engineering practitioners and researchers have recognized the importance of Requirements Engineering. It remains the most challenging area in software engineering, have evolved originally from programming and design research. However, software is becoming ubiquitous in our daily lives. We are witnessing rapid growth of new arenas such as embedded/ubiquitous and network/service-oriented software. In these domains users are not even aware of the existence of software embedded in the systems, while safety and security issues have become even more critical. The new world that we are facing is different to the one that our past work has prepared us for. Unexplored frontiers are waiting for us to explore and innovate.

The conference is now open, Thank you for your participation. It's your turn to explore this changing world. Let's go forward and enjoy!

On behalf of the organizing and program committees of RE '04, I would like to thank everyone who has supported RE '04. Among them we acknowledge gold sponsors Borland Software Corporation and NTT DATA CORPORATION, silver sponsors Microsoft Corporation and DaimlerChrysler AG. All the members of RE '04 organizing team are dedicated to make this conference a success. They all deserve our gratitude.

Mikio Aoyama and Motoshi Saeki, General Co-Chair, and Neil Meiden, Program Chair

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Didar Zowghi, U. of Tech., Sydney, Australia

Theme: Requirements for Innovation in a Changing World

Requirements Engineering (RE) is the branch of systems engineering concerned with the goals, desired properties and constraints of complex systems, ranging from embedded software systems and software-based products to large enterprise and socio-technical systems that involve software systems, organisations and people. It covers all activities related to the acquisition, specification and maintenance of requirements throughout the life cycle. It also covers how requirements relate to business processes, work redesign, system and software architecture, and testing. The importance of requirements engineering has been recognised for many years. In the 1990s this recognition led to an IEEE Conference and Symposium series. Ten years on, the RE Conference has become the international platform for presenting new research, transferring research results to industrial practice, and presenting industrial experiences and best-practice to the widest possible audience.

In 2004 RE will take place in Kyoto, Japan for the first time. To reflect this RE'04 will continue to be interested in all aspects of RE, but is particularly interested in requirements for embedded systems in automotive and consumer products, and requirements engineering for innovative product design

Program at a Glance

Tutorials

Date	Time	English [Room 33]	English [Room 34]	Japanese [Room 35]
Sep. 6 (Mon)	9:00 ~ 12:30	T-1: Requirements-Driven Product Line Development	T-2 Requirements: the Bridge between Business and Development	
	14:00 ~ 17:30	T-3 Requirements-Based Product Line Engineering	T-4 Requirements and Creativity	J-1 Introduction to Scenario Analysis
Sep. 7 (Tue)	9:00 ~ 12:30	T-5 Developing Practical Scenarios		J-2 Requirements Traceability Methodology & Its Application to UML
	14:00 ~ 17:30	T-6 Software Traceability	T-7 Financially Informed Requirements Prioritization	

Workshops

Date	Workshop [Room 36]	Workshop [Room 37]	Workshop [Room 38]	Workshop [Room 3]
Sep. 6 (Mon) 9:00 ~ 17:30	W1: Int'l Workshop on Requirements for High Assurance Systems (RHAS'04)	W2: Int'l Workshop in Service-oriented Requirements Engineering (SoRE'04)	W3: Int'l Workshop on Requirements Engineering Patterns (REP'04)	W6: Int'l Workshop on Principles of Software Evolution (IWPSE'2004)
Sep. 7 (Tue) 9:00 ~ 17:30	W4: Int'l Workshop on Comparative Evaluation in Requirements Engineering (CERE'04)	W5: Int'l Workshop on Requirements Engineering for COTS Components (RECOTS'04)	DS: Doctorial Symposium	
Sep. 11(Sat)9:00 ~ 20:00				
W7: Int'l Workshop on Automotive Requirements Engineering (AuRE'04) In Nagoya				

Technical Program

Date	Time	Track A [Room 3]	Track B [Room 4]	Track C [Room 4]	
Sep. 8 (Wed)	9:30~ 11:00	Welcome & Opening Remarks, Highlights of the Day [Hall 1] Keynote 1: How Creative Design Happens, Nigel Cross (The Open University, UK)			
	11:30~ 13:00	Papers 1: Use Cases in Requirements	Panel 1: Future Challenges of Requirements Engineering	Vendor Presentations 1: Borland, NTT DATA, Telelogic	Tool Exhibit [Room 33, 34, 35, 36]
	14:00 ~ 15:30	Papers 2: Aspect-Oriented Requirements	Papers 3: Improving Requirements Processes	Mini-Tutorial: He's Just Making It All Up!(or 15 Techniques to Make Requirements More Creative and Innovative)	
	16:00~ 17:30	Open Forum: Formal Research Poster Presentations and Demonstrations [Room 4]			
	18:00 ~ 20:00	Reception [Dining Room (B1F)]			
Sep. 9 (Thu)	9:00~ 10:30	Awards Presentation: Best Paper of the Conference, Highlights of the Day [Hall 1] Keynote 2: Toward Realizing the Ubiquitous Network Society, Ikuo Minakata (Matsushita Electric, Japan)			
	11:00 ~ 12:30	Papers 4: Handling Non-Functional Requirements	Industry Reports 1: Selecting & Managing Requirements Processes & Tools	Vendor Presentations 2: OGIS-RI, CATS	Tool Exhibit [Room 33, 34, 35, 36]
	14:00 ~ 15:30	Papers 5: Organisational & Socio-Technical Systems	Industry Reports 2 Requirements for Transport & Web Systems	State of the Practice Talks 1: Current Practices, D. Gause, and Traceability, J. Dick	
	16:00~ 17:30	Papers 6: RE for COTS-based Systems	Panel 2: Research Directions for Requirements Theories	State of the Practice Talks 2: RE in RUP, J. Heumann, and Scenarios, I. Alexander	
	18:00 ~ 21:30	Banquet (Tour of Japanese Garden & Dinner with Attraction) [Bus will leave from the entrance of the school at 17:45]			
Sep. 10 (Fri)	9:00 ~ 10:30	Awards Presentation: Most Influential Paper Award, Highlights of the Day [Hall 1] Keynote 3: Goal-Oriented Requirements Engineering: A Roundtrip from Research to Practice, Axel van Lamsweerde (University of Louvain, Belgium)			
	11:00 ~ 12:30	Papers 7: Visualising & Animating Requirements and Goals	Papers 8: Managing Requirements Change & Traceability	State of the Practice Talks 3: R. Gonzales & S. Guerra	
	14:00~ 15:30	Papers 9: Structuring and Transforming Requirements	Panel 3: Requirements Engineering Education	State of the Practice Talks 4: Requirements Engineering Challenges for COTS Products, X. Franch, UPC, Spain	
	15:30 ~ 16:00	Closing Session and Invitation to RE '05 [Hall 1]			

Keynotes

Keynote 1: September 8, 2004 (Wed), 10:00~11:00

How Creative Design Happens

Nigel Cross, Professor, The Open University, UK

Professor Nigel Cross is a leading international figure in the world of design research. With academic and practical backgrounds in architecture and industrial design, he has conducted research in computer-aided design, design methodology and design education since the nineteen-sixties. His current principal research interest is in design cognition, based on studies of expert and exceptional designers. He has been a member of the academic staff of the UK's pioneering, multi-media Open University since 1970, where he has been responsible for, or instrumental in, a wide range of distance-education courses in design and technology. Recent books by Professor Cross include the third edition of his successful textbook on *Engineering Design Methods*, and he has been a co-editor of books on *Research in Design Thinking*, *Analysing Design Activity and Expertise in Design*. Professor Cross is also Editor-in-Chief of the *International Journal of Design Studies*.



Keynote 2: September 9, 2004(Thu), 9:30~10:30

Toward Realizing the Ubiquitous Network Society

Ikuo Minakata, Executive Technology Officer, Panasonic, Matsushita Electric Industrial Co., Ltd. , Japan

Ikuo Minakata is the Director of the company's Standardization & Collaboration center of Matsushita Electric Industrial Co., Ltd. (Panasonic) in Osaka, Japan. In this capacity, he is responsible for Panasonic's digital media standards activity which covers media, consumer electronics and software architecture and networks as well technology alliances. Mr. Minakata also serves as the board of directors of the Digital Living Network Alliance, the Co-Chairman of the CE Linux Forum Steering Committee, Executive Committee member of the Java Communication Process and member of the board of the UPnP Steering Committee. Upon receiving an MS degree in Information Engineering from the School of Graduate Studies of Osaka University in 1978, Mr. Minakata entered Panasonic as a researcher. Among his first accomplishments were contributions in the development of operating systems for office computers and word processors. In 1986, Mr. Minakata studied at the University of California at Berkeley as a graduate researcher and contributed to the development of the object-oriented software within the environment of Silicon Valley. After returning to his laboratory in Japan, he managed teams working on digital-appliance apparatus operating systems and the development and standardization of middleware.



Keynote 3: September 10, 2004 (Fri), 9:30~10:30

Goal-Oriented Requirements Engineering: A Roundtrip from Research to Practice

Axel van Lamsweerde, Professor, University of Louvain, Belgium

Axel van Lamsweerde is Full Professor at the Université catholique de Louvain. He has been research associate at Philips Research Labs and professor at the universities of Namur, Brussels, and Louvain (Belgium). He has also been research fellow at the University of Oregon and the Computer Science Laboratory of SRI International (Menlo Park, CA). He is co-founder of two software technology transfer centers supported by the European Union. Since 1990 he has been instrumental in the development and transfer of the KAOS goal-oriented requirements engineering language, method and toolset. He has been editor-in-chief of the ACM Transactions in Software Engineering and Methodology (TOSEM), program chair of major international software engineering conferences including ESEC'91 and ICSE'94, and founding member of the IFIP WG2.9 Working Group on Requirements Engineering. He is an ACM Fellow since 2000.



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Technical Program

Sep. 8 (Wed)

Time	Track A [Room 3]	Track B [Room 4]	Track C [Room 4]
9:30 ~ 11:00	Welcome & Opening Remarks, Highlights of the Day [Hall 1] Keynote 1: How Creative Design Happens, Nigel Cross (The Open University, UK)		
11:00~ 11:30 Coffee Break [Room 33, 34, 35, 36]			
Papers 1: Use Cases in Requirements Chair: Oscar Pastor, <i>U of Plitecnica de Valencia, Spain</i> Use Case Estimation- The Devil is in the Detail, <i>K. Vinsen, ADI, Australia, D. Jamieson, and G. Callender, Curtin U. of Tech., Australia</i> Precise Specification and Validation of Transactional Business Software, <i>A. Correa, and C. Werner, Federal U. of Rio de Janeiro, Brazil</i> Customer Experience Requirements for Multi-platform Service Interaction: Bringing Services Marketing to the Elicitation of User Requirements, <i>L. Patrício, J. Cunha, U. of Porto, Portugal, R. Fisk, U. of New Orleans, USA, and N. Nunes, U. of Madeira, Portugal</i>		Panel 1: Future Challenges of Requirements Engineering Chair: Mikio Aoyama, <i>Nanzan U. Japan</i> Panelist: Nancy Mead, <i>SEI, USA</i> , Klaus Pohl, <i>U. of Duisburg-Essen, Germany</i> , Motoshi Saeki, <i>Tokyo Inst. of Tech., Japan</i> , and David Walker, <i>Borland Software, USA</i>	Vendor Presentations 1: Chair: Katsuro Inoue, <i>Osaka U., Japan</i> Requirements Success with Borland CaliberRM, <i>J. Park, Borland, USA</i> Applying Business Modeling Methodology to Real Development Projects: Some Lessons Learned, <i>S. Saito, NTT DATA, Japan</i> Importance of Requirement Management in Current Development and Powerful RM Solution "DOORS", <i>M. Honda, Telelogic Japan, Japan</i>
13:00~14:00 Lunch [Dining Room (B1F)]			
Papers 2: Aspect-Oriented Requirements Chair: Michael Goedicke, <i>U. of Essen, Germany</i> From Goals to Aspects: Discovering Aspects from Requirements Goal Models, <i>Y. Yu, J.C. Leite, and J. Mylopoulos, U. of Toronto, Canada</i> From Aspectual Requirements to Proof Obligations for Aspect-Oriented Systems, <i>S. Katz, and A. Rashid, Lancaster U., UK</i> Modelling, Composing and Validating Scenario-Based Requirements with Aspects, <i>J. Araujo, U. of Nova de Lisboa, Portugal, J. Whittle, NASA, USA, and D-K Kim, Colorado State U., USA</i>		Papers 3: Improving Requirements Processes Chair: Didar Zowghi, <i>U. of Tech., Sydney, Australia</i> Requirements Engineering Process Improvement Based on an Information Model, <i>J. Dörr, Fraunhofer IESE, Germany, B. Paech, U. of Heidelberg, Germany, and M. Koehler, Nokia STP, Germany</i> Architecture-driven Problem Decomposition, <i>L. Rapanotti, J. Hall, M. Jackson, and B. Nuseibeh, Open U., UK</i> Engineering Patterns for RE in Small and Medium Projects, <i>L. Hagge, and K. Lappe, Deutsches Elektronen-Synchrotron, Germany</i>	Mini-Tutorial: He's Just Making It All Up!(or 15 Techniques to Make Requirements More Creative and Innovative) Chair: Neil Maiden, <i>City U., London, UK</i> Dan Berry, <i>U. of Waterloo, Canada</i> , Don Gause, <i>State U. of New York at Binghamton, USA</i> , Suzanne Robertson and James Robertson, <i>Atlantic Systems Guild, UK</i>
15:30~16:00 Coffee Break [Room 33, 34, 35, 36]			
16:00~ 17:30 Open Forum: Formal Research Poster Presentations and Demonstrations [Room 4] Chair: Andrea Zisman, <i>City U. London, UK</i> Posters Defining Requirements at Different Levels of Abstraction, <i>S. Buhne, G. Halmans, K. Pohl, U. of Duisburg-Essen, Germany, and M. Weber, Dainler Chrysler, Germany, H. Kleinwechter, and T. Wierczoch, Carmeq GmbH, Germany</i> A Framework for the Definition of Metrics for Actor-Dependency Models, <i>X. Franch, G. Grau, and C. Quer, Universitat Politecnica de Catalunya, Spain</i> Improving the Separation of Non-Functional Concerns in Requirements Artifacts, <i>G.M.C. de Souza, and J. B. de Castro, U. Federal de Pernambuco, Brazil</i> Quantifying Non-Functional Requirements: A Process Oriented Approach, <i>R. Hill and J. Wang, U. of Illinois Urbana-Champaign, USA</i> Using Abuse Frames to Bound the Scope of Security Problems, <i>L.C. Lin, B. Nuseibeh, D. C. Ince, and M. Jackson, Open U., UK</i> Research Demos QM: A Tool for Building Software Quality Models, <i>J. P. Carvalho, X. Franch, G. Grau, and C. Quer, U. Politecnica de Catalunya, Spain</i> ART-SCENE: Enhancing Scenario Walkthroughs with Multi-Media Scenarios, <i>K. Zachos, Institut Informatk V, Germany, and N. Maiden, City U., UK</i> Active Tool Support for Requirements Engineering Through RETH, <i>H. Kaindl, Vienna U. of Tech., Austria</i> An Environment for Use Cases based Requirements Engineering, <i>S.S. Some, U. of Ottawa, Canada</i>			
18:00 ~ 20:00 Reception [Dining Room (B1F)]			

Sep. 9 (Thu)

Time	Track A [Room 3]	Track B [Room 4]	Track C [Room 4]
9:00~10:30	Awards Presentation: Best Paper of the Conference, Highlights of the Day [Hall 1] Keynote 2: Toward Realizing the Ubiquitous Network Society, Ikuo Minakata (Matsushita Electric Industrial Co., Ltd. , Japan)		
10:30~ 11:00 Coffee Break [Room 33, 34, 35, 36]			
Papers 4: Handling Non-Functional Requirements Chair: Al Davis, <i>U. of Colorado at Colorado Springs, USA</i> The Effect of Trust Assumptions on the Elaboration of Security Requirements, <i>C. Haley, R. Laney, Open U., UK, J. Moffett, U. of York, UK, and B. Nuseibeh, Open U., UK</i> Identifying Stakeholders and Their Preferences about NFR by Comparing Use Case Diagrams of Several Existing Systems, <i>H. Kaiya, A. Osada, and K. Kajiri, Shinshu U., Japan</i> Composing Requirements Using Problem Frames, <i>R. Laney, L. Barroca, M. Jackson, and B. Nuseibeh, Open U., UK</i>		Industry Reports 1: Selecting & Managing Requirements Processes & Tools Chair: Shuichiro Yamamoto, <i>NTT DATA, Japan</i> Semantic Normal Form Dramatically Enhances System Quality, <i>R. Stamper, U. of Staffordshire, UK and Y. Ades, U. of Greenwich, UK</i> Requirements Management Process Selection, <i>A. Padula, HP, USA</i> Requirements for Requirements Management Tools, <i>M. Hoffman, N. Kuhn, M. Weber, Daimler-Chrysler AG, Germany, and M. Bittner T U Berlin, Germany</i> The Conundrum of Categorizing Requirements: Managing Requirements for Learning on the Move, <i>D. Haley, B. Nuseibeh, H. Sharp, and J Taylor, Open U., UK</i>	Vendor Presentations 2: Chair: T. Nakamura, <i>Tokyo U. of Tech., Japan</i> SOA Solution Halibut: Introduction of the Development tool 'Halibut' for Realizing the System Integration by SOA and a Run Time Platform Solution, <i>M. Akara, OGIS-RI, Japan</i> Introduction of Effective Solution with CAN System Using "CANoe" Joined High Level Design Tool "ZIPC", <i>Y. Kawai, CATS, Japan</i>
13:00~14:00 Lunch [Dining Room (B1F)]			

Track A [Room 3]	Track B [Room 4]	Track C [Room 4]
Papers 5: Organisational & Socio-Technical Systems Chair: Colette Rolland, <i>U. Paris 1 Panthéon Sorbonne, France</i> Developing a Domain-Specific Cross-Organizational RE Method, <i>J. Gordijn, V. Kartseva, J. Schildwacht, Vrije U., Netherlands, R. Wieringa, U. of Twente, Netherlands, and H. Akkermans, Vrije U., Netherlands</i> Defining Early IT System Requirements with Regulation Principles: The Lightswitch Approach, <i>G. Regev, and A. Wegmann, Ecole Polytechnique Fédérale de Lausanne, Switzerland</i> Human-centred Requirements Engineering, <i>A. Gregoriades, J. Shin, A. Sutcliffe, UMIST, UK</i>	Industry Reports 2 Requirements for Transport & Web Systems Chair: Tomoyuki Arao, <i>Nomura Research Institute, Japan</i> Requirement-Driven Approach To Interoperable Traveller Support System Specification, <i>R. Tsuchiya, A. Matsuoka, K. Goto, K. Seki and T. Ogino, Railway Technical Research Institute, Japan</i> Experiences in Managing an Automotive Requirements Engineering Process, <i>N. Heumesser and F. Houdek, Daimler Chrysler AG, Germany</i> Requirements Engineering in the Development of Innovative Automotive Embedded Software Systems, <i>A. Puschnig, Daimler Chrysler Track Product Creation, Germany, and R. Kolagari Daimler Chrysler AG Research and Technology, Germany</i> A Context-Driven Use Case Creation Process for Specifying Automotive Driver Assistance Systems, <i>H. Omasreiter and E. Metzker, Daimler Chrysler AG Research Information and Communication, Germany</i> Developing A Requirements Specification For A Web Service Application, <i>J. Chris Gibson, Protera Software, USA</i>	State of the Practice Talks 1: Chair: Michel Lemoine, <i>ONERA Cdt/DPRS/SAE, France</i> Current Practices In Requirements Engineering: Where have we been and where are we now? More Importantly, where must we go from here?, <i>D. Gause, State U. of New York at Binghamton, USA</i> Requirements Traceability: Whither, Why and Wherefore, <i>J. Dick, Telelogic, Sweden</i>
15:30~16:00 Coffee Break [Room 33, 34,35, 36]		
Papers 6: RE for COTS-based Systems Chair: Eric Dubois, <i>Centre de Recherche Public Henri Tudor, Luxembourg</i> COTS Tenders and Integration Requirements, <i>S. Lauesen, IT U. of Copenhagen, Denmark</i> Understanding Requirements in Enterprise Systems Projects, <i>J. Gulla, Norwegian U. of Science and Technology, Norway</i> Expanding Horizons of Requirements Engineering: Examining Requirements during Groupware Tool Diffusion, <i>G. Mark, M. Bergman, UC Irvine, USA, and S. Poltrock, Boeing, USA</i>	Panel 2: Research Directions for Requirements Theories Chair: Roel Wieringa, <i>U. of Twente, Netherlands</i> Panelists: TBA on site (Some of the Great and Good from the Requirements Community!)	State of the Practice Talks 2: Chair: Martin Glinz, <i>U. of Zurich, Switzerland</i> Requirements in the Rational Unified Process, <i>J. Heumann, Rational Software/IBM, USA</i> Scenarios, Stories, and Use Cases in the Requirements Process, <i>I. Alexander, Scenario Plus, UK</i>
18:00 ~ 21:30 Banquet (Tour of Japanese Garden & Dinner with Attraction) [Bus will leave from the entrance of the school at 17:45]		

Sep. 10 (Fri)

Time	Track A [Room 3]	Track B [Room 4]	Track C [Room 4]
9:00 ~ 10:30	Awards Presentation: Most Influential Paper Award, Highlights of the Day [Hall 1] Keynote 3: Goal-Oriented Requirements Engineering: A Roundtrip from Research to Practice, Axel van Lamsweerde (University of Louvain, Belgium)		
10:30~ 11:00 Coffee Break [Room 33, 34,35, 36]			
Papers 7: Visualising & Animating Requirements and Goals Chair: Dan Berry, <i>U. of Waterloo, Canada</i> Visual Variability Analysis with Goal Models, <i>B. Gonzales-Baixauli, U. of Valladolid, Spain, J.C. Leite, and J. Mylopoulos, U. of Toronto, Canada</i> Fluent-Based Animation: Exploiting the Relation between Goals and Scenarios for Requirements Validation, <i>S. Uchitel, R. Chatley, J. Kramer, and J. Magee, Imperial College London, UK</i> Goal-Oriented Requirements Animation, <i>H. Tran Van, a. van Lamsweerde, of Louvain, Belgium, P. Massonet, and C. Ponsard, CETIC Research Center, Belgium</i>		Papers 8: Managing Requirements Change & Traceability Chair: Klaus Pohl, <i>U. of Duisburg-Essen, Germany</i> A Heterogeneous Solution for Improving the Return on Investment of Requirements Traceability, <i>J. Cleland-Huang, G. Zement, and W. Lukasik, DePaul U., USA</i> Using Card Sorting Technique to Classify Requirements Change, <i>N. Nurmiani, D. Zowghi, and S. Fowell, U. of Technology, Sydney, Australia</i> Helping Analysts Trace Requirements: An Objective Look, <i>J. H. Hayes, A. Dekhtyar, S. K. Sundaram, and S. Howard, U. of Kentucky, USA</i>	State of the Practice Talks 3: Chair: Sanya Uehara, <i>Fujitsu Labs., Japan</i> Systems Engineering: A Vision for the Future, <i>R. Gonzales, Sandia National Laboratories, USA</i> Safety Requirements, Safety Claims and Safety Cases, <i>S. Guerra, Adelard, UK</i>
13:00~14:00 Lunch [Dining Room (B1F)]			
Papers 9: Structuring and Transforming Requirements Chair: Jaelson Castro, <i>U. Fed. de Pernambuco, Brazil</i> RETNA: From Requirements to Testing in a Natural Way, <i>S. Mukhopadhyay, NASA/WVU SRL, USA</i> OMML: A Behavioural Model Interchange Format, <i>R. Hall, AT&T Labs Research, USA, and A. Zisman, City U. London, UK</i> Speeding up Requirements Management in a Product Software Company: Linking Customer Wishes to Product Requirements through Linguistic Engineering, <i>J. Nattoch Dag, Lund U., Sweden, V. Gervasi, U. of Pisa, Italy, S. Brinkemper, Utrecht U., Netherlands, and B. Regnell, Lund U., Sweden</i>		Panel 3: Requirements Engineering Education Chair: Didar Zowghi, <i>U. of Tech., Sydney, Australia</i> Panelists: Don Gause, <i>State U. of New York at Binghamton, USA</i> , Nancy Mead, <i>SEI, USA</i> , Jo Atlee, <i>U. of Waterloo, Canada</i> , and Neil Maiden, <i>City U., London, UK</i>	State of the Practice Talks 4: Chair: Frank Houdek, <i>DaimlerChrysler, Germany</i> Requirements Engineering Challenges for COTS Products, <i>X. Franch, UPC, Spain</i>
15:30 ~ 16:00	Closing Session and Invitation to RE '05 [Hall 1]		

Tool Exhibition

9/8(Wed)~9/9(Thu) [34]	9/8(Wed)~ 9/9(Thu) [35]	9/9(Thu) [36]
Borland: Req. Management Tool CaliberRM CATS: CASE Tool "ZIPC" for Embedded Telelogic: Req. Management Tool "DOORS"	NTT DATA: Biz Integral OGIS-RI: SOA Solution Halibut	Fujitsu: Requirements Definition & Prototyping Environment for Web-based Business Application Development Microsoft: TBA

State of the Practice Talks

State of the Practice Talks 1

Current Practices In Requirements Engineering: Where have we been and where are we now? More importantly, where must we go from here?

Donald C. Gause, *State U. of New York at Binghamton, USA*

We will take a look at these past twelve years to see just what has transpired. Which approaches have worked, what has failed, and what can we learn from these for today's RE? As we move into the present, we will look at our influence and successes in addressing important RE issues and opportunities. As the bottom line, how has RE improved the process of designing complex systems and how are we now able to develop more successful products? We quickly look to the future to outline a number of problem areas that we feel are rich in opportunity. These include such areas as: encouraging more active management involvement, improving our understanding of the value-added via various RE methodologies, closing the gap between RE research and RE practice, incorporating uncertainty early in the design process, and identifying underlying fundamental principles of RE to avoid developing new methodologies every time we are posed with a new, unique problem domain: web-based computing, embedded systems, security-critical systems, synchronous/asynchronous systems).

Requirements Traceability: Whither, Why and Wherefore

Jeremy Dick, *Telelogic, Sweden*

For many organizations, traceability has become an end in itself. It is perhaps time to revisit traceability as an enabler for many requirements management processes. This paper briefly traces the history, surveys the state-of-the-art, and discusses the future of requirements traceability. It presents the latest thinking on the concept of "Rich Traceability", and discusses the vital role of traceability in change management. The conclusions are that there are some simple steps than can be taken by organizations to improve their processes through enhancing their use of requirements traceability.

State of the Practice Talks 2

Requirements in the Rational Unified Process

Jim Heumann, *Rational Software, IBM Software Group, USA*

This talk will provide an overview of the state-of-RUP with respect to requirements. Requirements play a central role within the Rational Unified Process (RUP). The talk will start with a brief history of the requirement discipline and how it got to where it is today. Next will come an explanation of how requirements are structured and used within the process. The presentation will also mention a variant called RUP for Systems Engineering and will highlight requirements within that framework. After that will come an explanation of some recent improvements in RUP as well a discussion of its shortcomings. The talk will finish-up with some short usage stories highlighting how the RUP requirements discipline has been used by customers in various industries.

Scenarios, Stories, and Use Cases in the Requirements Process

Ian Alexander, *Scenario Plus, UK*

The talk will show how teams can use scenarios to discover and validate requirements; to guide the design and implementation of software; to assist the selection of test cases; and even to select appropriate development life-cycle processes. The popularity of use cases has meant much of the thinking on scenarios has been concentrated on software development. It will illustrate how scenarios can help you to discover and document the requirements for your systems. It will show how you can use them to define what it will have to do, but also 'non-functional' requirements: both desired qualities (e.g. reliability and security) and constraints (e.g. cost and weight). Scenarios have been applied to businesses as diverse as automotive, air traffic control, telecommunications, railway, civil engineering, and software. I will show how scenarios can help you to build systems that meet the needs of your business.

State of the Practice Talks 3

Systems Engineering: A Vision for the Future

Regina Gonzales, *Sandia National Laboratories, USA*

Current SE (Systems Engineering) processes and practices must change in order to meet the demands of emerging systems. We are faced with enormous momentum of technology and demands on that technology. Since engineering in general, and SE in particular, is the art and practice of enabling the realization of systems using technology, we must systems engineer our "Engineering". Besides the complexity and interconnectedness of systems today, we are faced with corporate infrastructure that is bogged down and a diverse and transitory workforce. In addition, many political, economic, social, technological, ecological, and legal constraints encumber the ability to realize systems effectively. This presentation will provide an overview of what INCOSE is doing to achieve the Technical Vision and the results of this project so far. RE plays a crucial role in SE to first understand the problem and the application domains, and then formulating, managing and communicating a holistic specification of requirements for solutions.

Safety requirements, safety claims and safety cases

Sofia Guerra, *Adelard, UK*

The consequences of bad requirements are even more grave when the failure of the system may cause injury or death to human beings. The safety of such systems depends on the correct definition and realisation of the safety requirements. Safety requirements are those requirements of the functions intended to achieve or maintain a safe state of the system (IEC 61508). The justification for the adequacy of the safety requirements and their correct implementation should be based on a specific argument and a set of claims, supported by appropriate evidence. I discuss the relationship between requirements, safety requirements and safety claims, and how these are combined into an argument about the safety of a system for a given application in a specific operating environment. Such an argument, supported by a body of evidence that provides a valid case that a system is safe is what it is called a *safety case*. Specific techniques for the elicitation and validation of safety requirements are considered, and their regulatory constraints set.

State of the Practice Talks 4

Requirements Engineering Challenges for COTS Products

Xavier Franch, *Universitat Politècnica de Catalunya (UPC), Spain*

Commercial Off-The-Shelf (COTS) products can now be found in most business, government and defense organizations. Selecting, procuring and integrating COTS products are core activities of most systems development processes. Indeed COTS products are the predominant source of software for a wide range of today's applications. However few existing requirements engineering methods, techniques and tools address COTS-based software development processes. Potential customers need requirements to select between candidate COTS products, write procurement contracts, guide COTS product integration and explore different product architecture configurations. Some open issues are currently recognized as challenges for both the RE and COTS communities. This following open issues will be the core of the talk: *Deciding whether to COTS or not to COTS., new role of requirements., source of requirements., specificities of COTS requirements., new types of requirements., and dealing with evolution.*

Panels

Panel 1: Future Challenges of Requirements Engineering

RE (Requirements Engineering) is one of the most challenging area in software engineering. Yet, it is not only research topics, but also a practical area where practitioners are fighting in every application domains. Even software systems are getting more and more ubiquitous and invisible embedded into our daily life while they are connected over networks and are forming global systems. We depend on software. So, non-functional requirements, such as security and safety, are most critical issues in software development. To solve these issues is beyond exploration of conventional wisdom. We are facing new frontier of RE. This panel is intended to share the issues of RE emerging in our changing world, and explore the direction of future research challenges. The panel is not a "panel" but a roundtable, where all the participants can toss the issues upon, and show any idea and possibility, and explore from various view points.

Panel 2: Research Directions for Requirements Theories

More than 10 years of requirements research have brought us significant contributions to our understanding of RE. Some of these results have been obtained by transferring knowledge from adjacent sciences, such as formal specification and software engineering, to RE. In some cases, fields farther away such as psychology and linguistics have acted as a source of ideas. Yet other results consist of the invention of novel techniques developed within the field of RE itself. In this panel, we want to take stock of what has been achieved and look at future directions of research. Leading experts in requirements engineering, each a significant contributor to the field, will each mention of at most five results of the last 10 years of research that they consider significant, excluding their own work. The experts have had no knowledge of the names of the other panelists, so that there is no bias towards each other's work. Secondly, each expert will assess the impact of these results on practice, and finally each expert will mention up to three topics that they consider worthy of future research.

After presenting the panelists' personal visions of the field, panelist and the audience will discuss research issues such as the following:

- Is there consensus about significant achievements of the last 10 years?
- Do the significant achievements consist of novel techniques or of novel theories of requirements?
- what do the RE techniques invented by researchers contribute to the accumulation of requirements theories?
- What is the impact of these research results on industrial practice?
- What is the impact of industrial practice on research?
- What research methods are appropriate to foster further increase in knowledge?
- What research methods can help in improving the interaction between research and practice?
- Do researchers need to worry about their contribution to practice?

Panel 3: Requirements Engineering Education

Most software engineering university programs at undergraduate level take the assumption that the requirements have already been elicited and captured in a document and students' experience begins from early design stage. Moreover, the current computer science or software engineering curriculum at postgraduate level does not adequately cover all of skills needed for effective requirements engineering in reasonable depth. This paucity in the current RE education curriculum provides the motivation for this panel.

The purpose of this panel is to review the status of RE university education and the industrial needs for RE training. Also to increase awareness, explore alternatives and identify solutions concerning the teaching of RE at the undergraduate and graduate level of software and systems related university programs. In this panel we will discuss the importance and role of RE education and training as well as the challenges we face in developing the most relevant curriculum for RE education.

Tool Exhibition

Requirements Management Tool CaliberRM

Borland Software Corporation

Borland® CaliberRM™ is a requirements management system designed to speed the successful delivery of software with reduced risk in project delays and budget overruns. It facilitates better understanding of requirements at an early stage and better control of projects as requirements change throughout the project lifecycle. Please visit the Borland booth at Room 34 to experience the power of CaliberRM. A special session (English) will be held next to the Borland booth on September 9 (Thursday) 15:35 to 15:55, at which you can learn the effective use of CaliberRM for successful requirements management.

CASE Tool "ZIPC" for Embedded Systems

CATS CO., LTD.

[1] CASE Tool "ZIPC" for Embedded developers and designers

[1]-1: Combination with CANoe

[1]-2: Statemate Converter

[1]-3: Stateflow Converter

[2] For system architects design and debugging tool "XModelink series".

[2]-1: SoC Modeler

[2]-2: System C Debugger

[3] Available GUI design for product model with "Drawrial

Requirement Management tool "DOORS"

Telelogic

Telelogic "DOORS", the world's leading requirement management tool, is multi-platform, enterprise-wide system designed to capture, link, trace, analyze and manage changes to information to ensure a project's compliance to requirements and standards. By effective requirement management, the application is completed on time, within budget, and with all of the features and functionality originally specified.

"DOORS/Analyst" is a UML 2.0-based modeling tool that operates within DOORS. Integration between Telelogic "TAU" will enable teams to work with a common visual language and share models all the way from requirement capture through system design and development.

Biz Integral

NTT DATA CORPORATION

Biz Integral is a powerful Web Services-based framework for business process-driven IT system development. Biz Integral generates executable artifacts composed of web services from requirements of business process. The requirements are defined as UML activity diagrams and predicate logics. The UML activity diagrams represent the process flow of the entire system you develop. Predicate logics are used for discovering most suitable web services. Biz Integral is effective in the continuous re-organization of an IT system to adapt to today's rapidly changing business environment. It speeds up development and works out cost-cutting. A demonstration of Biz Integral is prepared for you at our booth.

SOA Solution Halibut

OGIS-RI(Osaka Gas Information System Research Institute Co., Ltd.)

Halibut and Konesha are tools used in the SOA (Service-Oriented Architecture) solution framework developed by OGIS-RI. Halibut is composed of Halibut Editor which is a plug-in to UML modeling tool, Konesha, to enable easier generation of BPEL (service process flow definition file), and Halibut Server which actually executes services based on the generated BPEL definition flow file. OGIS will present these tools by doing a simple requirements engineering demonstration on business modeling.

Requirements Definition and Prototyping Environment for Web-based Business Application Development

Fujitsu Limited

We present a development environment that is widely used in Fujitsu for Web-based business application systems. The environment, called Ezframework, contains facilities to simulate screen interactions, to manage meta-data and interfaces, to generate components to handle data-items, which are designed considering characteristics of business applications. Ezframework is constructed on a Struts-like framework, adding a model for screen structure and events sequence, based on our experience on mission critical applications.

Tutorials

T-1 Requirements-Driven Product Line Development: Scoping for Reusability, Modeling for Implementability

Chair: Harumi Watanabe, *Tokai University, Japan*

Lecturer: Klaus Schmid, *Fraunhofer IESE, Germany*

In this tutorial we will discuss these methodological challenges and will discuss concepts and techniques to overcome them. In particular, we will describe how to construct a product portfolio using simple feature analysis techniques. This will provide the basis for a systematic ROI analysis of reuse opportunities (reuse scoping). For capturing variabilities in product line description various techniques exist (e.g., feature trees). We will discuss them and provide an approach that can be applied in order to extend existing RE notations in a systematic manner for product line usage in order to support a seamless transition to product line engineering.

T-2 Requirements: the Bridge between Business and Development

Chair: Takako Nakatani, *S-Lagoon, Japan*

Lecturer: Suzanne Robertson, *Atlantic Systems Guild UK*

This practical tutorial is about the different meanings that requirements have for different people in an organisation and how to build a bridge that connects those meanings. The 5 sections of the tutorial are:

1). Surveying the Terrain: Identifying and involving the appropriate stakeholders. 2) A Generic Starting Point: A model that packages the atomic requirements for different viewpoints. 3) Tailoring to Suit Your Project: How to tailor the model for a specific project. 4). Refining to Capture Experience: Techniques for iteration and involvement. Monitoring the stability of the model. 5) Using the Model: Input to designing the project plan. Responsibility for knowledge, level of detail, quality criteria, packaging of knowledge, agreed traceability.

T-3 Requirements-Based Product Line Engineering

Chair: Harumi Watanabe, *Tokai University, Japan*

Lecturers: Mike Mannion, *Glasgow Caledonian U., UK* and Hermann Kaindl, *Vienna U. of Tech., Austria*

This tutorial presents the experiences of requirements reuse using a Method for Requirements Authoring and Management (MRAM). MRAM is a method for establishing and selecting from product line requirements that addresses this concern. Using MRAM means the management of the requirements definition process is more effective and efficient, producing more accurate and complete requirements documents. TRAM (Tool for Requirements Authoring and Management) is a software tool to support MRAM that utilises current proven office technology (MS-Word, MS-Access). The tutorial presents the results of MRAM/TRAM as it has been applied to a real-world application.

T-4 Requirements and Creativity: How to Integrate Invention into Requirements Engineering

Chair: Takako Nakatani, *S-Lagoon, Japan*

Lecturers: Suzanne Robertson and James Robertson, *Atlantic Systems Guild, UK*

Sections of the tutorial are: 1) Creativity – what is it and why do we need it? Principles from the field of creative thinking. 2) Inventive Requirements Triggers: How to use inventive requirements triggers: Service, Ideas, Speed, Information, Technology, Choices, Participation, Design, Origin, Senses, to lead to competitive and innovative products. 3) The story of the air traffic control workshops: How we ran the workshops. Quantification of the results. 4) Experts and Analogies: How to use experts from other fields and analogical reasoning to generate creative ideas. 5) Integrating Creativity: How to integrate creativity and invention into your existing requirements engineering process. Planning and running creative workshops. 6) Creative Action: Key ideas, lessons learned and action plan.

T-5 Developing Practical Scenarios

Chair: Rieko Yamamoto, *Fujitsu Labs, Japan*

Lecturers: Ian Alexsander, *Scenario Plus, UK* & Alistair Mavin, *Praxis, UK*

This hands-on tutorial gives participants the theory and allows them to experience the practice of scenario analysis. We offer a simple, well-defined method based on an iterative, human-centred process. In our process, we begin by defining the mission and objectives. Next, we identify stakeholders and their viewpoints. Then we turn our attention to scenarios, and successively tell the primary stories as scenarios; explore exception scenarios; and validate the discovered scenarios. A single example of an embedded (hardware/software) system is used in all the exercises. This is a multi-purpose portable device for outdoor sportspeople such as climbers, walkers, campers and fishermen, to help them with navigating, receiving weather forecasts, obtaining help if in distress, and other functions thought of by participants in the exercises. Both instructors will supply background papers on scenarios to tutorial participants. We intend to provide a Japanese translation of the tutorial to encourage local participation.

T-6 Software Traceability

Chair: Rieko Yamamoto, *Fujitsu Labs, Japan*

Lecturers: George Spanoudakis and Andrea Zisman, *City U. London, UK*

In this tutorial, we present an overview of the state of the art and practice in software traceability, discuss the main scientific and technological advances in this area, present the available technologies and their contributions, and identify issues that require further research in the field.

The tutorial is intended for practitioners, managers, researchers, and teachers with interests in software development and the management of software systems and development processes. The tutorial may also be attended by students that follow a university program in computing at all levels.

T-7 Financially Informed Requirements Prioritization

Chair: Mikio Aoyama, *Nanzan U., Japan*

Lecturer: Jane Cleland-Huang, *DePaul U., USA*

This tutorial introduces a financially responsible approach to requirements prioritization known as the Incremental Funding Method (IFM) and described in the book "Software by Numbers: Low-risk, High-Return Development". Attendees will learn how to group requirements into "chunks" of revenue-generating functionality known as Minimal Marketable Features (MMFs), and how to carefully sequence those MMFs in order to maximize the overall value of the project, reduce initial funding investments, and manipulate other project metrics such as the time needed for a project to reach break-even status. A gentle introduction to financial analysis will also equip participants to analyze and understand the impact of other requirements prioritization decisions upon the financial returns of a project. This process is applicable within any iterative development approach such as the Rational Unified Process or within a more agile environment. In addition to introducing the concepts and techniques needed to implement IFM within a real project, the tutorial will include hands-on activities in which participants will apply the principles they have learned.

J-1 Introduction to Scenario Analysis [In Japanese]

Chair: Shuichiro Yamamoto, *NTT DATA, Japan*

Lecturer: Kentaro Go, *Yamanashi U., Japan*

J-2 Requirements Traceability Methodology and Its Application to UML [In Japanese]

Chair: Kenji Takahashi, *NTT, Japan*

Lecturers: Shuichiro Yamamoto and Shuichiro Azuma, *NTT DATA, Japan*

Workshops

W-1 CERE04: 2nd International Workshop on Comparative Evaluation in Requirements Engineering, September 7, 2004

The need for an assessment of the progress made in RE research is now commonly felt across the RE community. CERE focuses on comparative studies in Requirements Engineering, both in terms of results of actual evaluations of and comparisons between published methods, tools and techniques, and of comparison methods themselves.

W-2 RECOTS04: 2nd International Workshop on Requirements Engineering for COTS Components, September 7, 2004

Commercial Off-The-Shelf (COTS) software products play an important role in software systems development. The adoption of this technology raises many challenges in software engineering including finding requirements engineering and provides a point of convergence for the communities of RE and COTS-based systems developers. The workshop aims at to discuss such open issues.

W-3 REP04: International Workshop on Requirements Engineering Patterns, September 6, 2004

This international workshop seeks to collect successful Requirements Engineering Patterns which have been observed in at least two different projects. The objective is to make RE expert knowledge and experience available to organizations who are in the process of adopting RE, and to develop a pattern format for promoting reusability of RE knowledge and experience.

W-4 RHAS04: International Workshop on Requirements for High Assurance Systems, September 6, 2004

The workshop goal is to bring together researchers and practitioners from the fields of safety engineering and requirements engineering to exchange ideas and their experiences concerning the engineering of safety requirements, safety constraints, and safety-critical functional, data, and interface requirements.

W-5 SoRE04: International Workshop in Service-oriented Requirements Engineering, September 6, 2004

The workshop aims at hosting significant and high-quality contributions in all topics related to requirements engineering for service-oriented software, with the goal of letting participants gain insights into the current state of the art and future challenges, create synergies through integration, and foster cross-cooperation.

W-6 IWPSE04: International Workshop on Principles of Software Evolution, September 6 and 7, 2004

Software evolution has become an emerging research subject and is attracting the attention of researchers and practitioners. The IWPSE aims at to discuss a wide range of topics in software evolution, to foster the better understanding of the nature of software evolution, and to accelerate research activities on the subject.

W-7 AuRE04: International Workshop on Automotive Requirements Engineering, September 11th, 2004, in Nagoya

Software is a major force in automotive business. Modern premium cars embody often more than 50 electronic control units with several megabytes of software running on them. The workshop aims to bring together practitioners and researchers to discuss problems in this area as well as potential or even implemented solutions.

Doctoral Symposium

Opening: Introduction, Rules of the Game

Martin Glinz, *U. of Zurich, Switzerland, Workshop Chair*

Session 1: Elicitation

Social Events and Services

Reception, September 8, 2004 (Wed) 18:00–20:00: The conference reception will be taken place at University dining room.

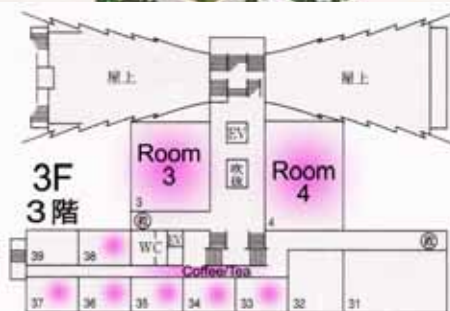
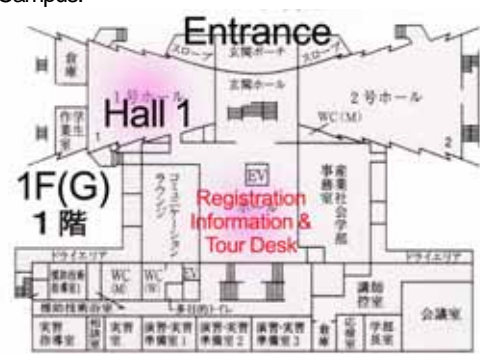
Banquet, September 9, 2004 (Thu), 18:00–21:30: At Shozan, you can enjoy tour of Japanese garden and dining of Japanese cuisine with traditional Japanese dance and music performance, specific to Kyoto, by Maiko (women's dance). Vegetarian meals are available. Bus will leave from the school at 17:45.

Lunch: Lunch will be provided at dinning room on B1F. Vegetarian meals are available.

Coffee: During break, coffee and tea will be served at 3rd floor. During exhibition, the service will be provided in exhibition room 34, 35 and 36.

Venue Site Map

All the sessions will be taken place in **Igakukan Building** of Ritumeikan University Kinugasa Campus.



A Novel and Collaborative Approach to Requirements Elicitation with Process Guidelines and Intelligent Tool Support, *C. Coulin, U. of Tech. Sydney, Australia*

From Social Studies to Systems Oriented Reasoning: Bridging the Divide between Soft and Hard Methods in Requirements Engineering, *C. Hinds, Oxford U., UK*

Scenario-Based Requirements Definition, *H. Zhang, Ritsumeikan U., Japan*

Session 2: Traceability and Architecture

A Formal Approach to Component-based Specification with Improved Requirements Traceability, *M. L. Nores, U. of Vigo, Spain*

TRAMA: Traceability Analysis Methodologies for Web Application, *G. Randazzo, U. della Svizzera Italiana, Switzerland*

Architecting Requirements, *W. Liu, U. of Toronto, Canada*

Session 3: Product Lines

Towards a Framework for Requirements Engineering for Automotive Software System Product Lines in an OEM and Supplier Setting, *R. Tavakoli, DaimlerChrysler AG, Germany*

Modelling Variability for Interrelated Requirements Artefacts in Software Product Families, *S. Böhne, U. of Duisburg-Essen, Germany*

Session 4: Process Improvement

A Framework for Validating Process Improvement in Requirements Engineering, *B. Palyagar, Macquarie U., Sydney, Australia*

Process Improvement in Requirements Engineering by Acquisition of Requirements Engineering Tools, *R. Matulevicius, Norwegian U. of Science and Technology, Norway*

Wrap-Up: How to do PhD research

D. Berry, *U. of Waterloo, Canada*; M. Glinz, *U. of Zurich, Switzerland*

Bus Services

Shuttle Bus Services

Shuttle bus service will be provided as the following schedule. Frequent city bus services are also available between JR Kyoto station, stop by Nijo-jo in front of ANA/ and kousai(Int'l) Hotel, and Ritsumeikan University.

Date	Time	From	To
9/6(Mon)	8:00	ANA Hotel	Ritsumeikan Univ.

Date	Time	From	To
9/7(Tue)	8:00	ANA Hotel	Ritsumeikan Univ.
9/8(Wed)	8:00	ANA & Kokusai Hotel	Ritsumeikan Univ.
	20:30	Ritsumeikan Univ.	ANA & Kokusai Hotel
9/9(Thu)	8:00	ANA & Kokusai Hotel	Ritsumeikan Univ.
	17:45	Ritsumeikan Univ.	Shozan for Banquet
	21:45	Shozan for Banquet	ANA & Koksai Hotel
9/10(Fri)	8:00	ANA & Kokusai Hotel	Ritsumeikan Univ.

City Bus Services

City bus route #50 frequently serves between JR Kyoto station, stop by Nijojo-jo, and Ritsumeikan University.

From Niiyo-jyo Stop to Ritsumeikan Univ.

From JR Kyoto Station to Ritumeikan Univ.

stop by Nijyo-jyo

From Ritsumeikan Univ. to JR Kyoto Station stop
by Nijo-jyo

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7 19 32 43 54	16 11 26 38 51	16	6 18 32 47
4 14 24 33 43 54	17 4 19 32 48	17	1 15 29 49 54
6 18 29 40 52	18 5 23 38 56	18	2 22 44
4 18 32 46	19 17 37 57	19	6 27 47
2 19 39	20 17 39	20	7 27 52
2 27	21 2 27	21	27
22	22 23	22	27
23	23	23	

立寄席大平前		平祝16年03月20日実業	
50		京都駅 <small>きよ</small>	
平日	土曜日	休日	
Monday-Friday	Saturday	Sunday & Holiday	
	5	5	
15 30 53	6 16 31 55	6	15 52
5 13 20 28 36 44 52	7 9 19 29 40 51	7	19 42
0 8 16 23 32 42 52	8 11 20 30 39 49 59	8	4 24 43
5 14 25 36 47 58	9 10 21 32 43 54	9	2 22 41 59
9 20 31 42 54	10 5 16 27 39 51	10	16 33 48
8 22 37 54	11 5 21 39 56	11	2 16 30 44 57
11 28 46	12 12 29 46	12	10 23 36 49
2 16 30 43 56	13 2 17 32 46	13	2 14 26 37 48 59
9 22 35 48	14 2 18 34 46	14	10 21 32 43 54
1 14 27 39 52	15 1 16 31 46	15	5 16 26 37 47 57
4 16 28 40 52	16 1 15 29 43 57	16	7 17 28 39 51
4 15 26 37 48 58	17 10 22 34 47	17	3 15 29 43 57
8 17 27 38 49	18 1 15 31 49	18	11 25 43
1 12 23 34 45 59	19 6 21 37 58	19	3 24 44
10 37 42 59	20 10 37 57	20	5 25 45
19 41	21 18 40	21	5 29
5	22 5	22	4
23	23	23	

Kyoto

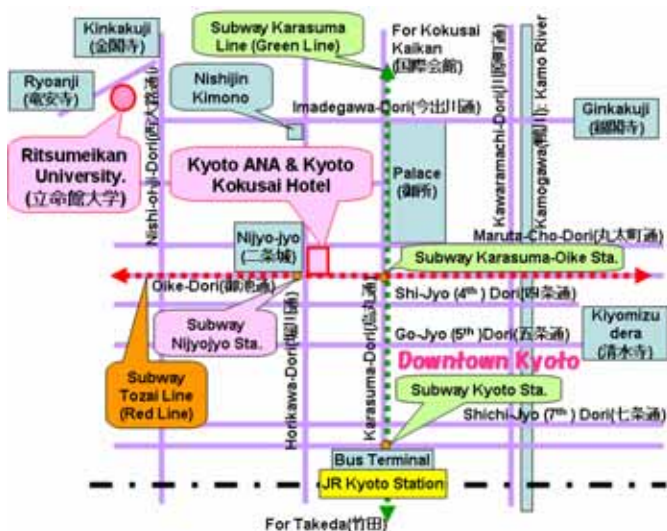
Kyoto is the heart of Japanese culture of incredible beauty, eternal oriental-spirituality, and modern technology, you will experience.

The RE '04 will take place at Ritsumeikan University, located in the historic area of north-west of downtown Kyoto. The Kinkajui, the golden temple and Ryoanji, one of the finest stone garden in Kyoto, are located in walking distance.

Nagoya

The International Workshop on Automotive Requirements Engineering will be held at Nagoya(Takaoka) Satellite Campus of Nanzan University. The campus is 5 min. walk from Takaoka station of subway Sakura-Dori Line (Red Line), which is 4th stop from subway Nagoya station. It takes 6 min. from Nagoya station to Takaoka Station. It takes some 40 min. by JR super express train, Nozomi or Hikari, between Kyoto and Nagoya.

Kyoto Map

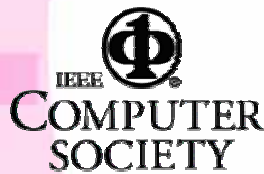


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