Formalizing and Automating the Software Process

The theme "Formalizing and Automating the Software Process" identifies the two essential activities for realizing the potential of Software Engineering. The first is to rigorously define software creation and evolution processes. The second is to create organizational and automated systems supporting these processes. This theme has guided the definition of a Technical Program organized into Process, Formalism and Automation Tracks, a Tutorial Program providing background information, and a Tools Fair in which a variety of available technology will be demonstrated.

Each of the tracks in the Technical Program includes major talks, papers, workshop reports and panels that collectively expose and integrate relevant, current activities. The Process Track concerns approaches to defining, measuring, assessing, modifying and evolving software processes. Automated and organizational systems supporting these processes are the subject of the Automation Track. The Formalism Track covers both the use of formalism within the processes and the rigorous definition of the processes, their constituent activities and the supporting organizational and automated systems.

The Tutorial Program precedes the other activities and provides in-depth, one-day introductions to a variety of technology pertinent to formalizing and automating the software process. The program covers database technology supporting software engineering, software development environments, knowledge-based programming environments, formal specification and verification techniques, and software reusability.

The Tools Fair includes demonstrations of both production and prototype tools. It also includes in-depth, technical presentations covering particularly interesting and innovative tools. The Tools Fair parallels the Technical Program and its activities are scheduled to allow attendance at both activities.

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Software Productivity Consortium

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The Fellowship of Engineering, United Kingdom Information Processing Association of Israel
Israel Section of the IEEE

Singapore Computer Society
Singapore National Computer Board
Software Engineers Association of Japan
British Computer Society
TOOLS FAIR

31 March - 2 April 1987

The Tools Fair runs parallel to the Technical Program, scheduled to allow attendance at both activities. The purpose of the Tools Fair is to provide conference attendees an opportunity to view a variety of production and prototype software development tools, toolsets and environments from both the research community and industry.

Individual tools, integrated toolsets and full-scale environments will be demonstrated in an exhibition area, providing the opportunity to gain first-hand experience and informally discuss technical details. In addition, a sequence of special presentations will be devoted to the description and demonstration of the technical details of particularly interesting or innovative technology.

Applications for space within the exhibition area and proposals for special presentations must be received by 30 January 1987. Presentation proposals will be judged on the depth of technical content, freedom from marketing "hype," and suitability for illustrating interesting and novel aspects. Applicants for space in the exhibition area are advised that marketing activity will not be allowed.

To request exhibition space or propose a special presentation, contact either of the Tools Fair Chairs:

Larry E. Druffel (412) 268 7740
Jack C. Wileden (413) 545 0289

TUTORIALS

30 March 1987

The Tutorial Program includes several in-depth, one-day introductions to a variety of technology pertinent to formalizing and automating the software process:

- Database Technology for Software Engineering
  - John Nestor
  - Richard Snodgrass
  - University of North Carolina, Chapel Hill

- Software Development Environments
  - Peter B. Henderson
  - State University of New York at Stony Brook
  - Wang Institute

- Formal Specification and Verification
  - Richard A. Kemmerer
  - University of California, Santa Barbara

- Knowledge-based Programming Environments
  - David R. Barstow
  - Schlumberger-Doll Research

- Software Reusability
  - John B. Goodenough
  - Software Engineering Institute
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<td><strong>Software Processes Are Software Too</strong></td>
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<td><strong>Intelligence In User Interfaces: Is It Necessary?</strong></td>
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<td><strong>AUTOMATION</strong></td>
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<td><strong>The Use of Formalisms In Software Development: Programs &amp; Meta-Programs</strong></td>
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Legend of Paper Numbers:

P1 Modeling Software Failures & Reliability Growth During System Testing: T. Emerson, W. Ehrlich
P2 Software Metrics Using Deviation Value: Y. Miyazaki, N. Murakami
P3 An Architecture for Intelligent Assistance in Software Development: P. Feiler, G. Kaiser
P4 SOFTWARE EVOLUTION MANAGEMENT: An Integrated Discipline for Managing Software: D. Schwartz
P5 INTERFORM: A CAD System for Program Development: D. Serbanati
P6 A Comparison of Four Design Methods for Real-Time Systems: J. Kelly
P7 Knowledge-Based Software Design Using Design Schemas: M. Lubars, M. Harandi
P8 Use of Software Engineering Tools in Japan: T. Nomura
P9 A System for Parallel Programming: K. Schwan, R. Ramnath, S. Vasudevan, D. Ogle
P10 Tailoring the Software Process to Project Goals and Environments: V. Basili, H. Rombach

F1 An Experiment in Technology Transfer: PAISLey Specification of Requirements for an Undersea Lightwave Cable System: E. Berliner, P. Zave
F2 Parameterized Programming in OBJ2: K. Futatsugi, J. Goguen, J. Meseguer, K. Okada
F3 SEGRAS - A Formal Language combining Petri Nets and Abstract Data Types for Specifying Distributed Systems: B. Kramer
F4 Specification of Time Dependencies and Synthesis of Concurrent Processes: P. Ladkin
F5 Software Interconnection Models: D. Perry
F6 Specifying Software/Hardware Interactions in Distributed Systems: G. Roman

A1 Version Control in the Inscape Environment: D. Perry
A2 Version Control in Families of Large Programs: J. Winkler
A3 Human-Computer Communication Meets Software Engineering: C. Rathke
A4 A Conceptual Programming Environment: S. Reiss
A5 A Knowledge Structure for Reusing Abstract Data Types: D. Embley, S. Woodfield
A6 From Design to Redesign: G. Fischer, A. Lemke, C. Rathke
A7 PARIS: A System for Reusing Partially Interpreted Schemas: C. Richter, S. Katz, K. The
LODGING RESERVATION FORM
CUT-OFF DATE: 23 February 1987

PROCEDURE:
1. Send this form to:
ICSE-9 Housing Bureau
Monterey Peninsula Housing & Convention Bureau
PO Box 1770
Monterey, CA 93940
Complete the charge authorization or enclose a check, for one night's lodging, payable to Monterey Peninsula Visitors and Convention Bureau.
2. Block reservations will not be accepted.
3. Phone reservations will not be accepted by either the bureau or the participating hotels/motels.
4. List a first, second and third choice; your reservation will be made at your most preferred, available hotel/motel.
5. You will receive your room confirmation directly from the hotel/motel.
6. The rates listed do not include room tax.
7. Suite requests must be made in writing to ICSE-9 Suite Request, MPV&C, PO Box 1770, Monterey, CA 93940.
8. Notify the Monterey Peninsula Visitors and Convention Bureau, in writing, of any cancellations or changes in your reservation before 15 March 1987. After 15 March 1987, contact the confirming hotel/motel directly. Deposits will be refunded only with 72-hour cancellation notice.

(Please type or print)

Name: ____________________________
Organization: ________________________________
Address: ___________________________________________
Phone: ( ) ____________________

Room Preference: ___ Single ___ Double

Dates: Arrival ____________ Departure ____________

Hotel/Motel Preference: please indicate your preference using 1st, 2nd, 3rd, etc.

Single: Double:
___ Casa Munras - standard $65 $65
___ Casa Munras - deluxe $75 $75
___ Doubletree $95 $105
___ Hilton Inn Resort $89 $99
___ Hyatt Regency $95 $95
___ Monterey Beach - gardenside $55 $55
___ Monterey Beach - oceanfront $65 $65
___ Monterey Plaza - hills view $112 $112
___ Monterey Plaza - cannery row view $128 $128
___ Monterey Plaza - ocean view $144 $144
___ Monterey Plaza - deluxe ocean view $160 $160
___ Sheraton $95 $105

Credit Card: ___ Visa ___ MasterCard ___ Choice ___ AmExpress
Credit Card Number: _______________________
Expiration Date: _______________________
Cardholder's Name: _______________________
Signature: _______________________

CONFERENCE REGISTRATION FORM

PROCEDURE:
1. Send this form to:
ICSE-9 Registration
Computer Society of the IEEE
1730 Massachusetts Ave., NW
Washington, DC 20036-1903
2. To guarantee your registration, complete the charge authorization or enclose a check payable to Computer Society of the IEEE.
3. Members of sponsoring organizations are eligible for the reduced Member Fees. Please indicate the sponsoring organization and your membership number when claiming these fees.
4. The Conference Fee includes admission to the technical sessions, admission to the Tools Fair, one copy of the Conference Proceedings (except students), refreshments at breaks, and receptions.
5. The Tutorial Registration Fee includes tutorial notes and lunch.
6. Refunds (less a $15 handling fee) will be made if a request is received in writing by 15 March 1987.

(Please type or print)

Name: ____________________________
Organization: ________________________________
Address: ___________________________________________
Phone: ( ) ____________________

TUTORIAL CHOICE (choose at most one):
___ Database (Nestor/Snodgrass)
___ Environments (Henderson/Ardis)
___ Formal (Kemmerer)
___ Knowledge-based (Barstow)
___ Reusability (Goodenough)

FEES: Advance Registration (Prior to 25 Feb 1987)
Member Non-Member Student/Retired
Conference $160 $200 $25
Tutorial $125 $155 $50

Late Registration (After 25 Feb 1987)
Member Non-Member Student/Retired
Conference $200 $250 $35
Tutorial $155 $195 $60

Conference Fee: _______________________
Society: _______________________
Membership Number: _______________________
Tutorial Fee: _______________________
TOTAL FEE: _______________________

Credit Card: ___ Visa ___ MasterCard ___ Choice ___ AmExpress
Credit Card Number: _______________________
Expiration Date: _______________________
Cardholder's Name: _______________________
Signature: _______________________