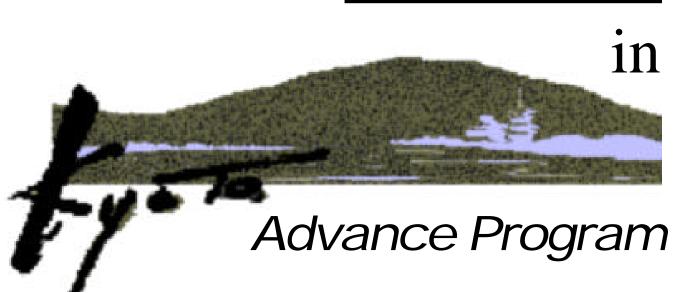


The 20th International Conference on Software Engineering April 19-25, 1998 Kyoto International Conference Hall, Kyoto, JAPAN http://icse98.aist-nara.ac.jp/

ICSE 98





				Technical Program			
20 Mon.	TH01: Software Patterns TH02: Testing & Analy		Analysis	TH03:Objectory Process	TH04: Cleanroom		
20 Mon.	TH05: Design Patterns	TH06: UML		TH07: C++	TH08: Hypermedia		
01 T	TH09: Requirements	TH10: CORBA T		TH11: COTS	TF02: Design by C	`onti	
21 Tue.	TH12: JAVA	TH13: Distributed SW		TH14: Software Surgery	11 02. Doolgi1 by 0	Troc. Bodgirby cond	
	Reception						
	W1: Opening Remarks / Invite						
22 Wed.	W2-1: Experience with Software Process Improvement			Formal modeling	W2-3: Critical Iss	ues	
	W3-1: Reverse Engineering		W3-2:	Formal Methods and Object Orientation	W3-3: Computing	g and	
	Welcome Party						
	T1: Keynote Presentation, Jar	The state of the s					
	T2-1: Internet/Mobile Code/Security			Software Evolution	T2-3: Are Method		
23 Thu.	T3-1: Testing			Novel Approaches to Design and Validat	on T3-3: Managing C	Objec	
	T4: Most Influential Paper from		To a		To a		
	T5-1: Large Scale and Complex System Development Conference Banquet			Computer Supported Cooperative Work	T5-3: Component	t-Bas	
		_					
	F1: Keynote Presentation, TB				Fala		
24 Fri.	F2-1: Object-Oriented Technology			Project Estimation and Simulation	F2-3: Formal Met		
2.111.	F3-1: Project and Workflow Management F4: Closing Panel / Closing Remarks			Estimation Technologies	F3-3: Are New-G	ener	
	F4. Glosing Faller/ Glosing Ne	citidins					
25 Sat.							
26 Sun.							

FORGING NEW LINKS

ICSE's twentieth birthday affords an opportunity to reflect on profound changes of the past two decades. Since ICSE's founding, politics and technology have converged to shatter once formidable barriers to international cooperation.

The collapse of the Berlin Wall symbolizes the end of the Cold War, and links in a Web page are a metaphor for our enhanced capacity for global information exchange. In this spirit, we have worked hard to ensure that ICSE98 will see an unprecedented increase in the level of international participation and provide an opportunity to highlight the interests and accomplishments of members from the Asian-Pacific region.

Yet our outreach must extend beyond geography. As we continue to build bridges to other software disciplines, researchers and practitioners in allied fields will benefit from an understanding of the contributions that software engineering can make to their work. In turn, we must address their problems in our research.

New collaborations between academia and industry will also enrich ICSE98 and our profession as a whole. The presentation of top-notch papers will, of course, constitute the core activity of ICSE98. Cutting edge research will be showcased in technical paper sessions, workshops, panels, posters, demonstrations, and special sessions devoted to the lessons learned from building large and complex software systems.

We hope you will take advantage of this unique opportunity to meet new colleagues, exchange ideas, and explore the nearly limitless possibilities that lie ahead. Join us in Kyoto for ICSE98 and share the excitement that comes from forging new links.

Koji Torii, ICSE98 General Chair

Kokichi Futatsugi and Richard Kemmerer, ICSE98 Program Co-chairs

Table of Contents	
ICSE98 Schedule At-a-Glance Table of Contents Corporate Sponsors Tutorials	4 Posters and Research Demonstrations 5 Joint Workshops
Corporate	ICSE98 Conference Registration Form

Nippon Telegraph and Telephone Corporation

				Workshop	
TF01: Experience Factory	Asia Pacific Forum		WS06,WS08,WS09	WS03	
TF03: Software Forensics	Doctoral Symposium		WS10	WS04 WS12	WS02
Lessons and Status Reports, Mini-Tutorials, Poster and Research Demonstrations (TBD)		ICSE98 EXPO			W002
			WS07,WS11,WS13	WS05	

Tutorials

APRIL 20 (MONDAY)

1998

APRIL

21 (

(TUESDAY)

1998

Morning (9:30 - 13:00)

TH01: Software Patterns

Ralph Johnson (University of Illinois)

TH02: Software Testing and Analysis for Practitioners

Mauro Pezze' (Politecnico di Milano) and Michael Young (University of Or-

egon)

TH03: The Objectory Process

Phillipe Kruchten (Rational Software Corporation)

TH04: Cleanroom's Place in Today's Software development

world

Chales Engle and Dave Fuhrer (Q-labs)

Afternoon (14:00 - 17:30)

TH05: Using Design Patterns to Construct Frameworks

Ralph Johnson (University of Illinois)

TH06: Introducing the Unified Modeling Language (UML)

Stephen Morris (The City University, London)

TH07: C++ for Software Engineering: Standard Solutions for Standard Problems

Mehdi Jazayeri and Georg Trausmuth (Technical University of Vienna)

TH08: What Every Software Engineer Should Know about Hypermedia for Designing World Wide Web Applications

Michael Bieber (New Jersey Institute of Technology)

Full day (9:30 - 17:00)

TF01: The Experience Factory: How to Build and Run One

Victor Basili and Frank McGarry (University of Maryland)

Morning (9:30 - 13:00)

TH09: Requirements Analysis for Evolving Systems

Colin Potts (Georgia Institute of Technology)

TH10: An Introduction to OMG/CORBA

Wolfgang Emmerich (LogOn Technology Transfer)

TH11: COTS Product and Technology Evaluation: Concepts and Pragmatics

Kurt Wallnau and David Carney (Software Engineering Institute)

Afternoon (14:00 - 17:30)

TH12: Java (title tentative)

James Gosling (Sun Microsystems)

TH13: Distributed Software Architectures

Jeff Kramer and Jeff Magee (Imperial College)

TH14: Software Surgery

Keith Gallagher (Loyola College)

Full-day (9:30 - 17:00)

TF02: Design by Contract

Bertrand Meyer (Interactive Software Engineering Inc.)

TF03: Software Forensics: Digging through the data

Shari Lawrence Pfleeger (Systems/Software, Inc.)





Technical Program

Lessons and Status Reports, Mini-Tutorial, and Demonstration Sessions will be announced in the final program or WEB site http://icse98.aist-nara.ac.jp/.

APRIL 22 (WEDNESDAY)

1998

MORNING

W1: Plenary Session

- Opening Remarks
- Invited Presentation, Nobuaki Kumagai (Past President of Osaka U., Japan)

AFTERNOON

W2-1: Experiences with Software Process Improvement

- Agile Software Process and Its Experience, Mikio Aoyama (Nigata Institute of Tech., Japan)
- Software Process Modeling and Enactment: An Experience Report Related to Problem Tracking in an Industrial Project, Volker Gruhn (U. of Dortmund, Germany), Juri Urbainczyk (Open Software Associates, Germany)
- Toward Computational Support for Software Process Improvement Activities, Keishi Sakamoto (OMRON Corp., Japan), Kumiyo Nakakoji (Nara Institute of Science and Tech., Japan), Naoki Niihara, Yasunari Takagi (OMRON Corp., Japan)

W2-2: Formal Modeling

- Modeling and Analysis of a Virtual Reality System with Time Petri Nets, Rajesh Mascarenhas (Sybase Inc., USA), Dinkar Karumuri (Oracle Consulting, USA), Ugo Buy (U. of Illinois, USA), Robert Kenyon (U. of Illinois, USA)
- Specification and Verification of an Object Request Broker, Gregory Duval (EPFL, Switzerland)
- Integrating Obstacles in Goal-Driven Requirements Engineering, Axel van Lamsweerde, Emmanuel Letier (U. Catholique de Louvain, Belgium)

W2-3: Panel - Critical Issues in Software Evolution

Dewayne Perry (Bell Lab., USA), et. al.

W3-1: Reverse Engineering

- Conceptual Module Querying for Software Reengineering, Elisa Baniassad, Gail Murphy (U. of British Columbia, Canada)
- Reuse-Driven Interprocedural Slicing, Mary Jean Harrold, Ning Ci (Ohio State U., USA)
- Extracting Concepts from File Names: A New File Clustering Criterion, Nicolas Anquetil, Timothy Lethbridge (U. of Ottawa, Canada)

W3-2: Formal Methods and Object Orientation

- Blending Object-Z and Timed CSP: An Introduction to TCOZ, Brendan Mahony (Dept. of Defence, Australia), Jin Song Dong (CSIRO, Australia)
- Three Dimensional Software Modeling, Joseph Gil (Israel Institute of Tech., Israel), Stuart Kent (U. of Brighton, UK)
- Formalizing Design Patterns, Tommi Mikkonen (Tampere U. of Tech., Finland)

W3-3: Panel - Computing and Communication in the Age of

Mobility

Gruia-Catalin Roman (Washington U. in Saint Louis, USA), et. al.

Welcome Party

APRIL 23 (THURSDAY) 1998

MORNING

T1: Plenary Session

Keynote Presentation, James Gosling (SUN, USA)

T2-1: Internet/Mobile Code/Security

- Techniques for Trusted Software Engineering, Premkumar Devanbu (U. of California Davis, USA), Philip Fong (Simon Fraser U., Canada), Stuart Stubblebine (AT&T Lab., USA)
- An Approach to Large-Scale Collection of Application Usage Data over the Internet, David Hilbert, David Redmiles (U. of California Irvine, USA)
- Evaluating the Tradeoffs of Mobile Code Design Paradigms in Network Management Applications, Mario Baldi, Gian Pietro Picco (Politecnico di Torino, Italy)

T2-2: Software Evolution

- The Use of Goals to Surface Requirements for Evolving Systems, Annie Anton (U. of South Florida, USA), Colin Potts (Georgia Institute of Tech., USA)
- Promises: Limited Specifications for Analysis and Manipulation, Edwin Chan, John Boyland, William Scherlis (Carnegie Mellon U., USA)
- Architecture-Based Runtime Software Evolution, Peyman Oreizy, Nenad Medvidovic, Richard Taylor (U. of California Irvine, USA)

T2-3: Panel - Are Methods Really Useful?

Motoshi Saeki (Tokyo Inst. of Tech, Japan), et.al.

AFTERNOON

T3-1: Testing

- An Empirical Study of Regression Test Selection Techniques, Todd Graves (Bell Lab., USA), Mary Jean Harrold (Ohio State U., USA), Jung-Min Kim, Adam Porter (U. of Maryland, USA), Gregg Rothermel (Oregon State U., USA)
- What You See Is What You Test: A Methodology for Testing Form-Based Visual Programs, Gregg Rothermel, Lixin Li, Christopher DuPuis, Margaret Burnett (Oregon State U., USA)

T3-2: Novel Approaches to Design and Validation

- Integrating Architecture Description Languages with a Standard Design Method, Jason Robbins, Nenad Medvidovic, David Redmiles, David Rosenblum (U. of California Irvine, USA)
- Assisting the Automated Validation Process of User Interfaces Systems, Bruno d'Ausbourg, Christel Seguin, Guy Durrieu, Pierre Roche (ONERA-CERT, France)

T3-3: Managing Objects

- Consistency Management for Complex Applications, Peri Tarr (IBM, USA),
 Lori Clarke (U. of Massachusetts, USA)
- Reifying Configuration Management for Object-Oriented Software, J-M Jezequel (Irisa/CNRS, France)

T4: Plenary Session

Most Influential Paper from ICSE-10

T5-1: Large Scale and Complex System Development

- Parallel Changes in Large Scale Software Development: An Observational Case Study, Dewayne Perry, Harvey Siy, Lawrence Votta (Bell Lab., USA)
- Exploiting an Event-Based Infrastructure to Develop Complex Distributed Systems, G. Cugola, E. Di Nitto, A. Fuggetta (Politecnico di Milano, Italy)
- Conceptual Simplicity Meets Organizational Complexity: Case Study of a Corporate Metrics Program, James Herbsleb, Rebecca Grinter (Bell Lab., USA)

T5-2: Computer Supported Cooperative Work

- An Adaptable Generation Approach to Agenda Management, Eric McCall, Lori Clarke, Leon Osterweil, (U. of Massachusetts, USA)
- Measuring Cognitive Activities in Software Engineering, Pierre Robillard, Patrick d'Astous (Ecole Polytechnique de Montreal, Canada), Francoise Detienne, Willemien Visser (INRIA, France)

T5-3: Panel - Component-Based Software EngineeringMikio Aoyama (Niigata Inst. of Tech., Japan), et. al.

Conference Banquet

APRIL 24 (FRIDAY) 1998

MORNING

F1: Plenary Session

- Keynote Presentation: TBD

F2-1: Object-Oriented Technology

- Design Components: Towards Software Composition at the Design Level, Rudolf Keller, Reinhard Schauer (U. de Montreal, Canada)
- Non-Intrusive Object Introspection in C++: Architecture and Application,
 Tyng-Ruey Chuang, Y. S. Kuo, Chien-Min Wang (Academia Sinca, Taiwan)
- Object Oriented Reuse: Experience in Developing a Framework for Speech Recognition Applications, Savitha Srinivasan, John Vergo (IBM, USA)

F2-2: Project Estimation and Simulation

- Evaluation of Subjective Effort Estimation Techniques, Martin Hoest, Claes Wohlin (Lund U., Sweden)
- Using Simulation to Build Inspection Efficiency Benchmarks for Development Projects, Lionel Briand, Khaled El Emam, Oliver Laitenberger (Fraunhofer IESE, Germany), Thomas Fussbroich (U. of Kaiserslautern, Germany)
- A Learning Curve Based Simulation Model for Software Development,
 Noriko Hanakawa, Syuji Morisaki, Ken-ichi Matsumoto (Nara Institute of Science and Tech., Japan)

F2-3: Panel - Formal Methods in 21st Century (Tentative)TBD

AFTERNOON

F3-1: Project and Workflow Management

- The Ramp-Up Problem in Software Projects: A Case Study of How Software Immigrants Naturalize, Susan Sim (U. of Toronto, Canada), Richard Holt (U. of Waterloo, Canada)
- Overcoming the NAH Syndrome for Inspection Deployment, Pankaj Jalote,
 S. Haragopal (Infosys Technologies Ltd., India)
- Workflow Management Based on Process Model Repositories, Volker Gruhn (U. of Dortmund, Germany), Monika Schneider (o.tel.o service

GmbH, Germany)

F3-2: Estimation Technologies

- A Hybrid Method for Software Cost Estimation and Risk Assessment, Lionel Briand, Khaled El Emam, Frank Bomarius (Fraunhofer IESE, Germany)
- Defect Content Estimations from Review Data, Claes Wohlin, Per Runeson (Lund U., Sweden)
- Analyzing Effects of Cost Estimation Accuracy on Quality and Productivity, Osamu Mizuno, Tohru Kikuno (Osaka U., Japan), Katsumi Inagaki, Yasunari Takagi, Keishi Sakamoto (OMRON Corp., Japan)

F3-3: Panel - Are New-Generation Architecture Description Language Useful?

John Salasin (DOD, U.S.A.), Barry W. Boehm (USC, U.S.A.), David Garlan (CMU, U.S.A.), Alex Wolf (U. of Colorado, U.S.A.)et. al.

F4: Plenary Session

- Closing Panel: TBD
- Closing Remarks

Posters and Research Demonstrations

Posters and Research Demonstrations provide an excellent opportunity to show late-breaking results and to discuss the results with the conference participants. Interactive communication and demonstration will be the most exciting and powerful presentation.

Posters: All types of work in software engineering can be presented effectively using posters during the conference. Display space will be provided in the poster and research demonstration room. A description of each poster will appear in the proceedings for posters and research demonstrations.

Research Demonstrations: Research demonstrations are intended to show early implementation of novel software engineering concepts. Research demonstrations will be scheduled into blocks of time for demonstration. In addition, a booth will be provided in the poster and research demonstration room to allow informal demonstrations throughout the conference. A description of each research demonstration will appear in the proceedings for research demonstrations. We consider any system which is at least six months away from appearing in a commercial product as a "research system". Commercial systems will not be accepted as research demonstrations.

Contact: Yoshiaki Fukazawa (fukazawa@fuka.info.waseda.ac.jp)





Joint Workshops

For the detail, please check each WWW page.

WS01: IWSSD-9 (9th Int'l Workshop on Software Specification and Design)

PC Co-chairs: A. Finkelstein (Imperial College, U. K.) and U. Buy (U. Illinois at Chicago, U. S. A.)

Date: April 16-18, 1998

Place: Ise-shima Royal Hotel (This workshop only)

Contact: M. Saeki (TIT, Japan), E-mail saeki@cs.titech.ac.jp

http://salab-www.cs.titech.ac.jp/iwssd9.html

Topics: The IWSSD is a leading international forum for research on software architecture, concurrent, distributed and real-time systems, formal models, and requirements and design methods.IWSSD-9 will use working-group discussions in order for participants to focus on their shared concerns in representing and reasoning about models of software-intensive systems.

WS02: ISORC'98 (Int'l Symposium on Object-oriented Realtime Distributed Computing)

General Co-chairs: K. Kim (U.C. Irvine, U.S.A.), K. Mori (Tokyo Inst. of Tech, Japan) and E. Nett (GMD, Germany)

Date: April 20-22, 1998

Contact: Chittur Subbaraman (U.C. Irvine, U.S.A.),

E-mail: csubbara@ece.uci.edu http://dream.eng.uci.edu/isorc/

Topics: The ISORC is a new symposium series dealing with the emerging object-oriented real-time distributed computing (ORC) technology. The main technical theme of the ISORC is how to extend the well established object-oriented computing technology, i.e., the technology that has prevailed the non-real-time business data processing field in the past decade, into the technologies that are effectively applicable to various classes of real-time applications.

WS03: PDSE'98 (Int'l Symp. on Software Engineering for Parallel and Distributed systems)

PC Co-chairs: B. Kraemer (Fern Universitaet Hagen, Germany) and N. Uchihira (Toshiba, Japan)

Date: April 20-21, 1998

Contact: N. Uchihira, E-mail: uchi@ssel.toshiba.co.jp

http://www.dcs.shef.ac.uk/~prc/PDSE98/ or

http://www.ec.kyushu-u.ac.jp/~zengo/PDSE98/

Topics: PDSE98 provides a forum for exchange of information and publication of the latest technological and theoretical advances in software engineering for parallel and distributed systems. Topics include development methodologies, software architectures, languages (eg Java), software reuse, testing and verification, performance modeling and prediction, practical experiences for parallel and distributed systems.

WS04: Int'l Workshop on the Principle of Software Evolution

Organizer: T. Katayama (JAIST, Japan), D. Perry (Bell Labs, U.S.A.), et al.

Date: April 20-21, 1998

Contact: T. Katayama, E-mail: katayama@jaist.ac.jp

http://kt-www.jaist.ac.jp:8000/icse98.html

Topics: Software evolution is widely recognized as one of the most important problems in software engineering. Despite the significant amount of work that has been done, there are still fundamental problems to be solved. The purpose of this workshop is to discuss principles and mechanisms for software evolution.

WS05: Int'l Workshop on Component-Based Software Engineering

PC Co-Chairs: K. Wallnau (SEI, U. S. A.), J. Ning (Andersen Consulting, U. S. A.) and S. Uehara (Fujitsu Labs., Japan)

Date: April 25-26, 1998

Contact: K. Wallnau, E-mail: kcw@sei.cmu.edu

http://www.sei.cmu.edu/technology/dynamic_systems/cbs/icsewkshp.html

Topics: The theme of this workshop is focused on component-management infrastructures—the software technology that supports development, execution, and deployment of component-based systems.

WS06: Int'l Workshop on Aspect-Oriented Programming

PC Co-Chairs: C. V. Lopes (Xerox PARC, U. S. A.), G. Kiczales (Xerox PARC, U. S. A.), G. Murphy (U. British Columbia, Canada) and A. Lee (Korea U., Korea)

Date: April 20, 1998

Contact: C. V. Lopes (Xerox PARC, U. S. A.)

E-mail: lopes@parc.xerox.com

http://www.parc.xerox.com/aop/icse98/

Topics: migrating to aspects / software design with aspects / how to identify aspects / reusing aspects / aspect description languages / the effect of aspects on software structure / programming language and environment support / translation techniques / debugging and testing with aspects

WS07: Software Engineering over the Internet

PC Co-Chairs & Contact: F. Maurer (U. Calgary, Canada)

E-mail: maurer@cpsc.ucalgary.ca

http://sern.cpsc.ucalgary.ca/~maurer/ICSE98WS/ICSE98WS.html

Date: April 25, 1998

Topics: web-based software process modeling environments /distributed process enactment / replication support for software documents / distributed data repositories / world-wide configuration management support

WS08: Engineering Hypertext for Future Information Systems

PC Co-Chairs: G. Rossi (LIFIA, Argentina) and

H. Ziv (Quest Software and U.C. Irvine, U.S. A.)

Date: April 20, 1998

Contact: H. Ziv E-mail: zivh@quests.com

http://www.ics.uci.edu/~kanderso/htf5/cfp.html or

http://www.ep.cs.nott.ac.uk/HTF

Topics: This workshop focuses on the value added to a system by hypertext and hypermedia support capabilities as well as the actual process of embedding hypertext functions into non-hypertext information systems. The main theme for this workshop is engineering hypertext functionality, i.e., various aspects of constructing hypertext capabilities.

WS09: PSMT (Workshop on Precise Semantics for Software Modeling Techniques)

PC Co-Chairs: M. Broy (Tech. U. Munich, Germany), D. Coleman (Kings College, U. K), T. S. E. Maibaum (Imperial College, U. K.), and B. Rumpe (Tech. U. Munich, Germany)

Date: April 20, 1998

Contact: B. Rumpe

E-mail: rumpe@informatik.tu-muenchen.de

http://www4.informatik.tu-muenchen.de/~rumpe/icse98-ws/

WS10: Workshop on Human Dimensions in Successful Software Development

PC Chair & Contact: S. Murugesan (U. of Western Sydney Macarthur, Australia)

E-mail: s.murugesan@uws.edu.au

http://btwebsh.macarthur.uws.edu.au/san/hudworkshop/

Date: April 21, 1998

Topics: This workshop will focus on human dimensions in software develop-

ment, implementation, utilization and maintenance and have a fresh and comprehensive look at a range of human issues that impede successful software development and what could be, or should be, done solve those problems.

WS11: IWSEE5 (Int'l Workshop on Software Engineering Education)

Date: April 25, 1998

PC Chair & Contact: J. Jenkins (U. London, U.K.)

E-mail: J.O.Jenkins@city.ac.uk

Topics: The workshop focuses on the following topics but not limited.

Graduate programs in software engineering education

Discussion of syllabuses

Teaching and learning processes and assessment

WS12: MSE'98 (Int'l Workshop on Multimedia Software Engineering)

Date: April 20-21, 1998

General Co-Chairs & Contact: J. Tsai (U. Illinois at Chicago, U.S.A.), E-mail: tsai@eecs.uic.edu, and F. Bastani(General Co-Chair, U. Texas at Dallas, U.S.A.), E-mail: bastani@utdallas.edu

http://kel.eecs.uic.edu/MSE98/

Topics: The purpose of this workshop is to bring together active researchers in the area of software engineering and multimedia systems to exchange and evaluate the issues, experience, and trends in this area. MSE'98 will be conducted as a combination of paper presentations, invited talks, and panel discussion.

WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility

Organizer C. Ghezzi (Politecnico di Milano, Italy) and G.-C. Roman (Washington U. in St. Louis, U.S.A.)

Date: April 25, 1998

Submision Due: February 1, 1998

Contact: G.-C. Roman, E-mail: roman@cs.wustl.edu

http://www.cs.wustl.edu/~roman/ICSE-MOB/

Topics: The immediate objective is to provide a forum for intellectual debate as well as a tutorial introduction for new comers to this field. The ultimate goal is to define an influential research agenda for the area as a whole and to generate advocacy for it by stimulating new research initiatives.

Asia Pacific Forum

Monday, April 20 - Tuesday, April 21 (Tentative)

Monday, April 20 - Tuesday, April 21 (Tentative)

ICSE98 provides an opportunity for exchanging ideas and/or information for researchers and practitioners in Asia-Pacific Region. At ICSE17 in Seattle 1994, we had a workshop on "Asian Approaches to Software Engineering". It was very successful. We are planning to have a similar event in Kyoto. And it will also be possible to implement other plans such as to have a forum to discuss emerging Asian software markets, or for special exhibits of software engineering tools made in Asia.

Contact: Kouichi Kishida (k2@sra.co.jp)

Doctoral Symposium

Tuesday, April 21 9:00am-5:00pm

The ICSE 98 Doctoral Symposium is a one day workshop prior to the regular ICSE technical conference. The goal of the doctoral symposium is to publicly discuss research goals, methods, and results at an early stage of Ph.D. research and provide useful guidance for completion of the dissertation research. The symposium will also provide an opportunity for student participants to interact with each other as well as with established researchers and engineers in the field.

As the systems of doctoral courses are different by cultures, we are expecting participants coming from America, Europe, Asia-Pacific and all over the world. We also plan to discuss how common or different the doctoral systems are among countries.

Contact: Tetsuo Tamai (tamai@graco.c.u-tokyo.ac.jp)

ICSE98 EXPO

Tuesday, April 21 - Friday, April 24

The Exhibit offers commercial exhibit space to vendors as well as research exhibit space for products by academic and government

research laboratories. There are two types of exhibits.

- Commercial products from vendors.
- Research products from academia, industrial research laboratories, and government laboratories.

Some exhibit space remains, and applications will be accepted on a first-come first-served basis.

Exhibitors in Alphabetical NTT DATA

Order(tentative): NTT Software

Anritsu OGIS Research Institute

CSK OMRON
DEC PFU
Fuji-Xerox Rikei

Hewlett Packard SEKI TECHNOTRON

Hitachi SGI IBM Sharp

NEC Software Research Associates

Contact: Shinichi Honiden (icseexpo@po.ii[net.or.lp)

Toshiba



Sequence of the control of the purposes of the filting and printing this registration of the first purposes of the purposes of	IC3E76 CUITIETE			uatio	11 F	ווווע	
PLEASE PRINT/TYPE CLEARLY The factor over Profit. Dr. Mr. Mrs. Ms. Masse including the profit of th			ee:	Early Registra	ation	Received on or before	March 16,
## A Technical Program A Technical Program A Technical Progra	uauon form. ORL is http://icse98.aist-nara.ac.jp/registration/ .	March 16, 1998 JST		Late Registra	tion	Received after	
Figure 1 Transition for the prince on your name card at the conference. City State Perfect Code Country Figure 1 Feet	PLEASE PRINT/TYPE CLEARLY		rogram				
And the finite of the property	Title (circle one): Prof. Dr. Mr. Mrs. Ms.	<u>Member</u>	<u>N</u>				Fee Paid
Barrier Description Desc	First Name (Given Name) Middle Initial	40,000 yen 52,00 * The registration fee to events (excluding band	00 yen 52 or the techn or lesse be	2,000 yen 65,00 ical program includes sure NOT to book	0 yen 20, des ONE co more than o	000 yen 25,000 yen py of the proceedings at one TUTORIAL/WORKS	nd tickets to social HOP for the same
Abbreviolation (The information above will be printed on your name card at the conference) Molting Address The Third Experience Factory, How to Build and Run Ore Trust State Poster Code Coursey Final E-mail Society Membership: IPSJ JSSST IEEE ACM Membership Number of Above Society Indicate Payment Method: We cannot accept checks or money unders. We cannot accept checks or money unders. Saving Account Number: 259794 Nanto Bank, Tornigooka Branch Account Number: 259794 Nanto Bank, Tornigooka Branch VISA Master Card Laudotes (CSBS) Saving Account Number: 259794 Nanto Bank, Tornigooka Branch VISA Master Card Laudotes (CSBS) as boys the full batance due, to seeded Registrations and Organization and one of the company of the com	Last Name (Family/Surname)		ricase cite	ck out web site be	iore registra	tion for sneddie change.	We retain the right
Early Description Descri	Company / Organization	Full Day Tyterials	Manakan		Newsensk		E D-id
Mountain Actives will be printed on your name card at the conference.) Mailing Address First Trib: The Experiments Factory: Nove to Build and Run One Trousday, April 21, 1998 Trib: The Experiments Factory: Nove to Build and Run One Trousday, April 21, 1998 Trib: The Experiments Factory: Nove to Build and Run One Trousday, April 21, 1998 Trib: The Experiments Factory: Nove to Build and Run One Trousday, April 21, 1998 Trib: Software Formace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Formace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Monday, April 22, 1998 Trib: Software Personace: Digging through the data Half Day Truterists AM Trates Day Truterists AM Trates Day Truterists AM Trates Day Truterists AM Trates Day Truterists AM Truterists AM Truterists AM Monday, Apri			Early		Early	Late/On-site	<u>ree Palu</u>
First Design by Contract or First First States Protect Code Country		Monday, April 20, 1	1998	•		n 60,000 yen	
Staff Day Tutorials: Lang Ch-stop Lang Ch-stop Lang Ch	Mailing Address	1		r			
Transfer Date Sorder Name Transfer Date Sorder Name Transfer Date VISA Master Card Juniorita (SEB9 aspe) the fail balance due, for selected Registrations and Options, for year large selecter and plant for selected Registrations and Options, for year large selected and plant for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for the fail balance due, for selected Registrations and Options, for year large selected and plant for year large selected plant for year large selected year large selected year				Digging through the			Fac Daid
Final Society Membership:	City State Postal Code Country		Early 20,000 yen		Early	Late/On-site	<u>ree Pald</u>
E-mail Society Membership:	Phone Fax	TH01: Software F	Patterns, or	Analysis for Practit	ioners. or		
Society Membership: IPSJ _ JSSST _ IEEE _ ACM IPSJ _ JSSST _ IEEE _ ACM Membership Number of Above Society Indicate Payment Method: Was cannot accept checks or money orders. _ Wire Transfer (Please pay any transfer fee involved.) Account Name: ICSE98 Saving Account Number: 259794 Nanto Bank, Tomigaoka Branch Sender Name Transfer Date Transfer Date VISA _ Master Card I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. USA _ Master Card I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. Total REMITTANCE (A+B+C+D): TOTAL REMITTANCE (A+B+C+D): Continue	E-mail	TH03: The Object	ctory Proces	s, or		: World	
Those introducing the Unified Modeling Language (UMIL), or THOSE What Every Software Engineering Shates Shate	Society Membership:			louay 5 Software C	zevelopineni	rvvona	
These introoucoing the United Modeling Language (UML), or Standard Problems, or THOS: What Every Schware Engineers 19 Should Know about Hypermedia for Designing World Wilde Web Applications	IPSJ JSSST IEEE ACM		-				
THOS: What Every Software Engineering Should Know about Hypermedia for Designing World Wide Web Applications (We cannot accept checks or money orders.		1	-		•		
Indicate Payment Method: We cannot accept checks or money orders.			-	-			9
Indicate Payment Method:	Membership Number of Above Society			olications			
	Indicate Payment Method:			is for Evolving Syst	ems, or		
Account Name: ICSE98 Saving Account Number: 259794 Nanto Bank, Tomigaoka Branch Transfer Date Sender Name Transfer Date VISA Master Card I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. Tomp credit card I authorize ICSE98 to apply the full balance due, for selected Registration and Options, to my credit card. Transfer Date Transfer Date VISA Master Card I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. Transfer Date Total Remittance Signature Date TOTAL REMITTANCE (A+B+C+D): (must be in Japanese Yen) WAND Lace II 2,000 yen WS08: Individe Programming Workshop Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS08: Engineering Hypertext for Future Information Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: Morkshop on Processe Semantics for Software Engineering over the Internet Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: PS09 Registration Office Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'I Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'I Workshop on M	We cannot accept checks or money orders.						
Account Name: ICSE98 Saving Account Number: 259794 Nanto Bank, Tornigaoka Branch Transfer Date Sender Name VISA I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. Credit Card Number Toral REMITTANCE (A+B+C+D): Total REMITTANCE (A+B+C+D): I authorize ICSE98 to apply the full balance due, for selected Registration Date Total REMITTANCE (A+B+C+D): Total REMITTANCE (A+B+C+D): MANUAL CRAFTANGOMPLEJED FORM WITH PAYMENT TO: ICSE98 Registration & Communications Research Laboratories 2-2-Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Thit3: Distributed Spiglages-AicEol/Registration, or Thit3: Distributed Spiglages-AicEol/Registration and Design) (Imrited Only) Thit3: Distributed Spiglages-AicEol/Registration and Design) (Imrited Only) Workshops Workshops Workshop Sor Software Sugitation and Design) (Imrited Only) Woso: Instituted Spiglages-AicEol/Registration and Design) (Imrited Only) Woso: Workshop on Software Engineering on Parallel and Distributed Spiglages-AicEol/Registration and Design) (Imrited Only) Sognature To Late: 18,000 yen	Wire Transfer (Please pay any transfer fee involved.)			chnology Evaluatio	n: Concepts	and Pragmatics	
Nanto Bank, Tomigaoka Branch Tansler Date Transfer Date				r			
Nanto Bank, Tomigaoka Branch City Sender Name Transfer Date VISA Master Card I authorize ICSE98 to apply the full balance due, for selected Registrations and Options, to my credit card. Credit Card Number Name (as it appears on card) Signature Date TOTAL REMITTANCE (A+B+C+D): (must be in Japanese Yen) (must be in Japanese Yen) WS02: ISDA (Ind) Workshop on Software Engineering over the Internate Barly: 10,000 yen Late: 12,000 yen Student: 8,000 yen Ws09: Intil Workshop on Software Engineering over the Internation Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 12,000 yen Ws05: Int'l Workshop on Software Engineering over the Internation Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen Ws07: Workshop on Software Engineering over the Internation Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen Ws09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen Ws09: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen Student: 8,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 yen Late: 12,000 yen Student: 8,000 yen Late: 12,000 y	G	TH13: Distributed	d Spftware	Architeathresvow b	age before re	egistration. Some worksh	ops are for invited
WS01: IWSSD-9 (9th Int'l Workshop on Software Specification and Design) (Invited Only)	Nanto Bank, Tomigaoka Branch	1H14:SOIIWare S	surgenge	e only.			
Separately registered. Check http://salab-www/cs.titech.ac.jp//wssd9.html WS02: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing) Separately registered. Check http://srame.neg.uci.edu/isorc/ WS03: PDSE'98 (Software Engineering on Parallel and Distributed ysstems) Early: 15,000 yen		1 '	th Int'l Work	rehon on Software	Snocificati	on and Design) (Invited	Only)
### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Computing) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Systems) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Systems) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Systems) ### W502: ISORC98 (Int'l Symposium on Object-oriented Real-time distributed Systems) ### W503: P5E'98 (Software Engineering on Parallel and Distributed Systems) ### Early: 15,000 yen		1		•	•		omy)
WS03: PDSE'98 (Software Engineering on Parallel and Distributed systems)		· ·				ime distributed Comput	ing)
Early: 15,000 yen	VISA Master Card	1 1 1		-		ibuted systems)	
WS04: Int'l Workshop on the Principle of Software Evolution (Invited Only)		1	-	-		• •	
WS05: Int'l Workshop on Component-Based Software Engineering	tions, to my credit card.	WS04: Int'l Worksho					
Name (as it appears on card) Expiration Date Name (as it appears on card) Expiration Date Signature Date TOTAL REMITTANCE (A+B+C+D): (must be in Japanese Yen) (must be in Japanese Yen) ICSEOBY REGISTATION O'HICE CO ATR Media Interaction & Communications Research Laboratories 2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Expiration Date Expiration Date Expiration Date Expiration Date WS06: Aspect-Oriented Programming Workshop Late: 12,000 yen	Credit Card Number	1					-
WS06: Aspect-Oriented Programming Workshop Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS07: Workshop on Software Engineering over the Internet Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS08: Engineering Hypertext for Future Information Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS10: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen US13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Usident: 8,000 yen US13: Int'l Workshop on					_	-	
WS07: Workshop on Software Engineering over the Internet	Name (as it appears on card) Expiration Date					,,,,,,	
TOTAL REMITTANCE (A+B+C+D): TOTAL REMITTANCE (A+B+C+D): WS08: Engineering Hypertext for Future Information Systems (Invited Only) Early: 10,000 yen		1				•	
WS08: Engineering Hypertext for Future Information Systems (Invited Only) Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS10: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Multimedia Software Engineering Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobili							
WS09: Workshop on Precise Semantics for Software Modeling Techniques Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS10: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Will attend with my spouse (8,000 yen)	· ·			•		· · · · · · · · · · · · · · · · · · ·	
Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS10: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen	IOTAL REMITTANCE (A+B+C+D):	Early: 10,000 yen	Lá	ate: 12,000 yen	Stu	ident: 8,000 yen	-
WS10: Workshop on Human Dimensions in Successful Software Development (must be in Japanese Yen) WS10: Workshop on Human Dimensions in Successful Software Development Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS11: Workshop on Software Engineering Education Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 18,000 yen Student: 12,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Multimedia Software Engineering Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS12: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen						-	
(must be in Japanese Yen) White DREFFANT COMPLETE FORM WITH PAYMENT TO: icses Registration Office c/o ATR Media Interaction & Communications Research Laboratories 2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Early: 10,000 yen		1 ' ' '		•			
Early: 10,000 yen processing fee will be assessed for all refunds. C/o ATR Media Interaction & Communications Research Laboratories 2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Early: 10,000 yen Late: 12,000 yen Student: 8,000 yen	(must be in Japanese Yen)						
c/o ATR Media Interaction & Communications Research Laboratories 2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen Late: 18,000 yen Student: 12,000 yen Late: 18,000 yen MS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 18,000 yen Will attend with my spouse (8,000 yen)	MANILLORE FAXIGOMELETED FORM WITH PAYMENT TO:	1					
c/o ATR Media Interaction & Communications Research Laboratories 2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 Early: 15,000 yen Late: 18,000 yen Student: 12,000 yen Late: 18,000 yen Student: 12,000 yen Late: 18,000 yen MS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen Late: 18,000 yen Will attend with my spouse (8,000 yen)	i A 5 000 yen processing fee will be assessed for all refunds.					ident: 8,000 yen	
2-2 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-02 JAPAN phone: +81-774-95-1430 fax: +81-774-98-2054 — WS13: Int'l Workshop on Computing and Communication in the Presence of Mobility Early: 10,000 yen		1				ident: 12,000 yen	
phone: +81-774-95-1430 fax: +81-774-98-2054 D) Banquet Will attend (5,000 yen) Will attend with my spouse (8,000 yen)	2-2 Hikaridai, Seika-cho,	WS13: Int'l Worksho	op on Com	outing and Comm	unication in	the Presence of Mobilit	у
phone: +81-//4-95-1430 fax: +81-//4-98-2054	Soraku-gun, Kyoto 619-02 JAPAN		La	ate: 12,000 yen	Stu	ident: 8,000 yen	
Will attend (5,000 yen) Will attend with my spouse (8,000 yen)	phone: +81-774-95-1430 fax: +81-774-98-2054	1 '		Mary	.	· (0.000 · · · ·)	
		1					Il be printed on

your spouse's name card at the Banquet. :

Accomodations Kinki Nippon Tourist Co., Ltd. (KNT) /Official Travel Agent for ICSE

April in Japan is the best tourism season and it will be very tight to make hotel and tour reservation, so we welcome your requests as early as possible. We have prepared the tours around Kyoto & Nara. If you need further information, please feel free to contact with KNT.

Notice:

Re	served Hotels	s List			Notice:	atau da fan Twia fan Cianla I Iaana
<u>Hotel</u>	<u>s</u>	Room Rate(yen)		Access to the venue	and T stands for Single, 1/S	stands for Twin for Single Usage om.
A-1	Takaragaike Prince (URL: http://www.princehotels.co	T/S:13,640	T:21,820	5 min.(walk)	* Check Hotel Rates in URL:	http://www.keihanna-plaza.co.jp/
B-1	Rhiga Royal Hotel Kyoto (URL: http://www.rihga.com/kyot	S:11,370 T/S:15,460	T:18,180	35 min.(subway)		rges per room per day basis. They
B-2	New Miyako Hotel	T/S:13,000	T:17,000	30 min.(subway)	tax.	vice charge or a 5% consumption
B-3	Hotel New Hankyu	S:12,000 T/S:14,000	•	, .,		el bill per day per person exceeds
	(URL: http://www.o-kini.or.jp/hote	el/hnh/kyoto-e/kyoto_1.html)				other 3% of local tax will be added.
	Hotel Keihan Kyoto	S:8,640		30 min.(subway)	* If the room of your first of	choice is fully booked, second or
C-2	Kyoto Garden	S:7,280 T/S:10,000	T:12,730	25 min.(subway)		her alternatives will be automati-
C-3	(URL: http://www.ampark.co.jp/g Maruko Inn Kyoto	S:6,820	T:11,280	25 min.(subway)	cally assigned.	
Appl	ication Deadline:	On FOIM _{* Pleas} Monday March	e type and r 16, 1997		d fill in block letters. lippon Tourist Co., Ltd. (KNT) I	oy fax (+81-6-314-1601).
First na	ame	N	fliddle initial	Last name		
Section Affiliation	n/Department					
Mailing	address					
City		State		Postal	code	Country
Phone			Fax	·		E-Mail
	L ACCOMMODATIONS	Please give your chos			•	
					Desired room type:	() Single () Twin room/
Single 1st cho	e Usage pice 2nd choice	a 3rd choice			() Twin (shared with:
Chec	:k-in Date:)	for night	(s)			
	ENT INFORMATION	•				
Туре	of Card: ()Visa,	()Master Card,	()American Expres	S ,	
Credit (Card Number			Expira	ition Date:(Month/Year)	
Пога-	s Name (please type)		Kinki Nipp c/o Nikko Phone:+8:	oon Tourist Co., Ltd Bldg. 7F, 2-11-8, S	d. International Travel, C Sonezaki, Kita-ku, Osak : +81-6-314-1601 / F-Ma	Osaka Branch a 530, JAPAN il:intlosa@tabi.knt.co.ip

WELCOME TO KYOTO IN CHERRY BLOSSOM SEASON

CITY OF HISTORY AND LEARNING

Kyoto, a city with 1,200 years of history, is the cultural soul of Japan. Nestled among low mountains, it is blessed with both natural beauty and a rich historical legacy. It is the ideal site for international conventions. From its establishment as Japan's capital in 794 until the Meiji Restoration in 1868, Kyoto flourished as the center of government, commerce and culture in Japan. Traditional arts and an abundance of shrines and temples give the city its distinct character. With nearly 1.5 million residents, Kyoto is a vibrant mixture of old and new. Many high-tech firms have chosen it as their headquarters, and the city boasts 47 public and private colleges and universities. These significant intellectual resources combine with Kyoto's long history and tradition to provide an ideal milieu for innovation and creativity.

NATURAL BEAUTY

Kyoto is a panorama of the changing seasons: from the springtime cherry blossoms lining narrow walkways, the lush greenery of summer, to the brilliant autumn foliage of Japanese maples and the delicate layer of snow covering the surrounding mountainsides in winter. The passage of seasons is also evident in the beautiful gardens of Kyoto's ancient temples and shrines.

CULTURAL HERITAGE

Reflecting its long history as the cultural and religious center of Japan, Kyoto is home to nearly 2,000 Buddhist temples and Shinto shrines. The city's international cultural significance was recognized when 17 historical sites in Kyoto were designated as UNESCO World Cultural Heritage Sites. Kyoto is the location of 20% of Japan's national treasures. More than 60 museums throughout the city offer visitors the opportunity to view priceless works of art and important cultural objects.

KYOTO INTERNATIONAL CONFERENCE HALL

Japan's leading convention center, the Kyoto International Conference Hall, is a complex consisting of seven separate conference halls, the largest of which can hold 2,000 persons. Another 70 conference rooms of various sizes are available for smaller meetings. Two large banquet halls and a Japanese landscape garden offer additional settings for convention participants to meet and communicate informally.

TRANSPORT

Kyoto has many modern hotels with accommodations for up to 20,000 visitors. Located near the center of Japan, it is readily accessible by land and air. The high-speed Shinkansen (bullet train) links Tokyo with Kyoto in 2 hours and 15 minutes. Overseas visitors arriving at Kansai International Airport (KIX) have a comfortable 75-minute ride by the JR Haruka Express train to Kyoto Station. There is a direct subway link from Kyoto Station to Kyoto International Conference Hall, taking about 20 minutes.

Access Time from Kvoto

,		
inations	min.	/ -
al Airport (by car)	1 h55	
(by train)	75	
(by train)	30	
(by train)	60	
(by train)	35	Morioka
(by bullet train)	2h15	TIGITORG
1	.0	New Tokyo International Airport
Kansai Internation	onal Air	port
i	nations al Airport (by car) (by train) (by train) (by train) (by train) (by bullet train) Osaka Airport Kobe	nations min. al Airport (by car) 1h55 (by train) 75 (by train) 30 (by train) 60 (by train) 35 (by bullet train) 2h15 Osaka Airport Kyoto Kobe

ICSE99^{The 21st International Conference} on Software Engineering

Los Angeles Airport Marriott Hotel, **USA**

General Chair:

Prof. Barry Boehm USC-CSF Los Angeles, CA 90089-0781 USA boehm@sunset.usc.edu

Industry Presentations Chair:

Mr. Larry Bernstein Have Laptop, Will Travel 4 Marion Ave. Short Hills N.I 07078 lbernstein@worldnet.att.net

Program Co-Chairs:

Prof. Jeff Kramer Prof. David Garlan Computer Science Dept. Department of Computing Carnegie Mellon Univ. Imperial College Pittsburgh, PA 15213 London UK garlan@cs.cmu.edu

May 16-22, 1999

Preparing for the Software Century: Software Engineering Challenges for the Global Electronic Community

Software pervades all of the growing web of computers, communications, personal and commercial services, financial and public services, and entertainment services evolving into the global electronic community of the 21st century. Providing timely, cost-effective, high-quality software for the diverse stakeholders of this community will require the best possible technology and practices the software engineering community can provide.

ICSE 99 provides a number of linked forums for presenting and discussing the most promising approaches for meeting these challenges. The forums include the main conference May 19-21, and associated special-topic workshops, symposia, and tutorials May 16-18 and May 22, 1999. The ICSE 99 main conference will include refereed technical papers, invited industry presentations, panels, exhibits, and leading keynote speakers. Featured keynote speakers will include Dr. Alan Kay, Vice President and Disney Fellow, Walt Disney Imagineering; and Dr. William Wulf, the first software engineer to serve as President of the U.S. National Academy of Engineering. The conference will be organized around four main subthemes:

- · Quality and Service to People.
- · Product Line Architecture and Componentry.
- · Integrating Process and Product Engineering.
- · Advanced Applications.

The deadline for submitting refereed technical papers, panel proposals, and tutorial proposals will be September 4, 1998, Besides research papers and experience reports, the Program Committee encourages well-analyzed case-studies of experiences and lessons learned in developing significant software systems. The deadline for submitting workshop proposals will be June 5, 1998. If

May is a glorious time in Los Angeles. The average noon temperature is 72° F. The area's beaches/om/baneature/stampler strange-strange summer tourism. The Conference will be arranging tours to some of these attractions for attendees, ference organizers.

The Los Angeles Airport Marriott Hotel has a pleasant and relaxing semitropical atmosphere, yet is just a free half-mile shuttle ride from the Los Angeles International Airport. Room rates for attendees will be an attractive \$119 per night.

ICSE98 Committee Members

General Chair

Koji Torii (NAIST, Japan) torii@is.aist-nara.ac.jp

Technical Co-Chairs

Takuya Katayama (JAIST, Japan)

katayama@jaist.ac.jp

David Notkin(U.of Washington)

notkin@cs.washington.edu

Program Committee Co-chairs

Kokichi Futatsugi (JAIST, Japan)

kokichi@jaist.ac.jp

Richard Kemmerer (UCSB, USA)

kemm@cs.ucsb.edu

PC Members:

Betty H.C. Cheng (Michigan State U, USA)

Shing-Chi Cheung (Hong Kong U of Sci and Tech, Alain Abran (U. de Quebec a Montreal, Canada)

Lori A. Clarke (U of Massachusetts, USA)

Michael Cusumano (MIT, USA)

Premkumar Devanbu (U of Calf Davis, USA)

Alfonso Fuggetta (Politecnico di Milano, Italy)

John Gannon (U of Maryland, USA)

David Garlan (CMU, USA)

Richard Gerber (U of Maryland, USA)

Carlo Ghezzi (Politecnico di Milano, USA)

William Griswold (U of Calf San Diego, USA)

Daniel Hoffman (U of Victoria, Canada)

Shinichi Honiden (Toshiba, Japan)

Susan Horwitz (U of Wisconsin, USA)

Katsuro Inoue (Osaka U, Japan)

Joxan Jaffar (National U of Singapore, Singapore)

Mehdi Jazayeri (TU Vienna, Austria)

Ross Jeffery (U of New South Wales, Australia)

Dehua Ju (East China U of Sci and Tech, China)

Kyo C. Kang (Pohang U of Sci and Tech, Korea)

John C. Knight (U of Virginia, USA)

Jeff Kramer (Imperial College of Sci Tech and Medi-

cine, UK)

Reino Kurki-Suonio (Tampere U of Technology, Fin-tokyo.ac.jp

land)

Axel van Lamsweerde (Universite Catholique de Gail Murphy (U. of British Colombia, Canada)

Louvain, Belgium)

Nancy Leveson (U of Washington, USA)

Klaus-Peter Lohr (Freie U Berlin, Germany)

Mark Moriconi (SRI, USA)

Kumiyo Nakakoji (SRA & NAIST, Japan)

Dewayne E. Perry (Bell Lab, USA)

Adam Porter (U of Maryland, USA)

Gruia-Catalin Roman (Washington U in St.Louis, USA) mikio@csd.ts.fujitsu.co.jp

Motoshi Saeki (Tokyo Inst. of Tech., Japan)

Wilhelm Schaefer (U Paderborn, Germany)

Will Tracz (Lockheed Martin Federal Systems, USA)

Alexander L. Wolf (U of Colorado, USA)

Michal Young (U of Oregon, USA)

Lessons and Status Reports Chair

Motoei Azuma(Waseda U., Japan)

azuma@azuma.mgmt.waseda.ac.jp

Asia Pacific Area Chair

Ryoichi Hosoya (NTT, Japan)

hosoya@slab.nett.co.jp

LSR North and South America Area Chair

Richard Fairley (Colorado Tech., USA)

Dfairley@aol.com

LSR Europe and Africa Area Chair

Mario Fusani (CNDE, Italy) fusani@iei.pi.cnr.it

Lessons and Status Reports Members:

Lorraine Duval (Kaman Sciences Corporation, USA)

Hans-Ludwig Hausen (GMD Germany)

Barbara Hoerger (Benz, Germany) Tomoji Kishi (NEC, Japan)

Dan-Hyun Lee (SERI/KIST, Korea)

Kiyoo Nakamura (Fujitsu, Japan)

Akihiko Ohsuga (Toshiba, Japan)

Jun Ohya (ATR, Japan)

Shigeru Otsuki (Hitachi, Japan)

Hugo Rehesaar (U.of New South Wales, Australia)

Terry Rout (Griffit U., Australia)

Walt Sccachi (USC,USA)

Kenji Uehara (Mitsubishi, Japan)

Poster & Research Demo

Yoshiaki Fukazawa (Waseda U., Japan)

fukazawa@cfi.waseda.ac.jp

Ray Offen (Macquarie University, Australia)

roffen@mpce.mq.edu.au

Doctor Symposium

Simon Kaplan (U. of Queensland, Australia)

s.kaplan@dstc.edu.au

Tetsuo Tamai (Tokyo U., Japan) tamai@graco.c.u-

murphy@cs.ubc.ca

Bashar Nuseibeh (Imperial College, UK)

ban@doc.ic.ac.uk

Motoshi Saeki (TITEC, Japan)

saeki@cs.titech.ac.ip

Workshops

Mikio Aoyama (NIIT, Japan)

Frances Paulish (Siemens, Germany)

Frances.Paulish@zfe.siemens.de

Dewayne Perry (Bell Lab, USA) dep@research.bell-labs.com

Exhibition

Shinichi Honiden (Toshiba, Japan)

honiden@ssel.toshiba.co.jp

Bernd J. Kraemer (Fern U. Hagen, Germany)

bernd.kraemer@fernui-hagen.de

Anthony Wasserman (Software Methods & Tools,

USA) tonyw@methods-tools.com

Asia Pacific Forum

Koichi Kishida (SRA, Japan) k2@sra.co.jp

Dines Bjorner (UNU/IIST, Macao) db@iist.unu.edu

Keijiro Araki (Kyushu U., Japan)

araki@csce.kyushu-u.ac.jp

Operating Chair

Norihisa Doi (Keio U., Japan) doi@keio.ac.jp

Publicity

Katsuro Inoue (Osaka U., Japan)

inoue@ics.es.osaka-u.ac.jp

Stan Jarzabek (National U of Singapore,

Singapore) stan@iscs.nus.sg

Andrew Vickers (U. York, UK)

andyv@minster.york.ac.uk

Marvin Zelkowitz(U. Maryland, USA)

mvz@cs.umd.edu

Technical Service

Ichiro Morihara (NTT, Japan)

morihara@sdc.bch.ksi.ntt.co.jp

Publication

Tsuneo Ajisaka (Wakayama U., Japan)

ajisaka@sys.wakayama-u.ac.jp

Masami Noro (Nanzan U., Japan)

yoshie@iq.nanzan-u.ac.jp Hiroyuki Tarumi (Kyoto U., Japan)

tarumi@kuis.kyoto-u.ac.jp

Local Arrangement

Kiyoshi Agusa (Nagoya U., Japan)

agusa@nuie.nagoya-u.ac.jp

Registration

Ryohei Nakatsu (ATR, Japan)

nakatsu@mic.atr.co.jp

Treasurer

Seishiro Tsuruho (NTT Data, Japan)

tsuruho@plan.rd.nttdata.co.jp

Secretariat

nara.ac.jp

Masaki Koyama (NAIST, Japan) koyama@itc.aist-



ICSE98

Sponsored by

Science Council of Japan Information Processing Society of Japan Japan Society of Software Science Technology IEEE Computer Society, Technical Committee on Software Engineering ACM Special Interest Group on Software Engineering

In cooperation with

Ministry of Education, Science, Sports and Culture Ministry of Posts and Telecommunications City of Kyoto National Institute of Standards and Techology

