



European Conference on Ambient Intelligence
November 18th to 21st 2009 | Salzburg, Austria

Roots for the Future
of Ambient Intelligence



We welcome you to Aml 2009, in the world-famous city of Salzburg in Austria, where history and culture meet modern science and research.

A conference like Aml is a team effort, and we would like to thank all contributors of the conference. Especially we would like to express our gratitude to the University of Salzburg for enabling this conference, as well as the ICT&S Center for its generous support. We extend our gratitude to the people who devoted time before and during the conference and to our cooperation partners and sponsors for making this conference possible.

Boris de Ruyter, Manfred Tscheligi
Conference Chairs



General Information

On-Site Registration / Information Desk

Tuesday, Nov. 17 th :	16:00 – 19:00, ICT&S Center
Wednesday, Nov. 18 th :	07:30 – 18:00, ICT&S Center
Thursday, Nov. 19 th :	07:30 – 19:00, Great University Hall
Friday, Nov. 20 th :	08:00 – 17:20, Great University Hall
Saturday, Nov. 21 st :	07:30 – 17:30, ICT&S Center

maps on p. 13 – 15

Wireless LAN

Wireless Internet is available at all conference locations.
SSID: PLUS
username: ami09
password: 09ami

Further Questions?

For any question, do not hesitate to address the local organisation team.



Aml 09 Conference
HCI Unit, ICT&S Center
University of Salzburg
Sigmund-Haffner-Gasse 18
5020 Salzburg, Austria

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Overview

Wednesday, November 18th 2009

- 09:00 – 17:00 [Workshop 1](#) Great University Hall, HS102
09:00 – 17:00 [Workshop 6](#) Faculty of Law, HS214
09:00 – 17:00 [Workshop 8](#) Faculty of Law, HS 201
09:00 – 17:00 [Workshop 9](#) Faculty of Law, HS 215
13:00 – 17:00 [Workshop 2](#) Great University Hall, HS105

Thursday, November 19th 2009

- 09:00 – 09:10 [Opening](#) Aula
09:10 – 10:10 [Opening Keynote](#) Aula
10:10 – 10:40 Break
10:40 – 12:00 [Landscapes](#) Aula
12:00 – 13:00 Lunch
[Posters & Demos](#)
13:00 – 14:00 [Sensing](#) Aula
[Ambient Assisted Living \(1\)](#) Old Library
14:00 – 14:15 Break
14:15 – 15:15 [Reasoning & Sensing](#) Aula
[Ambient Assisted Living \(2\)](#),
[Workshop Overview](#) Old Library
15:15 – 15:45 Break
[Posters & Demos](#)
15:45 – 16:45 [Visions](#) Aula
[Reasoning and Adaption](#) Old Library
16:45 – 17:00 Break
17:00 – 18:00 [Ambient Technoloy \(1\)](#) Aula
[Application & Studies \(1\)](#) Old Library
19:00 [Conference Dinner](#)

Friday, November 20th 2009

- 09:00 – 09:10 [Welcome](#) Aula
09:10 – 10:10 [Methods & Tools](#) Aula
10:10 – 10:40 Break
10:40 – 12:00 [Landscapes](#) Aula
12:00 – 13:00 Lunch
[Posters & Demos](#)
13:00 – 14:00 [Application & Studies \(2\)](#) Aula
14:00 – 14:15 Break
14:15 – 15:15 [Ambient Technology \(2\)](#) Aula
15:15 – 15:45 Break
15:45 – 16:50 [Closing Keynote](#) Aula
16:50 – 17:20 [Closing](#) Aula

Saturday, November 21st 2009

- 09:00 – 17:00 [Workshop 3](#) Great University Hall, HS107
09:00 – 17:00 [Workshop 5](#) Great University Hall, HS104

Workshops

WS1 Designing ambient interactions for older users

Arjan Geven, Özge Subasi – CURE Center for Usability Research and Engineering Austria, Manfred Tscheligi – CURE Center for Usability Research and Engineering Austria, ICT&S Center, University of Salzburg
John Soldatos – Athens Information Technology (AIT) Greece,
Mari Feli Gonzalez – INGEMA Spain

[Wed 18.11.](#) , 09:00 - 17:00, Great University Hall, Room 102

WS2 Aml-Blocks'09: 3rd European workshop on smart products: building blocks of ambient intelligence

Fernando Lyardet – SAP Research, Germany,
Erwin Aitenbichler, Max Mühlhäuser – Telecooperation Lab,
Technische Universität Darmstadt, Germany

[Wed 18.11.](#) , 13:00 - 17:00, Great University Hall, Room 105

WS6 Workshop on interaction techniques and metaphors in assistive smart environment

Michael Hellenschmidt – Fraunhofer Institute for Computer Graphics Research IGD, Darmstadt, Germany, Johannes Schäfer – User Interface Design GmbH, Ludwigsburg, Germany,
Juan-Carlos Naranjo – ITACA - Univ. Polit. Valencia, Spain,
Jacopo Aleotti – Universita' degli Studi di Parma, Italy

[Wed 18.11.](#) , 09:00 - 17:00, Faculty of Law, Room 214

WS8 Ethics in ambient intelligence research projects

Elena Urdaneta, Igone Etxeberria, Nerea Galdona, Iker Laskibar,
Miren Iturburu, Gerardo Zamora, Javier Yanguas –
Fundación Instituto Gerontológico Matia - INGEMA, Spain

[Wed 18.11.](#) , 09:00 - 17:00, Faculty of Law, Room 201

WS9 Graceful integration of acceptable assistive robotics and smart homes: challenges and opportunities for AAL

Atta Badii – University of Reading, UK,
Carmen Pastor – TECNALIA-Robotiker, Spain,
Daniel Thiemert – University of Reading, UK

[Wed 18.11.](#) , 09:00 - 17:00, Faculty of Law, Room 215

WS3 2nd workshop on semantic ambient media experience-SAME

Artur Lugmayr - Tampere University of Technology Finland
Thomas Risse – L3S Research Center, Germany,
Bjorn Stockleben – Rundfunk Berlin Brandenburg (RBB), Germany,
Juha Kaario, Kari Laurila – NOKIA, Finland

[Sat 21.11.](#) , 09:00 - 17:00, Great University Hall, Room 107

WS4 Intelligent objects in assisted living **CANCELLED**

Dorothy Monekosso – Centre for Network-Embedded System, CIT, Ireland, Paolo Remagnino – CISM, Kingston University, U.K.
Francisco Flórez-Revuelta – Polytechnic University College, University of Alicante, Spain

~~[Sat 21.11.](#) , 09:00 – 17:00, Great University Hall, Room 105~~

WS5 The ubiquitous persuader-mechanisms, applications and ethical dilemmas of ambient persuasion

Wolfgang Reitberger, Jaap Ham**, Astrid Weiss*, Andreas Spahn**, Alexander Meschtscherjakov*, Philip Nickel**, Manfred Tscheligi**

**HCI & Usability Unit, ICT&S Center, University of Salzburg*

***Human-Technology Interaction, Philosophy of technology, Department of IE&IS, Eindhoven University of Technology*

[Sat 21.11.](#) , 09:00 - 17:00, Great University Hall, Room 104

Thursday, November 19th 2009

9:00 – 9:10

Opening

Aula

Boris de Ruyter, Manfred Tscheligi
Conference Chairs

9:10 – 10:10

Opening Keynote

Prof. Emile Aarts, Philips

Aula

Ambient Intelligence 2.0: Towards Synergetic Prosperity

Ten years of research in Ambient Intelligence have revealed that the original ideas and assertions about the way the concept should develop no longer hold and should be substantially revised. Early scenarios in Ambient Intelligence envisioned a world in which individuals could maximally exploit personalized, context aware, wireless devices thus enabling them to become maximally productive, while living at an unprecedented pace. New insights have revealed that these brave new world scenarios are no longer desirable and that people are more in for a balanced approach in which technology should serve people instead of driving them to the max.

10:40 – 12:00

Landscapes

Aula

Introduction and Overview:
Ambient Intelligence Landscapes for
Realizing the Cities of the Future
Norbert Streitz, Landscapes Chair

LS1 Open Collaboration toward Social
Innovation using Ambient Intelligence
*Keiji Yamada – C&C Innovation research
laboratories, NEC Corporation, Japan*

LS2 Transdisciplinary Approach
for Constructing Ambient
Intelligence Environments
*Eisaku Maeda, Yasuhiro Minami,
Kohji Dohsaka, Akira Mori –
NTT Communication Science
Laboratories, Japan*

LS3 FORTH-ICS internal RTD
Programme 'Ambient Intelligence
and Smart Environments'
*Dimitris Grammenos, Xenophon
Zabulis, Antonis A. Argyros, Constantine
Stephanidis – Institute of Computer
Science, Foundation for Research
and Technology Hellas, Greece*

12:00 – 13:00

Posters & Demos, Lunch

more Information on p. 14 – 15

13:00 – 14:00

Sensing

Aula

FP Behavior Analysis Based on
Coordinates of Body Tags
*Mitja Lustrek, Bostjan Kaluza, Erik
Dovgan – Jozef Stefan Institute, Slovenia,
Bodgan Pogorelc –
Spica International d. o. o., Slovenia,
Matjaz Gams – Jozef Stefan
Institute, Slovenia*

FP MobiDiC: Context Adaptive
Digital Signage with Coupons
*Jörg Müller, Antonio Krüger –
University of Münster, Germany*

FP Slice&Dice: Recognizing
food preparation activities using
embedded accelerometers
*Cuong Pham, Patrick Olivier –
Newcastle University, UK*

Ambient Assisted Living (1)

Old Library

FP An Event-driven Approach to Activity
Recognition in Ambient Assisted Living
*Holger Storf, Thomas Kleinberger,
Germany, Martin Becker, Mario Schmitt,
Frank Bomarius, Stephan Prueckner –
Fraunhofer Institute Experimental
Software Engineering, Germany*

FP EMon: Embodied Monitorization
*Davide Carneiro, Paulo Novais, Portugal,
Ricardo Costa, Portugal, Pedro Gomes,
Portugal, Josè Neves –
University of Minho, Portugal*

FP Interoperation Modeling for
Intelligent Domotic Environments
*Dario Bonino, Fulvio Corno –
Politecnico di Torino, Italy*

14:15 – 15:15

Reasoning & Sensing

Aula

SP The Ambient Tag Cloud: A
New Concept for Topic-driven
Mobile Urban Exploration
*Matthias Baldauf, Peter
Fröhlich, Peter Reichl –
Telecommunications Research
Center Vienna (ftw.), Austria*

SP Constructing Topological Maps of
Displays with 3-D Positioning Information
*Donald J. Patterson –
University of California, Irvine, USA*

SP Activity Recognition for
Personal Time Management
*Zoltán Prekopcsák, Sugárka Soha,
Tamás Henk, Csaba Gáspár-Papanek –
Budapest University of Technology
and Economics, Hungary*

SP Getting Places: Collaborative
Predictions from Status
*Mohamad Monibi, Donald J. Patterson –
University of California, Irvine, USA*

14:15 – 14:45

Ambient Assisted Living (2) Old Library

SP Intertwining Implicit and Explicit
Awareness of Wellbeing to Support
Peace of Mind and Connectedness
*Pavan Dadlani – Philips Research, The
Netherlands, Panos Markopoulos –
Eindhoven University of Technology,
The Netherlands, Emile Aarts – Philips
Research, The Netherlands*

SP NICA: Natural Interaction
with a Caring Agent
*Berardina De Carolis, Irene Mazzotta,
Nicole Novielli –
Department of Informatics,
University of Bari, Italy*

14:45 – 15:15

Workshop Overview Old Library

Workshop Organizers will briefly summarize
the workshop goals and main results.

15:45 – 16:45

Visions

Aula

Speculations about the Future of Ambient Intelligence

Chair: Albrecht Schmidt



FP = Full Paper
SP = Short Paper
LS = Landscape

Reasoning and Adaption

Old Library

FP Increased robustness in context detection and reasoning using uncertainty measures - concept and application

*Martin Berchtold, Michael Beigl – Technische Universität Braunschweig
Distributed and Ubiquitous Systems Group, Germany*

FP Synthetic Training Data Generation for Activity Monitoring and Behavior Analysis

*Dorothy Monekosso – Cork Institute of Technology, Ireland,
Paolo Remagnino – Kingston University, UK*

FP Adaptive User Profiles in Pervasive Advertising Environments

Florian Alt, Moritz Balz, Stefanie Kristes, Alireza Sahami Shirazi, Julian Mennenöh, Albrecht Schmidt, Hendrik Schröder, Michael Goedicke – University of Duisburg-Essen, Germany

17:00 – 18:00

Ambient Technology (1)

Aula

FP Place Enrichment by Mining the Web

Ana O. Alves – University of Coimbra, Portugal, Francisco C. Pereira – University of Coimbra, Portugal, Assaf Biderman – MIT, USA

FP Sensor-based Human Activity Recognition in a Multi-user Scenario

Liang Wang – Nanjing University, China, Tao Gu – University of Southern Denmark, Xianping Tao, Jian Lu – Nanjing University, China

FP Amelie: a recombinant computing framework for ambient awareness

Georgios Metaxas, Panos Markopoulos, Emile Aarts – Technische Universiteit Eindhoven, The Netherlands

Applications & Studies (1)

Old Library

FP Ambient Rabbits, Likeability of Embodied Ambient Displays

Thomas Mirlacher, Roland Buchner, Florian Förster, Astrid Weiss, Manfred Tscheligi – University of Salzburg, Austria

FP Contextual Interaction Design: The case of Pause Buddy

David Keyson, Hannah Doff-Ottens – Delft University of Technology, The Netherlands

FP Creating a Development Support Bubble for Children

Janneke Verhaegh – Philips Research, The Netherlands, Willem Fontijn – Serious Toys, The Netherlands, Emile Aarts – Philips Research, The Netherlands, Laurens Boer – University of Technology Eindhoven, The Netherlands, Doortje van de Wouw – Serious Toys, Delft University of Technology, The Netherlands

19:00

Social Event

Meeting Point: Outside the Great University Hall

The social event of Aml 2009 will take place at „Hohensalzburg Fortress“. The fortress was built in 1077 and is the largest, fully-preserved fortress in central Europe. Archbishop Leonhard von Keutschach (1442 - 1519) enlarged the fortress and its exterior has remained substantially unaltered since then.

The fortress' interior was richly decorated: intricate gothic wood-carvings and ornamental paintings decorate the Golden Hall and the Golden Chamber. During its long history the Hohensalzburg Fortress has always remained unconquered by enemy troops.

Today the fortress is open to the public all year round. Since 1892 the fortress can easily be reached by funicular railway departing from the Festungsgasse.

We will leave the **Great University Hall at 19:00**, walk towards the railway station (duration: 15 min), and then use the railway (5 min) to reach the fortress.

Remembering historic times we will enjoy a medieval dinner and a gorgeous view over the city. Medieval games like crosbow shooting will make this evening unforgettable.



Friday, November 20th 2009

9:00 – 9:10

Welcome

Aula

9:10 – 10:10

Methods and Tools

Aula

FP A Framework to Develop Persuasive Smart Environments

Pedro Lobo, Teresa Romão –

*Faculty of Sciences and Technology/**New University of Lisbon, Portugal*A. Eduardo Dias – *University of Évora,**Portugal, José Danado – YDreams, Portugal***FP** Measuring the response bias induced by an Experience and

Application Research Center

Boris de Ruyter – *Philips Research Europe,**The Netherlands, Rick van Geel – University**of Tilburg, The Netherlands, Panos**Markopoulos – Eindhoven University,**The Netherlands, Emiel Krahmer –**University of Tilburg, The Netherlands***FP** The Assisted User-Centred Generation and Evaluation of Pervasive Interfaces

Karin Leichtenstern, Elisabeth André –

University of Augsburg, Germany

10:40 – 12:00

Landscapes

Aula

Chair: Norbert Streitz

LS4 Ambient Intelligence in Singapore and the iN2015 MasterplanKin Choong Yow – *School of**Computer Engineering, Nanyang**Technological University, Singapore***LS5** The Interactive & Digital

Media Institute in Singapore

Ryohei Nakatsu, Timothy March, Hari

Krishna Garg, Wai-Choong Wong –

*Interactive & Digital Media Institute,**National University of Singapore***LS6** eHealth - Enhancing Mobility with Aging

Martina Ziefle, Carsten Röcker, Lars Klack,

Kai Kasugai, Eva-Maria Jakobs, Thomas

Schmitz-Rode, Peter Russell, Jan Borchers –

*RWTH Aachen University, Germany***LS7** Innovative Retail Laboratory

Lübmira Spassova, Johannes Schöning,

Gerrit Kahl, Antonio Krüger

DFKI GmbH, Germany

12:00 – 13:00

Posters & Demos, Lunch

more Information on p. 14 – 15

13:00 – 14:00

Applications & Studies (2)

Aula

FP I Bet You Look Good on the Wall: Making the Invisible Computer Visible

Jo Vermeulen, Jonathan Slenders,

Kris Luyten, Karin Coninx –

*Hasselt University, Belgium***FP** AmlQuin - an Ambient Mannequin for the Shopping Environment

Alexander Meschtscherjakov, Wolfgang

Reitberger, Thomas Mirlacher,

Hermann Huber, Manfred Tscheligi –

*University of Salzburg, Austria***FP** Designing an Awareness Display for Home Care Professionals

Martijn Vastenburg, Robbert

Vroegindeweij – *Delft University**of Technology, The Netherlands*

14:15 – 15:15

Ambient Technology (2)

Aula

SP Bug-Free Sensors: The Automatic Verification of Context-Aware TinyOS ApplicationsDoina Bucur, Marta Kwiatkowska – *Oxford University, UK***SP** Semi-automatic Story Creation System in Ubiquitous Sensor EnvironmentShohei Yoshioka – *Graduate School of Information Science, Nagoya**University, Japan, Yasushi Hirano – Information Technology Center,**Nagoya University, Japan, Shoji Kajita, Kenji Mase – Information**and Communication Technology Services, Nagoya University, Japan,**Takuya Maekawa – NTT Communication Science Laboratories, Japan***SP** SAGE: A Logical Agent-Based Environment Monitoring and Control System

Krysia Broda, Keith Clark, Rob Miller, Alessandra

Russo – *Imperial College London, UK***SP** Using video with active markers

Jussi Mikkonen, Jung-Joo Lee, Ilpo Koskinen –

University of Arts and Design, Helsinki, Finland

15:45 – 16:50

Closing Keynote

Prof. Matt Jones, Swansea University

Aula

From Bystander to Performer – Ambient Intelligence in a Digitally Extravagant Era

Ubicomp and Ambient Intelligence visions, at least until recently, appear to dis-empower people. We - the users - are bystanders, who watch in awe at the workings of a subtle, hidden power; a benign divinity that might intervene to improve our lives. Meanwhile, on the streets, people speak loudly into mobile phones, gesturing as they stride; and young people swagger downtown in groups, chatting to their mates while simultaneously listening to iPods and updating their Twitter feed. In this talk, I will suggest that a promising direction for new research is one that recognises the delight and engagement people desire as they perform with and through pervasive digital media. I will draw on a range of examples from those designed for cosmopolitan world cities to those for isolated, rural, 'developing' world villages.

16:50 – 17:20

Closing

Aula

Boris de Ruyter, Manfred Tscheligi

Conference Chairs

Posters

P1 Research on Social Engagement with a Rabbitic User Interface

Sabine Payr – Austrian Research Institute for Artificial Intelligence OFAI, Austria, Peter Wallis, Stuart Cunningham, Mark Hawley – University of Sheffield, UK

P2 Improving the documentation in mass casualty incidents by combining electronic and paper based approaches

Simon Nestler, Manuel Huber, Gudrun Klinker – Technische Universität München, Germany

P3 Wristband Type Sensor Device for Recognizing Activities that Involve Object Use

Takuya Maekawa, Yutaka Yanagisawa, Yasue Kishino, Koji Kamei, Yasushi Sakurai, Takeshi Okadome
NTT Communication Science Laboratories, Japan

P4 Concepts of Interaction with Projected Displays Using Gestures

Lübomira Spassova – DFKI GmbH, Germany, Fei Guo – Saarland University, Germany

P5 Mobile augmented reality to identify mountains

Stephan Karpiscek, Claudio Marforio, Mike Godenzi – ETH Zurich, Switzerland, Stephan Heuel – Ernst Basler + Partner, Switzerland, Florian Michahelles – ETH Zurich, Switzerland

P6 A Concept for Support of Library Search by means of Ambient Displays

Roland Buchner, Manfred Tscheligi – University of Salzburg, Austria

P7 Wellness User Modeling: Ambient-Intelligent Continuous Analytics and Social Nudging

David Kil – SK Telecom Americas, USA

P8 Home electronic integrated services

Sorin PUSCOCI, Radu DRAGOMIR – National Research Communications Institute INSCC, Romania

P9 The Innovation of Design and The Project of new Tools for Employment Activities

Niccolò Casiddu, Junior Venturi – University of Genova, Italy

P10 HERMES Assistive Applications for Older Users: A User Centered Process

Özge Subasi, Arjan Geven, Manfred Tscheligi – CURE - Center for Usability Research and Engineering, Austria

P11 Seniors Re-engineering Context-aware Applications: The CaSenSa Reserach

Marjan Geerts, Laurence Claeys, Johan Criel, Pascal Zontrop, Marc Godon, Koen De Voegt, Trappeniers Lieven – Alcatel-Lucent Bell Labs, Belgium

P12 Securing the Universal Control Hub architecture

Federico Heras, Rafael Gimenez, Arturo Ortega – Barcelona Digital Centre Tecnològic, Spain
Xavier Trabado – e-laCaixa, Spain

P13 User Interfaces for Intelligent Household

Miroslav Macik, Vaclav Slovacek, Martin Klima – Czech Technical University in Prague, Czech Republic

P14 The Challenging Development of Contents in Ambient Intelligence Reality

Urška Starc Peceny, PhD – Ambient5, Austria; Natvia Studio FZ LLC, Dubai, United Arab Emirates

Demos

D1 Leveraging Object Tracking Infrastructures to Manage Product Carbon Footprints

Ali Dada – University of St. Gallen and SAP Research, Switzerland
Matthias Konkel – Hochschule Furtwangen University and SAP Research, Germany
Anton Rau, Thorsten Staake – ETH Zurich, Switzerland

D2 Ambient Navigation: Finding you a way with Ambient Displays and Mobile Devices

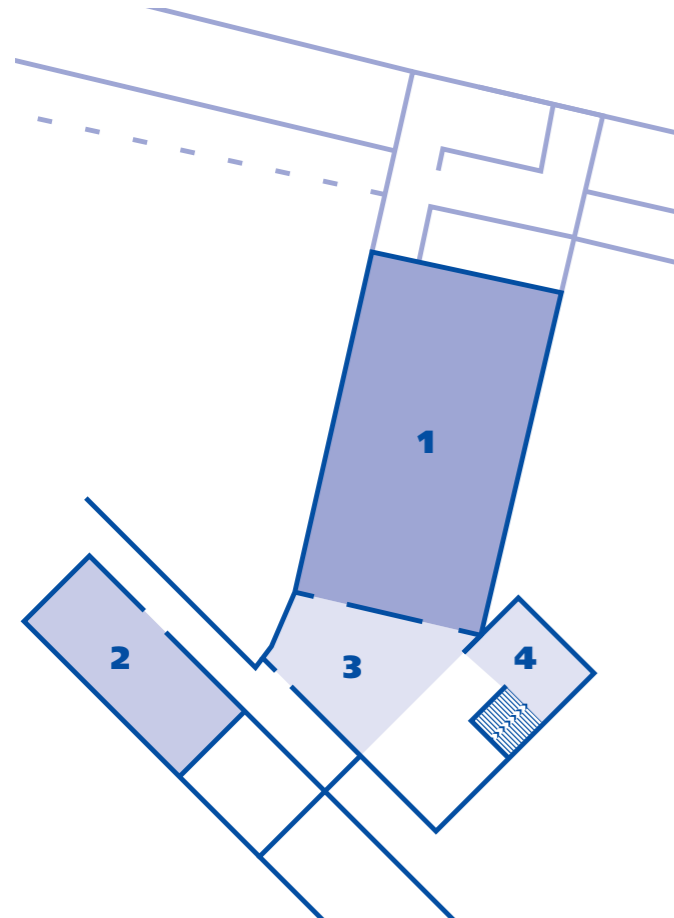
Roland Buchner, Thomas Mirlacher, Manfred Tscheligi – University of Salzburg, Austria

D3 AmiQuin - an Ambient Mannequin for the Shopping Environment

Thomas Mirlacher, Wolfgang Reitberger, Michael Lankes, Alexander Meschtscherjakov, Hermann Huber – University of Salzburg, Austria

Great University Hall, Ground Floor





- 1 Aula**
 Thursday, Nov. 19th: 07:30 – 19:00
 Opening
 Opening Keynote
 Landscapes
 Sensing
 Reasoning & Sensing
 Visions
 Ambient Technology (1)

- Friday, Nov. 20th: 08:00 – 17:20
 Methods and Tools
 Landscapes
 Applications & Studies (2)
 Ambient Technology (2)
 Closing Keynote
 Closing

- 2 Old Library**
 Thursday, Nov. 19th: 07:30 – 19:00
 Ambient Assisted Living (1)
 Ambient Assisted Living (2)
 Workshop Overview
 Reasoning and Adaption
 Applications & Studies (1)

3 Coffee Breaks, Lunches

4 Posters

- 1 Conference Headquarters**
 ICT&S Center
 ▶ Wiener-Philharmoniker-Gasse
- 2 Conference Venue**
 Great University Hall
 ▶ Max-Reinhardt-Platz / Furtwängler Park
- 3 Workshops 6, 8, 9**
 Faculty of Law
 ▶ Sigmund-Haffner-Gasse





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