

State of the Art and Future Challenges on Collaborative Design

A Special Issue of the Journal:

International Journal of e-Collaboration

<http://www.idea-group.com/>

Guest editors:

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IJeC editor:

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Topics:

Networked organization structures are common practice in numerous industry sectors, like automobile, aerospace, electronics or construction. Examples are networks of manufacturers with their suppliers, co-operations in product development or construction projects, and cluster organizations of sub-suppliers. This increasing cooperation among enterprises during the entire product life-cycle is related to business drivers, such as the need for increased flexibility, cost reduction, focus on core competencies or forming strategic alliances. Collaboration has become a key issue for agile and flexible engineering processes.

This special issue of IJeC focuses on a specific area of co-operation: collaborative design, i.e. product design in distributed groups based on a joint technical infrastructure and common collaboration objectives. Information technology supporting collaborative design includes general collaboration support (groupware and tele-cooperation tools) and domain-specific solutions, like product lifecycle management systems, environments for electronic design automation or domain repository systems. Furthermore, the special issue is closely related to the 4th International Workshop on Challenges in Collaborative Engineering. The papers accepted for this workshop will be evaluated with respect to suitability for the special issue. However, submission of papers directly to the special issue is also possible.

As in the previous years, the CCE workshop will have a special focus on a relevant area of collaborative engineering, but contributions from all areas are encouraged. In its 2006 edition, the focus of CCE will be on collaborative design, mainly on the application domain of electronic systems. Contributions of innovative techniques and practical experiences on collaboration at all phases of design are welcomed: specification, simulation, prototyping and implementation. In each of those phases, there are many challenges and unsolved problems from the industrial perspective, including technical, organizational and social aspects.

We welcome submissions that address issues associated with collaborative engineering in dispersed teams or networked organizations. Examples of such topics include (but are not limited to):

- Distributed collaborative engineering tools: development and use. Tool description manuscripts are also welcome when accompanied of testing and evaluation.
- Collaborative engineering in specific application domains, like electronic design, management and consistency control, sharing of facilities or tool encapsulation
- Experience reports from collaborative engineering in organizational clusters, networks, industrial districts, or other organizational cooperative forms
- Organizational structures and team composition issues associated collaborative engineering in dispersed groups
- Cross-cultural issues associated with collaborative engineering projects
- Knowledge management in collaborative engineering
- Knowledge sharing and collaborative learning
- Failures in distributed collaborative engineering
- Collaborative engineering services, like support for complex work flows,
- Economic aspects of collaborative engineering, like measuring benefits of collaboration on design

Researchers, practitioners from industry, software developers and end users are invited to contribute to the discussion by presenting application problems, giving experience reports, or by introducing concepts, methods, and software solutions.

Submission guidelines:

All submissions must be in English, and should represent the original work of the authors. Improved versions of papers previously published in conference proceedings are welcome, provided that no copyright limitations exist.

Submissions to the 4th International Workshop on Collaborative Engineering have to follow the guidelines published on the workshops homepage: <http://cce.ecolleg.org/2006/>. Other submissions must be made electronically via e-mail to Kurt Sandkuhl, Leandro Indrusik and Lennart Karlsson (address below). The manuscript should be included as an attachment in MS Word format.

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Manuscripts should be between 4000 and 6000 words in length. Submissions should include the following:

- (a) On the subject of the e-mail message: the text “Manuscript submission” followed by the title of the manuscript being submitted. Please do not include any character (@#%\$^&, etc) in the title.
- (b) On the body of the e-mail message, for each author: Name, university/organization affiliation, e-mail, mailing address, phone/fax numbers. Please indicate who the contact person is for the submission.
- (c) On the paper: Submission title, an abstract of the submission, the main body of the submission, references and/or bibliography. Please do not include the name of the authors or any information that would allow for their identification on the paper. Reviews will be blind.

All paper submissions and the submission review process will be managed through e-mail. The receipt of submissions will be quickly confirmed by e-mail. References should relate only to material cited within the manuscript and be listed in alphabetical order, including the author's name, complete title of the cited work, title of the source, volume, issue, year of publication, and pages cited. Please do not include any abbreviations. Information on camera-ready copy preparation will be provided to submitting authors upon acceptance.

Important dates:

Below are tentative dates for all the main steps involved in the production and publication of the Special Issue:

- March 31, 2006: All submissions are due to the guest editors.
- May 31, 2006: Decisions and review comments are sent to authors.
- July 15, 2006: Revised and resubmitted manuscripts are sent back out for review.
- August 31, 2006: Final decision letters are sent to authors.
- September 30, 2006: Final revised manuscripts are due to Editor.
- December 1, 2006: Special Issue goes to Idea Group for publication.
- January 1, 2007: Proofs go to authors.
- March 1, 2007: Special Issue is published.

About the guest editors:

Kurt Sandkuhl is a full professor of information engineering in the School of Engineering at Jönköping University in Sweden. He received his M.S. and Ph.D. in computer science from Technical University of Berlin. Before joining Jönköping University in 2002, Kurt was a scientific employee at Technical University of Berlin (1988-1994), and department manager (1996-2000) and division manager (2000-2002) at Fraunhofer-Institute for Software and Systems Engineering in Berlin. In 1993, he received the innovation award “Dr.-Ing.-Rudolf-Hell-Innovationspreis” from Linotype-Hell AG, Germany. Kurt has taught courses on software engineering methods, development of distributed applications, computer-supported collaborative work, information logistics, information modeling, software quality management, information logistics and graduate seminars in information systems. His current research interests are in computer-

supported collaborative work, information logistics, ontology engineering and electronic publishing. Kurt has published three books and more than 50 papers in journals and international conferences. Furthermore, he was Program Chair and General Chair for several workshops on collaborative engineering and information logistics.

Leandro Soares Indrusiak received a Diploma in Electrical Engineering from the Federal University of Santa Maria (UFSM), Brazil, in 1995, a Master in Computer Science from the Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, Brazil in 1998 and a Doctoral degree jointly issued by UFRGS and Technische Universität Darmstadt (TUD), Germany in 2003. After his doctorate he continued in Darmstadt as a senior researcher at the Institute of Microelectronic Systems and as the coordinator of the International Master Program in Information and Communication Engineering. Previously he held a position as assistant professor at the Informatics Department, Pontifical Catholic University of Rio Grande do Sul (PUCRS) in Uruguaiana, Brazil and worked for consultancy and training companies in the field of information technology. His research interests include computer-aided design of hardware/software systems, model-driven design, distributed and pervasive computing, reconfigurable technologies, collaborative design, remote labs and e-learning.

Lennart Karlsson is full professor and Head of the Division of Computer Aided Design at Luleå University of Technology. He is managing The Polhem Laboratory, which is a center of excellence in integrated product development, financed by VINNOVA, Luleå University of Technology and twelve industrial partners. Professor Karlsson is also Vice President of the university, with special responsibility for industry collaboration. He has published papers and books in the fields of product development, engineering design, modeling and simulation within product development. Furthermore, he has initiated research efforts and published papers in the fields of Engineering Information Systems and Distributed Engineering. Professor Karlsson is awarded with the Maud and Samme Lindmark prize for successful collaboration efforts with industry.

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