International Workshop on Knowledge Engineering and Human-Computer Interaction KEHCI’2004
(Funchal, Island of Madeira, Portugal, January 13, 2004)
during
ACM Conf. on Intelligent User Interfaces IUI’2004 &
Int. Conf. on Computer-Aided Design of User Interfaces CADUI’2004
(Funchal, January 14-16, 2004)

Workshop co-chairs
Vasco Furtado (primary contact)
University of Fortaleza
Av. Washington Soares, 1321 - Edson Queiroz, Fortaleza – CE 60 811-905 (Brazil)
Phone : 55 85 2249633
Fax :55 85 4521164
E-mail: vasco@unifor.br

Jean Vanderdonckt
School of Management (IAG), Université catholique de Louvain
Place des Doyens, 1 – B-1348 Louvain-la-Neuve (Belgium)
E-mail: vanderdonckt@isys.ucl.ac.be – URL: http://www.isys.ucl.ac.be/bchi/members/jva

Full day workshop
Motivation

**Human-computer Interaction (HCI)** researchers study methods and techniques to develop interactive software with the highest degree of quality possible, including usability as a primary quality goal. To reach this quality goal, many Computer-Aided Designs of User Interface (CADUI) have incrementally focused on representing the goals and properties of the users and the current context of use. In particular, the design of interfaces from task and user models is a widespread approach that addresses this need. The User Interfaces (UIs), which can be produced, however, vary widely. They can be, for example, Intelligent User Interfaces (IUIs), which have the ability to make decisions that go beyond what the user has instructed them to do.

**Knowledge Engineering (KE)** has studied methods to acquire, elicit, represent, and manipulate knowledge in computer-based systems. Recently, a broader scope includes methods and tools to cope with Knowledge Management (KM) and organizational memories. Many improvements in this context have been conquered since the Newell’s knowledge level notion namely methodologies and tools to knowledge modeling as Generic tasks, Role-limiting methods, Problem-Solving Methods (PSM) and CommonKADS. The KE domain today comes up with established methodologies to build knowledge-based systems (KBS). Even if, traditionally KBS have not been developed as an interactive system, it is more and more evident that in real world problem solving, human participation is necessary. The construction of knowledge bases as a static view of the human expertise can lead to different interpretations of the KBS user. Therefore the concept of interactive KBS emerges as an interesting one, which promotes the integration of HCI aspects for providing user interaction. KBS methodologies must integrate HCI notions, and consider capabilities of cooperation, explanation, argumentation and critics.

It is quite interesting to see that many concepts, such as tasks, roles, actions, goals, problem solving, have been extensively researched and refined in the KE domain, while being used in the HCI field, but in a more general perspective. Therefore, there may be some interest to see when and how these intersections arise.

The interaction between researchers of both areas aims at identifying where intersections can produce improvements in both directions. Knowledge modeling concepts from KE can help to represent better goals, soft goals, tasks, and properties of the users in order to help in producing UIs or to make adaptation decisions of the IUIs. Conversely, HCI concepts and methods can help in the production of interactive KBS and Knowledge Management tools in a more generic manner.

Topics of Interesting

In this one-day workshop, we invite contributions, which illustrate methodological, technical, applicable and theoretical aspects of the interaction between KE and HCI. These topics include, but are not limited to:

- **HCI specification and generation for systems related to KE**
  - Interface generation to KBS;
  - Interface specification to KE tools;
  - Interface generation to KE tools from knowledge-intensive task models;
  - Methodologies to identify interaction points in PSM;
  - Identification of interactive patterns for using in PSM;
  - Help on-line and explanation in KBS;
  - Intersections of HCI task and user models with KBS communication and agent models;
  - Use of Interface modeling languages and specification languages for the specification of Interfaces of Shells, Knowledge-based Systems and Knowledge elicitation tools;
  - Architectures for interactive KBSs;

- **Use of KE notions to help HCI**
  - Contribution of modeling PSM for automatic generation of Interfaces;
  - Knowledge acquisition to represent task and user model;
First tentative draft of workshop proposal for IUI-CADUI’2004

- Knowledge representation issues to task and user modeling;
- Contribution of KBS to generate presentation and dialog models
- Contribution of KBS to make adaptation decisions;
- Use of reasoning techniques for achieving personalization;
- Reverse engineering applied to knowledge acquisition tools and KBS in order to produce standard conceptual interfaces;

• HCI and KM
  - Contribution of Organization models in order to help in designing interactive KM tools;
  - Interactive tools for assisting in modeling KM activities;
  - Context sensitive KM tools which take into account models of environment and physical Layouts;

Methodology of Work (full-day in January, 13)

Prior to the workshop, a working document will be produced that raises significant questions to be addressed by researchers belonging to both communities. This working document will revisit issues related to the development life cycle (from early requirements to late evaluation and maintenance), but under the light of interfaces for knowledge engineering applications. This document will contain a table comparing models, methods, notations, and tools existing in both worlds (HCI and KE) to identify what material from one domain can contribute to the other.

Depending on their presentations, participants will be distributed into groups centered on a series of questions related to some steps of the development life cycle. For example, people doing research about tasks models will be grouped in the "Task" group.

For each group, one (or at most two) paper will be selected to be presented by the author and the other papers will be read and discussed by the other members so as to create a structured discussion. The results of this discussion will be integrated into the working document.

Submission procedure

Important dates:
Issuing the workshop call: September 1, 2003
Submission of abstracts: September 30, 2003
Submission of papers: October 4, 2003
Notification of acceptance: November 30, 2003
Publication of on-line proc.: December 22, 2003
Workshop: January 13, 2004
Notification of revision: January 31, 2004
Revised versions for Post-proceedings: March 1, 2004
Publication of proceedings: May 30, 2004 (expected)

Authors of papers must submit abstracts of their papers by SEPTEMBER 1, 2003, followed by the papers themselves by OCTOBER 4, 2003. All submissions must follow the ACM standard paper format (http://www.acm.org/sigs/sigchi/chipubform/) and be submitted electronically in PDF format to the workshop co-chairs. All submissions must be no longer than 10 (ten) pages in the standard ACM format. Authors are requested to prepare submissions as close as possible to final camera-ready versions. Members of an international program committee will review all submissions. For questions and comments, please contact the workshop co-chairs at kehci2004@iag.ucl.ac.be

Publication

All papers accepted for the workshop will be first published in on-line proceedings of the workshop. It is likely that the proceedings will be published at http://sunsite.informatik.rwth-aachen.de/Publications/CEUR-
WS/index.html or another similar site. Provided that accepted papers are substantive both in quantity and quality, it is expected that revised versions of selected papers will form chapters of a book entitled “Knowledge Engineering and Human-Computer Interaction”. This book will be submitted to the Kluwer International Series in HCI (http://www.wkap.nl/prod/s/HCIS)

Program committee
Julio Abascal, University of the Basque Country, Spain
Cristina Baroglio, University of Torino, Italy
Pablo Castells, University of Madrid, Spain
Nancy J. Cooke, New Mexico State University, USA
Wolfgang Dzida, Fraunhofer Gesellschaft, Germany
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Miguel Gea, University of Granada, Spain
Nicola Guarino, LADSEB-CNR, Padova, Italy
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Manu Kolp, Université catholique de Louvain, Belgium
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Oscar Pastor, University of Valencia, Spain
Fabio Paternò, ISTI, Italy
Costin Pribeanu, ICI Bucarest, Romania
Roel Wieringa, University of Twente, The Netherlands (pending)
Michelle X. Zhou, IBM Thomas Watson research Center, USA

Sponsor
The workshop is mainly sponsored by SIMILAR, The European research task force creating human-machine interfaces similar to human-human communication (see http://www.similar.cc)