EuroHaptics 2012
12-15 June 2012
Tampere, Finland
Welcome to Tampere!

On behalf of the City of Tampere, it is my great pleasure to welcome the participants of the EuroHaptics conference to our city. The themes of the conference, which relate to the development of touch pad interfaces and the use of touch sensing solutions in the IT sector, are indeed very topical, and they are connected to a great many areas of life from medicine and rehabilitation to applied arts and consumer electronics.

The City of Tampere has been one of the leading industrial cities in Finland and in the Nordic countries since the 19th century. Tampere was originally founded around the textile and metal industries, and has experienced many changes in industrial structure. These have required fundamental changes to the city’s own structures as well.

In the 1990s, heavy industry moved away from the red-brick production facilities in the city centre. This was a major change that worked for our favour, as Nokia Oyj’s success provided a basis for the establishment of a strong ICT cluster in Tampere.

The 21st century will pose new challenges. Mobile products and services, games, intelligent traffic, and intelligent machines are growing sectors that currently employ over 6000 people in Tampere. World-class research in various fields is done here, for example in signal processing and optoelectronics.

The City of Tampere has promoted the development of new innovations with comprehensive business development programmes, themes that in the 21st century include the information society, health technology, and creative fields. The most recent innovation programme is Open Tampere, which was launched earlier this year to promote operating models for the generation of open innovations across sector borders.

The city’s strengths include the availability of experts in the ICT sector, partner network, top-level research, and research cooperation of companies and universities. In addition, Tampere has several times been chosen as Finland’s most attractive city to live and study in. Tampere offers an excellent operating environment for researchers and companies as well.

I wish the participants of the EuroHaptics conference a rewarding and enjoyable stay in our summery city.

Timo P. Nieminen
Mayor of Tampere
Welcome to EuroHaptics 2012!

EuroHaptics is a major international conference and the primary European meeting for researchers in the field of human haptic sensing and touch enabled computer applications. This diverse field covers research in areas including, but not limited to, haptic perception, haptic hardware development, through to end applications and users, such as surgical simulation, rehabilitation robotics, and haptic feedback for design and applied arts applications.

EuroHaptics 2012 takes place in the city of Tampere on June 12-15, 2012. After the successful event in Amsterdam in 2010, the aims were set high. Weather permitting, the timing of the conference showcases the nature of Finland at its best. It is a great time to visit the northern end of Europe.

Some of the main facts on EuroHaptics 2012 are the following: 155 submissions, 34 of which were accepted as oral talks, 54 as posters, and 11 as demos. Typical to the nature of haptics, many of the oral and poster presentations also provided a demo. In total, there were more than 30 demos accepted for presentation in the demo area, adjacent to the exhibit with more than 10 industrial sponsors. The number of attendees in the conference is still growing when this conference program booklet was prepared, but already there is more than 200 attendees registered.

As usual, organizing an international conference is a major effort and involves an extensive amount of work to make it happen. We would like to acknowledge the work of the members of the organizing committee, program committee, student volunteers and local support staff. Without their efforts this conference would not have happened at all.

We welcome all the attendees who are making this international event a success!

Rooke Raisamo
University of Tampere
General Chair

Kaisa Väänänen-Vainio-Mattila
Tampere University of Technology
General Co-Chair

Jyri Huopaniemi
Nokia Research Center
General Co-Chair
TUESDAY 12.6: Workshops

Note! All workshops are located at the University of Tampere, in the Pinni B building.

**11:00-14:00** Registration at University of Tampere, Pinni B building

**12:00-17:00**
TECHTILE toolkit: Haptic design environment for sharing haptic experience
Masashi Nakatani, Yasuaki Kakehi, Kouta Minamizawa, Soichiro Mihara+ YCAM InterLab

**12:00-17:00**
Enhancing Traveler's Awareness in Smart Traffic
Hannu Korhonen and Ahmed Farooq
University of Tampere

**14:00-17:00**
Multi-Finger Haptic Interaction
Ignacio Galiana and Manuel Ferre
Centre for Automation and Robotics UPM-CSIC

**16:00-18:00** Registration at the main conference venue, Hotel Rosendahl

WEDNESDAY 13.6.

The venue for the main conference is Hotel Rosendahl.

**08:00**
Registration opens

**09:00-09:15** Conference opening

**09:15-09:45** Poster/ demo teaser 1
P001: Line length judgments are better when based on cutaneous rather than kinesthetic inputs, George Van Doorn, Barry Richardson, Mark Symmons & Jacquie Howell
D003: Design of Cylindrical Whole-hand Haptic Interface using Electrocutaneous Display, Hiroyuki Kajimoto

P005: The precision of haptic rod length perception is reduced by vision, Nienke B. Debats, Idsart Kingma, Peter J. Beek & Jeroen B.J. Smeets
09:45-11:00 Poster/demo session 1 & Coffee

[Posters and demos introduced in teaser sessions 1 and 2 are now on display.]

11:00-12:00 Invited keynote

Tactile feedback in mobile devices
Piers Andrew (Nokia Research Center)

The near ubiquity of touchscreen inputs for mobile devices means that haptic feedback technologies are increasingly important. Various means of delivering such tactile feedback in mobile and portable devices will be discussed, and a recently developed Electrostatic Tactile (ET) feedback system providing programmable tactile feedback to mobile displays will be described. The ET system is a robust, thin, and optically transparent structure integrated on top of the display, and exploits interactions, Ian Sinclair, J im Carter, Sebastian Kassner, Jan van Erp, Gerhard Weber, Linda Elliott & Ian Andrew.
the well-known phenomenon of electrovibration to create a controllable frictional force between a user’s fingertip and the surface. Localized tactile information is delivered to the user’s skin directly and the magnitude and pattern of the frictional force experienced is correlated with displayed images and the touch location. A variety of different materials have been demonstrated, including those compatible with flexible devices, such as the Nokia Kinetic Device.

12:00-13:00 LUNCH

13:00-14:30 Session 1: Collaborative Haptics

Session chair: Jan Van Erp

13:00-13:15 A peer-to-peer Trilateral Passivity Control for delayed collaborative Teleoperation
Michael Panzirsch, Jordi Artigas-Esclusa, Andreas Tobergte, Paul Kotyczka, Carsten Preusche, Alin Albu-Schaeffer & Gerd Hirzinger

13:15-13:30 Haptic communication tools for collaborative deformation of molecules
Jean Simard & Mehdi Ammi

13:30-13:45 Perceptually Robust Traffic Control in Distributed Haptic Virtual Environments
Clemens Schuwerk, Rahul Chaudhari & Eckehard Steinbach

13:45-14:00 Error-resilient Perceptual Haptic Data Communication based on Probabilistic Receiver State Estimation
Julius Kammerl, Fernanda Brandi, Florian Schweiger & Eckehard Steinbach

14:00-14:15 Spectral Subtraction of Robot Motion Noise for Improved Vibrotactile Event Detection
William McMahan & Katherine Kuchenbecker

14:15-14:30 Contact Force and Finger Angles Estimation for Touch Panel by Detecting Transmitted Light on Fingernail
Yoichi Watanabe, Yasutoshi Makino & Katsunari Sato

14:30-15:00 Poster/ demo teaser 2

P034: Vertical Illusory Self-motion Through Haptic Stimulation of the Feet, Rolf Nordahl & Stefania Serafin

P036: FootGlove: a haptic device supporting the customer in the choice of the best fitting shoes, Luca Greci

P037: Investigating the effect of area of stimulation on cutaneous and proprioceptive weight perception, Wouter Bergmann Tiest, Connie Lyklema & Astrid Kappers

P038: Visualization of Tactile Material Relationships Using Sound Symbolic Words, Junji Watanabe, Tomohiko Hayakawa, Shigeru Matsui, Arisa Kano, Yuichiro Shimizu & Maki Sakamoto
D044: Cursor navigation using haptics for motion-impaired computer users, Christopher Asque, Andy Day & Stephen Laycock

P045: Comparison of Extensive vs. Confirmation Haptic Interfaces with Two Levels of Disruptive Tasks, Toni Pakkanen, Roope Raisamo & Veikko Surakka

P049: Acquisition of elastically deformable object model based on measurement, Koichi Hirota & Kazuyoshi Tagawa

P053: Is the curvature in hand movements to haptic targets in the mid sagittal plane caused by a misjudgment in direction? Marieke van der Graaff, Eli Brenner & Jeroen B.J. Smeets

P056: Exploring the Impact of Visual-Haptic Registration Accuracy in Augmented Reality, Chang-Gyu Lee, Ian Oakley & Jeha Ryu

P058: Dissociation of vibrotactile frequency discrimination performances for supra-threshold and near-threshold vibrations, Scinob Kuroki, Junji Watanabe & Shin'ya Nishida

P061: Tactile Apparent Motion between Both Hands Based on Frequency Modulation, Soo-Chul Lim, Dong-Soo Kwon & Joonah Park

P062: Feasibility Study of Levels-of-Detail in Point-based haptic rendering, Shahram Payandeh & Wen Shi


P068: Saliency-Driven Tactile Effect Authoring for Real-Time Visuotactile Feedback, Myongchan Kim, Sungkil Lee & Seungmoon Choi

P151: Haptic stimulus for the discrimination between intrinsic properties of dynamic systems, Florimond Gueniat, Yoren Gaffary, Luc Pastur & Mehdi Ammi

D134: NonVisNavi: Non-Visual Mobile Navigation Application for Pedestrians, Tomi Nukarinen, Roope Raisamo, Johannes Pystynen & Erno Mäkinen


D141: Compressibility and Crushability Reproduction Through an Amorphous Haptic Interface, Amir Berrezag, Yon Visell & Vincent Hayward

D142: RehApp – A Wearable Haptic System for Rehabilitation and Sports Training, Kalle Myllymaa, Roope Raisamo, Jani Lylykangas, Jari Heikkinen & Veikko Surakka

D164: Multi-contact Vacuum-driven Tactile Display for Representing Forces Acting on Grasped Objects, Lope Ben Porquis, Masashi Kono, Satoshi Tadokoro

15:00-16:00 Poster/demo session 2 & Coffee
[Posters and demos introduced in teaser sessions 1 and 2 are now on display.]

16:00-17:30 Session 2: Devices & Technology
Session chair: Ki-Uk Kyung

16:00-16:15 Transparency Improvement in Haptic Devices with a Torque Compensator Using Motor Current, Ozgur Baser, Erhan Ilhan Konukseven & Hakan Gurocak

16:15-16:30 Multi-contact Vacuum-driven Tactile Display for Representing Forces Acting on Grasped Objects, Lope Ben Porquis, Masashi Kono, Satoshi Tadokoro

16:30-16:45 Machine Learning for Haptic Displays: Classification of Human-Grounded Forces, Peter Thybaut, Bjoern Albers & Martin C. Boccanfuso
16:15-16:30  Novel Thin Electromagnetic System for creating Pushbutton Feedback in Automotive Applications
            Ingo Zoller, Peter Lotz & Thorsten Kern

16:30-16:45  Dynamics Modeling of an Encountered Haptic Interface for Ball Catching and Impact Tasks Simulation
            Massimiliano Solazzi, Dario Pellegrinetti, Paolo Tripicchio, Antonio Frisoli & Massimo Bergamasco

16:45-17:00  Development and Applications of High-Density Tactile Sensing Glove
            Takashi SAGISAKA, Yoshiyuki Ohmura, Yasuo Kuniyoshi, Akihiko Nagakubo & Kazuyuki Ozaki

17:00-17:15  Development of an Impact-Resonant Actuator for Mobile Devices
            Dongbum Pyo, Tae-Heon Yang, Semin Ryu, Byung-Kil Han, J un Seok Park & Dong-Soo Kwon

17:15-17:30  Haptic Rendering of Cultural Heritage Objects at Different Scales
            Sreeni Kamalalayam Gopalan, Priyadarshini Kumari, Praseedha Krishnan & Subhasis Chaudhuri

18:30-       City reception (at the Museum Centre Vapriikki)
21:00-22:00  Media show at the New Factory

THURSDAY 14.6.

08:00  Registration opens

09:00-09:30 Poster/ demo teaser 3

P070: Contact Force During Active Roughness Perception, Yoshihiro Tanaka, Wouter Bergmann Tiest, Astrid Kappers & Akihito Sano

D078: A Novel Miniature KinaesTactile Actuator based on Magnetorheological Fluids, Tae-Heon Yang, Semin Ryu, Sang-Youn Kim, J eong-Hoi Koo, Ki-Uk Kyung, Jinung An, Yon-Kyu Park & Dong-Soo Kwon

P081: Immersive Direct Touch Haptic Display, Maisarah Binti Ridzuan, Kenjiro Takemura & Yasutoshi Makino

P082: Comparing Direct and Remote Tactile Feedback on Interactive Surfaces, Hendrik Richter, Sebastian Loehmann, Florian Weinhart & Andreas Butz

D086: Guiding tourists through haptic interaction: vibration feedback in the Lund Time Machine, Delphine Szymczak, Charlotte Magnusson & Kirsten Rassmus-Gröhn

D089: New Control Architecture based on PXI for a 3-Finger Haptic Device Applied to Virtual Manipulation, Ignacio Galiana, Jose Breñosa, Jorge Barrio & Ferre Manuel

P090: How finger movement speed affects Braille pattern recognition, Kensuke Oshima & Shigeru Ichihara

D091: Novel Interactive Techniques for Bimanual Manipulation of 3D Objects with Two 3DoF Haptic Interfaces,
Anthony Talvas, Maud Marchal, Clément Nicolas, Gabriel Cirio, Mathieu Emily & Anatole Lécuyer

P093: Interaction Power Flow Based Control of a 1-DOF Hybrid Haptic Interface, Carlos Rossa, José Lozada & Alain Micaelli

P099: Rediscovering the Haptic Sense Through Crossroads of Art and Design Research, Sandra Coelho

P101: Evaluating a Multipoint Tactile Renderer for Virtual Textured Surfaces, Matthew Philpott & Ian Summers

P108: Finger-Mounted Skin Vibration Sensor for Active Touch, Yoshihiro Tanaka, Yoshihiro Horita & Akihito Sano

P116: A Novel Stimulation Method Based on a Neuromorphic Mechanoreceptor Model for Haptic Illusion, Kiuk Gwak, Jun-Cheol Park & Dae-Shik Kim

P124: Rendering Stiffness with a Prototype Haptic Glove Actuated by an Integrated Piezoelectric Motor, Pontus Olsson, Stefan Johansson, Fredrik Nysjö & Ingrid Carlbom

09:30-10:30 Poster/demo session 3 & Coffee
Exhibit hall
[Posters and demos introduced in teaser sessions 3 and 4 are now on display.]

10:30-11:00 EuroHaptics Ph.D. award and the winner’s presentation
Plenary hall

11:00-12:00 Invited keynote
Plenary hall

Social-haptic communication
Riitta Lahtinen (Finnish Deafblind Association) and Russ Palmer (SRAT(M), Music Therapist)

Haptices and haptemes are based on the PhD research of how dual-sensory impaired (deafblind) people can share environmental information interactively through touch. The presentation will include a brief description of longitudinal and developmental research on how to adapt visual and auditive information onto the body. The research is based on haptics and has been recognised as social-haptic communication (interaction between two or more people). This approach differs from haptic communication (object based contact).

The research describes haptices, touch-related messages, in different situations enhancing sensory information and functioning as an independent language. Haptices includes confirmation system, social quick messages, face expressions
and behaviour, body drawing, orientation and directional information, guiding and sharing art and hobby experiences by touch.

Haptices consist of haptemes; movements, change of directions, pressure, speed, frequency, size, length, duration, pause, change of rhythm, shape, macro and micro movements. This research classifies how the body can be identified into different areas such as body orientation, varied body postures and position levels, social actions and which side of the body is used.

When the hearing and sight deteriorates communication consists of multi-systematic and adaptive methods. A person's expressive language, spoken or sign language usually remains unchanged, but the methods of receiving information could change many times during a person's lifetime. Social-haptic communication system has expanded to other client groups such as visually impaired and profound learning disability around in Europe, Australia and Canada.

12:00-13:00 LUNCH

13:00-14:30 Session 3: Tactile Display & Tactile Sensing

Session chair: Hong Tan

13:00-13:15 Tradeoffs In The Application of Time-Reversed Acoustics to Tactile Stimulation
Charles Hudin, José Lozada, Michael Wiertlewski & Vincent Hayward

Buket Baylan, Ugur Aridogan & Cagatay Basdogan

13:30-13:45 Presentation of Sudden Temperature Change using Spatially Divided Warm and Cool Stimuli
Katsunari Sato & Takashi Maeno

13:45-14:00 A Novel Approach for Pseudo-Haptic Textures Based on Curvature Information
Ferran Argelaguet, David Antonio Gómez Jáuregui, Maud Marchal & Anatole Lécuyer

14:00-14:15 Indicating Wind Direction Using a Fan-Based Wind Display
Takuya Nakano, Shota Saji & Yasuyuki Yanagida

14:15-14:30 Electrostatic Modulated Friction as Tactile Feedback: Intensity Perception
Dinesh Wijekoon, Marta Cecchinato, Eve Hoggan & Jukka Linjama
14:30-15:00 Poster/ demo teaser 4

D127: Augmentation of Material Property by Modulating Vibration Resulting from Tapping, Taku Hachisu, Michi Sato & Shogo Fukushima
P129: Shaking a box to estimate the property of content, Yasuhiro Tanaka & Koichi Hirota
D138: Vibrotactile Stimulation Can Affect Auditory Loudness: A Pilot Study, Ryuta Okazaki, Hiroyuki Kajimoto & Vincent Hayward
P139: Utilizing Haptic Feedback in Drill Rigs, Tuuli Keskinen, Markku Turunen, Roope Raisamo, Grigori Evreinov & Eemeli Haverinen
P146: Evidence for 'Visual Enhancement of Touch' mediated by visual displays and its relationship with body ownership, Valeria Bellan, Carlo Reverberi & Alberto Gallace

D147: Orientation inquiry: a new haptic interaction technique for non-visual pedestrian navigation, Roope Raisamo, Tomi Nukarinen, Johannes Pystynen, Erno Mäkinen & Johan Kildal
P150: Haptic Force Perception in Bimanual Manipulation, Jalal Awed, Imad Elhajj & Nadiya Slobodenyuk
D153: Development of Intuitive Tactile Navigational Patterns, Christos Giachritsis, Gary Randall & Samuel Roselier
P154: Stability of Model-Mediated Teleoperation: Discussion and Experiments, Bert Willaert, Hendrik Van Brussel & Günter Niemeyer
P158: Haptics in Between-Person Object Transfer, Satoshi Endo, Geoff Pegman, Mark Burgin, Tarek Toumi & Alan M. Wing

15:00-16:00 Poster/ demo session 4 & Coffee [The set of posters and demos on display is the same as in Poster/demo session 3, see above.]

16:00-17:30 Session 4: Perception & Psychophysics
Session chair: Christos Giachritsis

16:00-16:15 What feels parallel strongly depends on hand orientation
Astrid Kappers & Bart Liefers

16:15-16:30 On the Perceptual Artifacts Introduced by Packet Losses on the Forward Channel of Haptic Telemanipulation Sessions
Fernanda Brandi, Burak Cizmeci & Eckehard Steinbach

16:30-16:45 Masking of Key-Click Feedback Signals on Two Fingers using Simple Clicks
Jin Ryong Kim, Xiaowei Dai, Xiang Cao, Carl Picciotto, Desney Tan & Hong Tan

16:45-17:00 Modifying an Identified Angle of Edged Shapes Using Pseudo-Haptic Effects
Yuki Ban, Takashi Kajinami, Takuji Narumi, Tomohiro Tanikawa & Michitaka Hirose

17:00-17:15 The Effect of the Stiffness Gradient on the Just Noticeable Difference Between Surface Regions
Umut Kocak, Karljohan Lundin Palmerius, Camilla Forsell & Matthew Cooper

17:15-17:30 Two hands perceive better than one
Myrthe A. Plaisier & Marc O. Ernst

18:00- Late night sun cruise and conference dinner

FRIDAY 15.6.

08:00 Registration opens

08:30- 09:30 EuroHaptics Society business meeting
Plenary hall

09:00- 10:30 Poster/ demo session 5 & Media
Exhibit hall

10:30- 12:00 Session 5:
Neuroscience and Medical & Rehabilitation Applications
Session chair: Astrid Kappers

10:30-10:45 A Closed-loop Neurorobotic System for Investigating Braille-reading Finger Kinematics
Jeremie Pinoteau, Luca Leonardo Bologna, Jesús Alberto Garrido & Angelo Arleo

10:45-11:00 Combining Brain- Computer and Haptic Interfaces: Detecting Mental Workload to Adapt Force- Feedback
Laurent George, Maud Marchal, Loeiz GLONDU & Anatole Lécuyer

11:00-11:15 Cognitive load can explain differences in active and passive touch
George Van Doorn, Vladimir Dubaj, Dianne Wuillemin, Barry Richardson & Mark Symmons

11:15-11:30 Discrimination of Springs with Vision, Proprioception, and Artificial Skin Stretch Cues
Netta Gurari, Jason Wheeler, Amy Shelton & Allison Okamura

11:30-11:45 Tactile sensibility through tactile display: effect of the array density and clinical use
Massimiliano Valente, Ferdinando Cannella, Lorenzo Scalise, Mariacarla Memeo, Paolo Liberini & Darwin Caldwell

11
Tactile Emotions: A Vibrotactile Tactile Gamepad for Transmitting Emotional Messages to Children with Autism  
Gwénaël Changeon, Delphine Graeff, Margarita Anastassova & José Lozada

12:00-13:00 LUNCH

13:00-14:00 Invited keynote

The Design of Everyday Computational Things: Why Industrial Design is the New Interaction Design

Roel Vertegaal (Queen's University)

In his seminal book The Psychology of Everyday Things, Donald Norman outlined a world of things around us that are poorly designed because their designers did not apply psychology to the design process. The idea that psychologists can answer questions about design, through a user-centered design process, is a thesis that has guided our field for several decades. However, if we examine what the world’s top industrial designers, such as Yves Béhar, Jonathan Ive, Karim Rashid, and Philippe Starck, actually do, it becomes clear that they work quite differently. To them, thinking about function is like thinking intuitively about three-dimensional shapes. Interaction design is at the dawn of a new age: Flexible Organic Light Emitting Diodes (FOLEDs) and Flexible Electrophoretic Ink (E Ink) present a third revolution in display technologies that will greatly alter the way computer interfaces are designed. Instead of being constrained to the flat surfaces, we will have the ability to shrink-wrap displays around any three-dimensional object, and thus, potentially, every everyday thing. You will order your morning coffee through a display on the skin of your beverage container and your newspaper will be displayed on a flexible paper computer. These "computational things" will need to be designed by artists who understand three-dimensional form if they are truly to become everyday. Industrial designers will become the new interaction designers. This does not necessarily mean current interaction designers will lose their jobs, as our field will expand to address new markets. Interaction design will in fact be everywhere when computers become so ubiquitous they are just everyday computational things.
14:00-15:00  Session 6:  
Haptic Rendering and Multimodal Interaction

Session chair: Karl Johan Palmerius

14:00-14:15  Two finger grasping simulation with cutaneous and kinesthetic force feedback
Claudio Pacchierotti, Francesco Chinello, Monica Malvezzi, Leonardo Meli &
Domenico Prattichizzo

14:15-14:30  Stable and Transparent Bimanual Six-Degree-of-Freedom Haptic Rendering Using
Trust Region Optimization
Thomas Knott, Yuen Law & Torsten Kuhlen

14:30-14:45  Feel the Static and Kinetic Friction
Felix Hamza-Lup & William Baird

14:45-15:00  Inside the boundaries of the physical world: audio-haptic feedback as support for
the navigation in virtual environments
Luca Turchet, Niels Nilsson & Stefania Serafin

15:00-15:30  Award ceremony and Closing

15:30-15:50  Coffee

16:00  End of the main conference

16:30  Post-conference demo session at TAUCHI
A guided tour to the TAUCHI labs. Demos and snacks are available.

TAUCHI labs are located at the Pinni B building, University of Tampere
WEDNESDAY 13.6: CITY RECEPTION

The City of Tampere organizes a reception to the EuroHaptics 2012 conference visitors at Museum Centre Vapriikki.

A bus transfer will be organized from the conference venue Hotel Rosendahl to the reception at Vapriikki. Vapriikki is located on the banks of the Tammerkoski. It offers a variety of both permanent and varied themes including history, technology and natural sciences. The exhibitions are closed during the city reception but the visitors are welcome to visit the museum at their own time.

20:45-21:45 Media Show at New Factory. After City Reception, 120 visitors will have a great opportunity to visit to New Factory, a novel engine room of innovation. During the visit a short introduction of what New Factory is about will be given, followed by an exciting digital art performance. Some refreshments will be served.

THURSDAY 14.6: CRUISE TO VIIKINSAARI ISLAND

Conference participants are invited to a late night sun cruise to Viikinsaari Island, to enjoy the Finnish summer night and conference dinner in good company.

The cruise and the dinner are included in the conference fee. Extra tickets for your companions are available via conference registration and on-site on the conference registration desk (100 EUR per extra ticket).

The cruise boats (operated by Hopealinja) will pick you up at the boat dock near the conference venue.

FRIDAY 15.6: TAUCHI OPEN HOUSE

After the official conference program has ended, the participants have a possibility to attend a guided tour to the TAUCHI labs. Demos and snacks are available.

The event is free of charge but requires registration (also possible on-site on the registration desk).

Busses will pick you up at the conference venue right after the last session and transfer you to the TAUCHI premises at the Pinni B Building, University of Tampere.
Organizing Committee

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Exhibitors and Sponsors

Platinum

Gold

Silver

Bronze
Useful Information

Floor plan

1-2  Plenary hall

3-5  Exhibition hall

7    Storage room

9    Speaker preparation room

In the case of Emergency:
The emergency number in Finland is 112

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The EuroHaptics assistant Jukka Springare is at your service 24/7.
Call +358-400-201150

EuroHaptics 2012 Office:
eurohaptics2012-office@sis.uta.fi

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<th>Time</th>
<th>Tuesday 12 June</th>
<th>Wednesday 13 June</th>
<th>Thursday 14 June</th>
<th>Friday 15 June</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>Registration opens at the conference venue, Hotel Rosendahl</td>
<td>Conference opening</td>
<td>Poster/demo teaser 3</td>
<td>EuroHaptics Society meeting</td>
</tr>
<tr>
<td>08:30</td>
<td></td>
<td>Poster/demo teaser 1</td>
<td>Poster/demo session 3 &amp; Coffee</td>
<td>Poster/demo session 5 &amp; media &amp; Coffee</td>
</tr>
<tr>
<td>09:00</td>
<td>Conference opening</td>
<td>Poster/demo teaser 1</td>
<td>EuroHaptics Ph.D. award</td>
<td>Session 5: Neuroscience and Medical &amp; Rehabilitation Applications</td>
</tr>
<tr>
<td>09:15</td>
<td>Poster/demo teaser 1</td>
<td>Poster/demo session 3 &amp; Coffee</td>
<td></td>
<td></td>
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<tr>
<td>09:30</td>
<td>Poster/demo session 1 &amp; Coffee</td>
<td>EuroHaptics Ph.D. award</td>
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<tr>
<td>10:30</td>
<td>Registration opens at Tampere University</td>
<td>Invited keynote by Piers Andrew</td>
<td>Invited keynote by Riitta Lahtinen and Russ Palmer</td>
<td>Session 5: Neuroscience and Medical &amp; Rehabilitation Applications</td>
</tr>
<tr>
<td>11:00</td>
<td>LUNCH</td>
<td>Invited keynote by Piers Andrew</td>
<td>Invited keynote by Riitta Lahtinen and Russ Palmer</td>
<td>Session 5: Neuroscience and Medical &amp; Rehabilitation Applications</td>
</tr>
<tr>
<td>12:00</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
<td>LUNCH</td>
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<tr>
<td>13:00</td>
<td>Session 1: Collaborative Haptics</td>
<td>Session 3: Tactile Display &amp; Tactile Sensing</td>
<td>Invited keynote by Roel Vertegaal</td>
<td></td>
</tr>
<tr>
<td>14:00</td>
<td>Workshop: TECHTILE toolkit</td>
<td>Poster/demo teaser 2</td>
<td>Session 6: Haptic Rendering and Multimodal Interaction</td>
<td></td>
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<tr>
<td>14:30</td>
<td>Workshop: Smart traffic</td>
<td>Poster/demo teaser 4</td>
<td>Award ceremony and Closing Coffee</td>
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<tr>
<td>15:00</td>
<td>Workshop: Multi-finger haptic interaction</td>
<td>Poster/demo session 2 &amp; Coffee</td>
<td>End of the main conference</td>
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<tr>
<td>15:30</td>
<td>Session 2: Devices &amp; Technology</td>
<td>Poster/demo session 4 &amp; Coffee</td>
<td>Coffee</td>
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<tr>
<td>16:00</td>
<td></td>
<td></td>
<td>Late night sun cruise and conference dinner</td>
<td>Post-conference demo session: TAUCHI open house</td>
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<tr>
<td>16:30</td>
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<tr>
<td>17:00</td>
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<tr>
<td>17:30</td>
<td>City reception &amp; New Factory</td>
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<td></td>
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<tr>
<td>18:00</td>
<td></td>
<td>Late night sun cruise and conference dinner</td>
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</tbody>
</table>