



## 3<sup>rd</sup> Symposium

HCI&UE Workgroup - Austrian Computer Society

### Program

## Tutorials, Workshops, Workgroup Meetings Wednesday, 21<sup>st</sup> November 2007

13:00 - 17:00	<b>Tutorial: Introduction to Visual Analytics</b> Tutorial Chair: Silvia Miksch (Danube University Krems, Austria) Tutorial Presenters: Wolfgang Aigner & Alessio Bertone (Danube University Krems, Austria) Room: SZ KW.21, Auenbruggerplatz 2/II (2nd Floor)
13:00 - 17:00	<b>Workshop: Usability and Ergonomics in the OR</b> Workshop Chair: Klaus-Martin Simonic (Medical University of Graz, Austria) Workshop Organizers: Ulrich Matern & Dirk Büchel (Experimental-OR, Tuebingen, Germany) Room: S-05-170, IMI-Besprechungsraum/Bibliothek, Auenbruggerplatz 2/V (5th Floor)
17:00 - 18:00	<b>Meeting M1: Collaborative International Research Centre for Universal Access (CIRCUA) Workgroup Meeting</b> Meeting Chair: Ray Adams (Middlesex University London and Cambridge University, UK) Room: S-05-170, IMI-Besprechungsraum/Bibliothek, Auenbruggerplatz 2/V
18:00 - 19:00	<b>Meeting M2: Meeting of the Austrian Computer Society, WG HCI &amp; UE</b> Meeting Chair: Andreas Holzinger (Medical University Graz, Austria), Margit Pohl (Vienna University of Technology, Austria) Room: S-05-170, IMI-Besprechungsraum/Bibliothek, Auenbruggerplatz 2/V
19:00	<b>Informal "Get Together"</b> Room: Patho Aula

# 3<sup>rd</sup> Symposium of the WG HCI&UE of the Austrian Computer Society

Thursday, 22<sup>nd</sup> November 2007

## Color Codes

<b>Green</b>	Patho Aula
<b>Red</b>	Hörsaal Patho
<b>Darkblue</b>	Patho Mikroskopiersaal
<b>Yellow</b>	Besprechungsraum Kinderklinik
<b>Brown</b>	Mehrzweckraum Kinderchirurgie, 1.Stock
<b>Violett</b>	Hörsaal HNO
<b>Lightblue</b>	Hörsaal D

## Program Overview

08:00 - 09:45	<b>Registration, Welcome Coffee and Industrial Exhibition</b> Room: Patho Aula
09:45 - 10:00	<b>Opening and Welcome Address</b> Room: HS Patho
10:00 - 10:45	<b>Plenary Opening Session A: Formal Methods in Usability Engineering (1)</b> Session Chair: A Min Tjoa (Vienna University of Technology, Austria) Room: Hörsaal Patho
11:00 - 12:45	<b>Session B: System Analysis &amp; Methodologies for Design and Development</b> Session Chair: Philippe Palanque (Université Paul Sabatier - Toulouse III, LIIHS-IRIT, France) Room: Hörsaal Patho
10:45 - 12:15	<b>Session C: Ambient Assisted Living &amp; Life Long Learning</b> Session Chair: Ray Adams (Middlesex University London & Cambridge University, UK) Room: Patho Mikroskopiersaal
11:00 - 13:00	<b>Session D: Visualization and Simulation in Medicine &amp; Health Care</b> Session Chair: Keith Andrews, Graz University of Technology (Austria) Room: Besprechungsraum Kinderklinik
11:00 - 12:45	<b>Session E: Usability of Mobile Computing and Augmented Reality</b> Session Chair: Luca Chittaro (University of Udine, Italy) Room: Mehrzweckraum Kinderchirurgie, 1.Stock
13:00 - 15:00	<b>Lunch Break and Industrial Exhibition</b> Room: Patho Aula
15:30 - 17:15	<b>Session F: Medical Expert Systems and Decision Support</b> Session Chair: Anne-Sophie Nyssen (Université de Liege, Belgium), Berndt Urlsberger (Medical University of Graz, Austria) Room: Hörsaal HNO

14:30 - 16:20	<b>Session G: Research Methodologies, Cognitive Analysis &amp; Clinical Applications</b> Session Chair: Margit Pohl (Vienna University of Technology, Austria) Room: Besprechungsraum Kinderklinik
15:30 - 17:30	<b>Session H: Ontologies, Semantics, Usability and Cognitive Load</b> Session Chair: Michael R. Alvers (Transinsight, Dresden, Germany), Bo Hu (University of Southampton, UK) Room: Patho Mikroskopiersaal
16:00 - 18:00	<b>Session J: Agile Methodologies, Analytical Methods and Remote Usability Testing</b> Session Chair: Karl-Heinz Weidmann (University of Applied Sciences Vorarlberg, Austria) Room: Hörsaal D
17:00 - 18:00	<b>Coffee Break and Industrial Exhibition</b> Room: Patho Aula
18:00 - 18:45	<b>Plenary Closing Session K: Formal Methods in Usability Engineering (2)</b> Session Chair: Marilyn Sue Bogner (Institute for the Study of Human Error, USA) Room: HS Patho
18:45 - 19:00	<b>Presentation of USAB Awards and Closing Adress</b> Room: HS Patho
20:00	<b>Reception at the Town Hall by the Mayor of Graz</b>

## Detailed Program

08:00 - 09:45	<b>Registration, Welcome Coffee and Industrial Exhibition</b> Room: Patho Aula
09:45 - 10:00	<b>Opening and Welcome Address</b> Karlheinz Tscheliessnigg (Welcome from the Medical University of Graz), Andrea Berghold (Welcome from the Institute for Medical Informatics, Statistics and Documentation), Silvia Zimmermann (Welcome from the Usability Professionals Organization), Andreas Holzinger (Welcome from the Organization Team) Room: Hörsaal Patho
<b>Plenary Opening Session A: Formal Methods in Usability Engineering (1)</b> Session Chair: A Min Tjoa (Vienna University of Technology, Austria) Room: Hörsaal Patho	
10:00 - 10:45	<b>User-Centered Methods are Insufficient for Safety Critical Systems</b> Harold Thimbleby (Swansea University, UK) Long Paper, pp. 1-20
<b>Session B: System Analysis &amp; Methodologies for Design and Development</b> Session Chair: Philippe Palanque (Université Paul Sabatier - Toulouse III, LIHS-IRIT, France) Room: Hörsaal Patho	
11:00 - 11:30	<b>Nurses' Working Practices: What can we learn for Designing Computerised Patient Record Systems?</b> Elke Reuss (Swiss Federal Institute of Technology ETH, Switzerland), Rochus Keller (Datonal AG Information Systems Research, Switzerland), Rahel Naef, Stefan Hunziker (Kantonsspital Luzern, Switzerland), Lukas Furler (Stadtspital Waid, Switzerland)

	Long Paper, pp. 55-68
11:30 - 12:00	<b>Organizational, Contextual and User-Centered Design in e-Health: Application in the area of Telecardiology</b> Eva Patrícia Gil-Rodríguez, Francesc Saigí Rubió (Universitat Oberta de Catalunya, Spain), Ignacio Martínez Ruiz, Álvaro Alesanco Iglesias, José García Moros (University of Zaragoza, Spain) Long Paper, pp. 69-82
12:00 - 12:15	<b>Usability of Radio-Frequency Devices in Surgery</b> Dirk Büchel, Thomas Baumann, Ulrich Matern (University Hospital Tuebingen, Germany) Short Paper, pp. 97-104
12:15 - 12:30	<b>BadIdeas for Usability and Design of Medicine &amp; Healthcare Sensors</b> Paula Alexandra Silva (Lancaster University, UK), Kristof Van Laerhoven (Technical University of Darmstadt, Germany) Short Paper, pp. 105-112
12:30 - 12:45	<b>Physicians' and Nurses' Documenting Practices and Implications for Electronic Patient Record Design</b> Elke Reuss, Moira Norrie (Swiss Federal Institute of Technology ETH, Switzerland), Rahel Naef (Kantonsspital Luzern, Switzerland), Rochus Keller (Datonal AG Information Systems Research, Switzerland) Short Paper, pp. 113-118

### Session C: Ambient Assisted Living & Life Long Learning

Session Chair: Ray Adams (Middlesex University London & Cambridge University, UK)

Room: Patho Mikroskopiersaal

10:45 - 11:15	<b>Design and Development of a Mobile Medical Application for the Management of Chronic Diseases: Methods of improved Data Input for Older People</b> Alexander Nischelwitzer, Klaus Pintoffl, Christina Loss (FH JOANNEUM, Austria), Andreas Holzinger (Medical University of Graz, Austria) Long Paper, pp. 119-132
11:15 - 11:30	<b>Technology in Old Age from a Psychological Point of View</b> Claudia Oppenauer, Barbara Preschl, Karin Kalteis, Ilse Kryspin-Exner (University of Vienna, Austria) Short Paper, pp. 133-142
11:30 - 11:45	<b>Movement Coordination in Applied Human-Human and Human-Robot Interaction</b> Anna Schubö, Cordula Vesper, Sonja Stork (Ludwig-Maximilians-Universität München, Germany), Mathey Wiesbeck (Technische Universität München, Germany) Short Paper, pp. 143-154
11:45 - 12:00	<b>An Orientation Service for Dependent People Based on an Open Service Architecture</b> A. Fernández-Montes, J. A. Álvarez, J. A. Ortega (Universidad de Sevilla, Spain), Natividad Martínez Madrid, Ralf Seepold (Universidad Carlos III de Madrid, Spain) Short Paper, pp. 155-164
12:00 - 12:15	<b>Competence Assessment for Spinal Anaesthesia</b> Dietrich Albert, Cord Hockemeyer (Karl-Franzens University of Graz, Austria), Zsuzsanna Kulcsar, George Shorten (Cork University Hospital, Ireland) Short Paper, pp. 165-170

**Session D: Visualization and Simulation in Medicine & Health Care**

Session Chair: Keith Andrews, Graz University of Technology (Austria)

Room: Besprechungsraum Kinderklinik

11:00 - 11:30	<b>Usability and Transferability of a Visualization Methodology for Medical Data</b> Margit Pohl, Markus Rester, and Sylvia Wiltner (Vienna University of Technology, Austria ) Long Paper, pp. 171-184
11:30 - 12:00	<b>Refining the Usability Engineering Toolbox: Lessons Learned from a User Study on a Visualization Tool</b> Homa Javahery, Ahmed Seffah (Concordia University, Canada) Long Paper, pp. 185-198
12:00 - 12:30	<b>Interactive Analysis and Visualization of Macromolecular Interfaces between Proteins</b> Marco Wiltgen, Andreas Holzinger (Medical University of Graz, Austria), Gernot P. Tilz (Centre d'Etude du Polymorphysme Humain, France) Long Paper, pp. 199-212
12:30 - 13:00	<b>Modeling Elastic Vessels with the LBGK Method in Three Dimensions</b> Daniel Leitner (Austrian Research Centers GmbH - ARC & Vienna University of Technology, Austria), Felix Breitenecker (Vienna University of Technology, Austria), Siegfried Wassertheurer (Austrian Research Centers GmbH - ARC, Austria), Michael Hessinger, Andreas Holzinger (Medical University of Graz, Austria) Long Paper, pp. 213-226

**Session E: Usability of Mobile Computing and Augmented Reality**

Session Chair: Luca Chittaro (University of Udine, Italy)

Room: Mehrzweckraum Kinderchirurgie, 1.Stock

11:00 - 11:30	<b>Usability of Mobile Computing Technologies to assist Cancer Patients</b> Rezwam Islam, (Marshallfield Clinic, USA), Sheikh I. Ahamed, Nilothpal Talukder, and Ian Obermiller (Marquette University, USA) Long Paper, pp. 227-240
11:30 - 12:00	<b>Usability of Mobile Computing in Emergency Response Systems - Lessons Learned and Future Directions</b> Gerhard Leitner, David Ahlström, and Martin Hitz (Klagenfurt University, Austria) Long Paper, pp. 241-254
12:00 - 12:30	<b>Some Usability Issues of Augmented and Mixed Reality for e-Health Applications in the Medical Domain</b> Reinhold Behringer, Johannes Christian, Steve Wilkinson (Leeds Metropolitan University, UK), Andreas Holzinger (Medical University Graz, Austria) Short Paper, pp. 255-266
12:30 - 12:45	<b>Designing Pervasive Brain-Computer Interfaces</b> Nithya Sambasivan, Melody Moore Jackson (Georgia Institute of Technology, USA) Short Paper, pp. 267-272

**Session F: Medical Expert Systems and Decision Support**

Session Chair: Anne-Sophie Nyssen (Université de Liege, Belgium), Berndt Urllesberger (Medical University of Graz, Austria)

Room: Hörsaal HNO

15:30 - 16:00	<b>The Impact of Structuring the Interface as a Decision Tree in a Treatment Decision Support Tool</b> Neil Carrigan (University of Bath, UK), Peter H Gardner, Mark Conner, John Maule (University of Leeds, UK) Long Paper, pp. 273-288
16:00 - 16:30	<b>Dynamic Simulation of Medical Diagnosis: Learning in the Medical</b>

	<p><b>Decision Making and Learning Environment MEDIC</b> Cleotilde Gonzalez (Carnegie Mellon University, USA), Colleen Vrbin (University of Pittsburgh Medical Center, USA) Long Paper, pp. 289-302</p>
16:30 - 16:45	<p><b>SmartTransplantation - Allogeneic Stem Cell Transplantation as a Model for a Medical Expert System</b> Gerrit Meixner (University of Kaiserslautern, Germany), Nancy Thiels (German Research Center for Artificial Intelligence [DFKI], Germany), Ulrike Klein (University of Heidelberg, Germany) Short Paper, pp. 303-314</p>
16:45 - 17:00	<p><b>Framing, Patient Characteristics, and Treatment Selection in Medical Decision-Making</b> Todd Eric Roswarski (Ivy Tech Community College, USA), Michael D. Murray (University of North Carolina, USA), Robert W. Proctor (Purdue University, USA) Short Paper, pp. 315-322</p>
17:00 - 17:15	<p><b>The How and Why of Incident Investigation: Implications for Health Information Technology</b> Marilyn Sue Bogner (Institute for the Study of Human Error, LLC Bethesda, USA) Short Paper, pp. 323-334</p>

**Lunch Break**

Room: Patho Aula

13:00 - 15:00

**Lunch Break and Industrial Exhibition**

**Session G: Research Methodologies, Cognitive Analysis & Clinical Applications**

Session Chair: Margit Pohl (Vienna University of Technology, Austria)

Room: Besprechungsraum Kinderklinik

14:30 - 15:00	<p><b>Combining Virtual Reality and functional Magnetic Resonance Imaging (fMRI): Problems and Solutions</b> Lydia Beck, Nan Mungard, Walter Sturm (University Hospital, RWTH Aachen University, Germany), Marc Wolter, Torsten Kuhlen (Virtual Reality Group, Rheinisch-Westfälische Technische Hochschule Aachen, RWTH Aachen, Germany) Long Paper, pp. 335-348</p>
15:00 - 15:15	<p><b>Cognitive Task Analysis for Prospective Usability Evaluation in Computer-Assisted Surgery</b> Armin Janß, Wolfgang Lauer, Klaus Radermacher (Helmholtz-Institute for Biomedical Engineering, RWTH Aachen University, Germany) Short Paper, pp. 349-356</p>
15:15 - 15:30	<p><b>Serious Games Can Support Psychotherapy of Children and Adolescents</b> Veronika Brezinka (Zürich University, Switzerland), Ludger Hovestadt (ETH Zürich, Switzerland) Short Paper, pp. 357-364</p>
15:30 - 15:45	<p><b>Development and Application of Facial Expression Training System</b> Kyoko Ito, Hiroyuki Kurose, Ai Takami, Shogo Nishida (Osaka University, Japan) Short Paper, pp. 365-372</p>
15:45 - 15:50	<p><b>Usability of an Evidence-Based Practice Website on a Pediatric Neuroscience Unit</b> Susan McGee, Nancy Daraiseh, &amp; Myra M. Huth (Cincinnati Children's Hospital, USA) Poster, pp. 373-374</p>
15:50 - 16:20	<p><b>Using Formal Specification Techniques for Advanced Counseling Systems in Health Care</b></p>

Dominikus Herzberg, Nicola Marsden, Peter Kübler, (Heilbronn University, Germany), Corinna Leonhardt, Hartmut Jung, Sabine Thomanek, Annette Becker (Philipps-University Marburg, Germany)  
 Long Paper pp. 41-54

**Session H: Ontologies, Semantics, Usability and Cognitive Load**

Session Chair: Michael R. Alvers (Transinsight, Dresden, Germany), Bo Hu (University of Southampton, UK)

Room: Patho Mikroskopiersaal

15:30 - 16:00	<p><b>Cognitive Load Research and Semantic Apprehension of Graphical Linguistics</b>          Michael Workman (Florida Institute of Technology, USA)          Long Paper, pp. 375-388</p>
16:00 - 16:30	<p><b>An Ontology Approach for Classification of Abnormal White Matter in Patients with Multiple Sclerosis</b>          Bruno Alfano, Giuseppe De Pietro, Amalia Esposito (National Research Council, Italy), Arturo Brunetti (University "Federico II", Italy)          Long Paper, pp. 389-402</p>
16:30 - 16:45	<p><b>The Evaluation of Semantic Tools to Support Physicians in the Extraction of Diagnosis Codes</b>          Regina Geierhofer, Andreas Holzinger (Medical University Graz, Austria)          Short Paper, pp. 403-408</p>
16:45 - 17:00	<p><b>Ontology Usability via a Visualization Tool for the Semantic Indexing of Medical Reports (DICOM SR)</b>          Sonia Mhiri (Computer Science Center of the Paris V University (CRIP5), France), Sylvie Despres (The Computer Science Laboratory of the Paris XIII University (LIPN), France)          Short Paper, pp. 409-414</p>
17:00 - 17:30	<p><b>Industrial Table Discussion</b></p> <ul style="list-style-type: none"> <li>• Michael Alvers (Transinsight, Germany): Knowledge is key for finding information!</li> <li>• Tassilo Pellegrini (Semantics Web School, Austria): Semantic Systems in Health Care: A Short Overview</li> <li>• Daniel Diekmann (ID Berlin, Germany): Practical approaches using semantic networks and terminology servers</li> <li>• Bo Hu (University of Southampton, UK): Will an Ontology make a difference?</li> </ul>

**Session J: Agile Methodologies, Analytical Methods and Remote Usability Testing**

Session Chair: Karl-Heinz Weidmann (University of Applied Sciences Vorarlberg, Austria)

Room: Hörsaal D

16:00 - 16:30	<p><b>Fostering Creativity Thinking in Agile Software Development</b>          Claudio León de la Barra (Pontificia Universidad Católica de Valparaíso, Chile), Broderick Crawford (Pontificia Universidad Católica de Valparaíso, Universidad Técnica Federico Santa María, Chile)          Long Paper, pp. 415-426</p>
16:30 - 17:00	<p><b>An Analytical Approach for Predicting and Identifying Use Error and Usability Problem</b>          Lars-Ola Bligård, Anna-Lisa Osvalder (Chalmers University of Technology, Sweden)          Long Paper, pp. 427-440</p>
17:00 - 17:15	<p><b>User's Expertise Differences When Interacting with Simple Medical User Interfaces</b>          Yuanhua Liu, Anna-Lisa Osvalder, MariAnne Karlsson (Chalmers University of Technology, Sweden)</p>

	Short Paper, pp. 441-446
17:15 - 17:30	<b>Usability-testing Healthcare Software with Nursing Informatics Students in Distance Education: a case study</b> Beth Meyer (McKesson Corporation, USA), Diane Skiba (University of Colorado at Denver & Health Sciences Center, USA) Short Paper, pp. 447-452
17:30 - 18:00	<b>The Effect of New Standards on the Global Movement toward Usable Medical Devices</b> Torsten Gruchmann, Anfried Borgert (Use-Lab GmbH, Germany) Long Paper, pp. 83-96

**Coffee Break**

Room: Patho Aula

17:00 - 18:00 **Afternoon Coffee + Industrial Exhibition**

**Plenary Closing Session K: Formal Methods in Usability Engineering (2)**

Session Chair: Marilyn Sue Bogner (Institute for the Study of Human Error, USA)

Room: Hörsaal Patho

18:00 - 18:45	<b>Improving Interactive Systems Usability using Formal Description Techniques: Application to Health Care</b> Philippe Palanque, Sandra Basnyat & David Navarre (Université Paul Sabatier - Toulouse III, LIIHS-IRIT, France) Long Paper pp. 21-40
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18:45 - 19:00	<b>Presentation of Best Paper Award</b> <b>Presentation of Best Presentation Award</b> <b>Announcement of USAB 2008</b> <b>Closing Address</b> Room: Hörsaal Patho
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20:00 **Reception at the Town Hall by the Mayor of Graz**



## Friday, 23<sup>rd</sup> November 2007

10:00	<b>Guided Walk through Graz General Hospital and University Clinics</b> Meeting point: Info-Point LKH-Universitätsklinikum Eingangszentrum Graz (green i Symbol)
14:00	<b>Historic City Walk</b> Meeting point: <a href="#">Weikhard-Uhr</a> , <a href="#">Hauptplatz 13</a> (City Center) Includes guided tour to the Armory Graz with english speaking Guide