

Standout projects at ICT 2013

There are over 180 stands in the ICT 2013 showcasing latest in advanced research, technologies, new systems, innovation in services & business, ICT products just coming on to the market and the bright sparks of ideas which will change products and services in the next decades. There are some of the most important European players in ICT and up an coming SMEs and start-ups. The exhibition zooms in on themes which show how digital technologies and ICT influence the economy, society and science and can create jobs. The five themes are: digitally empowered citizens; smart and sustainable cities for 2020+; industry, business and work for tomorrow; intelligent connecting intelligence; culture, science and creativity.

1 THE DIGITALLY EMPOWERED CITIZEN

New technologies to help children with autism

Stand number: 5A9 In the US, 1 in every 88 children is reported to have some kind of Autistic Spectrum Disorder and the situation is similar in Europe. The EU-funded project Michelangelo uses digital tools and technologies to assess and treat children with ASD in a more "natural" home environment using non-obtrusive techniques. It has developed tools such as a wearable EEG system (inserted in a small, light cap, with micro-camera) to record brain wave behaviour and which can monitor the child at home and specifically designed serious games which analyse way the child playing, personalises the game and adjusts level of difficulty. At ICT 2013 you interact with a robot been designed to involve the autistic child in imitation tasks as a part of MICHELANGELO's rehabilitation program

michelangelo-project.eu. Contact: Silvio.Bonfiglio@barco.com

Project partners **France:** Assistance Publique Hopitaux de Paris, Universite Pierre et Marie Curie **Italy:** Consiglio Nazionale delle Ricerche (CNR) FIMI S.R.L. (Project Coordinator) Fondazione Stella Maris (FSM) I+ SRL **Malta:** AcrossLimits Limited **United Kingdom:** University of Southampton, University of Ulster



Cross border digital public services for a Connected Continent

Stand number: 5D17 As EU citizens are increasingly working, playing, studying and doing business across borders, online cross border public services are essential for a future digital economy and digital single market. Since 2008, large-scale pilots (LSPs) have been developing and testing seamless cross-border digital services in: **Securely linking electronic identities** - STORK 2.0 helping create a single European electronic identification and authentication area; **Making justice faster** –e-CODEX improves cross-border access of citizens and businesses to legal services in Europe; **Making healthcare better** - epSOS for cross-border interoperability between electronic health record systems; **Making procurement better** –PEPPOL helps European businesses to deal easily and electronically with European public authorities in their procurement processes; **Making business easier** – SPOCS provides seamless cross-border electronic alternatives to help businesses establish themselves abroad.

The next stage in this journey is e-SENS, over 100 partners from 20 countries from Portugal to Turkey are developing and implementing building blocks based on open standards and specifications in interoperable eIDs, eSignature, eDelivery and eDocuments. Innovators from the public and private sector can use these to create new digital public services, helping to "build, connect, and grow" Europe.

www.esens.eu www.buildconnectgrow.eu Carsten SCHMIDT (e-CODEX / e-SENS Project, Justizministerium des Landes Nordrhein-Westfalen, Budget, Information Technology and Organisation, Germany)

METABO – managing diabetes through SmartPhones, Tablets and desktop PCs

Stand number: 5C8 Diabetes has become a worldwide epidemic, with increasing costs for health and welfare system and for the community. It affects approximately 5% of population in developed countries (150 million persons currently and 300 in 2025). METABO has developed a technological platform to improve the flow of information between patients and physicians. Helping diabetics to self-manage their condition and helping professionals to make treatments personalised, and improve diagnosis and follow-up. METABO follows diabetics as they eat, walk, travel, and go to the cinema and giving personalized and adapted advice to the users. It can hook up with devices such as exercise monitors, continuous and regular glucose meters, weight scales and other sensors to help the users track their status and follow their prescriptions. Medical practitioners can also access this patient data and combine it with in-clinic data in METABO professional tool. At ICT 2013, the project will showcase the applications available through SmartPhones, Tablets and desktop PCs which have been validated with 54 patients and 24 professionals

<http://www.metabo-eu.org/> contact: Giuseppe Fico Spain gfico@lst.tfo.upm.es

2. SUSTAINABLE AND SMART CITIES FOR 2020+

SUstainable and PERsuasive Human Users moBility in future cities

Stand number 5E10. SUPERHUB aims make travelling in cities easier and greener. SUPERHUB has designed and implemented a web and mobile app which give users real-time information about the transport options available for a journey (including using our own vehicle, public transportation, car- and bike-sharing services, car-pooling offers) and prompts them to take the one with the lowest environmental impact. By 2014, after 3 years of R&D and large-scale trials in Barcelona, Helsinki and Milan, SUPERHUB will unveil an Open Platform for multimodal mobility services and mobile applications enhanced by an intelligent data aggregation platform and multimodal journey planner. Come and discover these at ICT 2013.

<http://superhub-project.eu/> **Contact:** [Antonio SAVARESE](#) (Fondazione Legambiente Innovazione, Italy)

Partners: **Belgium** : Diesis; GFI Adeliior NV, **Czech Republic** Centrum dopravního výzkumu, v.v.i., : Czech Technical University in Prague. **Finland** Accanto Systems, University of Helsinki (Helsingin yliopisto), HSL Helsinki Region Transport **Spain** , ATM Barcelona, Barcelona City Council (Ajuntament de Barcelona), Fundació Privada Barcelona Digital Centre Tecnològic, Universitat Politècnica de Catalunya, EID Investigación y Desarrollo, S.A.. **Italy:** Azienda Trasporti Milanesi S.p.A., Autoguidovie, Create-Net, eXrade, Imaginary, Legambiente, Vodafone Omnitel N.V. **United Kingdom**, University of Aberdeen

Lithuanian electric vehicles does 100kms to the Euro!

Stand number: 5E12 N Technologijos will show a real size one seated electric car prototype called CEV (City Electric Vehicle). **“CITY”** – because it’s a one person vehicle which can be used regular roads or sidewalks, but can also be driven straight into a standard elevator and continue your journey through the office or industrial plant. • **“ELECTRIC”** – because this enables outdoor and indoor use, no air or acoustic pollution and you will spend less than one euro to travel 100 km. • **“VEHICLE”** – because CEV is equipped with 4 wheels and a closed body with luggage compartment. In case of accident the CEV driver is securely held in metal capsular frame.

By adding everything together we demonstrate a light, urban and nature friendly personal transportation solution which does lean into a corner when turning, uses less space when parked, and may be charged at home or in the office from a standard electricity socket.

Partners: Coordinator: [Karolis BENIULIS](#) ("N Technologijos" UAB, Lithuania)

Urban Flood: Artificial Intelligence keeps the rising tide at bay

Stand number 5E4 Global warming and rising sea levels mean that many low-lying areas of the planet are at risk of flood The FP-7 funded UrbanFlood has created an ICT-based smart response to significant threats of a climate change induced disaster: flooding of cities. Tens

of thousands of kilometres of European, Chinese and US dikes are monitored by data centers created in the UrbanFlood project.

Thanks to Artificial Intelligence, UrbanFlood can detect anomalies in flood defence systems and can build the interactive 3D+T models through which decision makers to assess critical situations, to make evacuation plans and to estimate potential impacts, e.g. in terms of lives. It relies on the Cloud to keep costs down, make maintenance easy and improve resilience . UrbanFlood's common information space allows national and regional Flood Defence Authorities to work with each other and also links in existing systems. The technology has massively upgraded Europe's capacity to prevent flooding and has optimised investments in flood defences. Urban Flood already has triggered interests from Scientists (e.g. from the US Army Corps of Engineers) and companies (e.g. K-water from Korea) from outside Europe UrbanFlood has created an European and export market for smaller and larger companies, both traditional and high tech ones.

www.urbanflood.eu Contact: robert.meijer@tno.nl

Partners: Netherlands: TNO, STOWA, : the Foundation for Applied Water Research) University of Amsterdam Section Computational Science, **Poland: Cyfronet** **Russia:OOO Siemens** **UK: HR Wallingford**,

3. INDUSTRIES AND BUSINESSES FOR TOMORROW

Robots swarms do tasks humans can't or don't want to do.

Stand number: 4A4 ASCENS explores how ICT can help machines communicate and interact with each other and visualise situations to form an intelligent robot swarm. For example you can see how robots working collaboratively to solve problems can help humans perform undesirable or repetitive tasks. At ICT 2013, an autonomous robot will compete with one controlled by visitors to complete a basic construction task. To make it extra challenging, the human player will drive the robot guided only by a single directional video stream which shows the world from the robot point of view. ASCENS is an example of how ICT can allow machines to interact with each other and with us. The stand will also showcase ASCENS's simulations involving large numbers of robots executing various tasks such as construction, foraging, morphogenesis, and collective transport. The ASCENS demo will also illustrate the prediction of the behavior and performance characteristics of large-scale autonomous systems.

<http://www.ascens-ist.eu/> Contact: [Nora KOCH](mailto:Nora.KOCH) (Ludwig-Maximilians-Universität München, Institute for Informatics, Germany)

Belgium, Univ. Libre de Bruxelles, **Czech Republic**, Charles University **France** VERIMAG Laboratory, **Germany**; Fraunhofer Gesellschaft, Volkswagen AG, Zimory GmbH **Ireland**, Univ. of Limerick **Italy**: Università di Pisa, Università di Firenze, Univ. di Modena e RE, Istituto di Scienza e Tecnologie della Informazione "A. Faedo **Switzerland**; EPF Lausanne, Mobsya

VirCA takes your desk top into virtual space

Stand number: 4B3 You have been warned. Your trusty keyboard and mouse are on verge of becoming ancient relics only used by nostalgic ICT geeks. Researchers are developing a

3D virtual workspace, or collaboration arena (VirCA), in which your 'desktop' is much more closely linked with your physical reality, and in which social interactions play a central and practical role. VirCA enables people who are not necessarily in the same location, or even on the same continent, to create ideas, then design and work on projects together in a shared virtual space. VirCA was developed through the FET programme and is an award-winning pilot which highlights many key elements of the Future Internet.

<http://virca.hu/> Contact galambos@szta.hu Institute for Computer Science and Control, Hungarian Academy of Sciences, Hungary

Ebbits, enabling the business-based internet of things and services

Stand number: 4B15 ebbits is working to bridge the gap between business systems and real life to create an Internet of People, Things and Services” for business purposes. During this 4 year EU funded project, researchers are developing a platform which can feed information generated by RFID tags or sensors directly into enterprise systems and can also communicate with these devices in the physical world. The platform can also connect to external information sources like public authentication systems and regulatory data bases

ebbits helps consumers and businesses locate, connect to and monitor a product during its entire life. At ICT 2013 they will demonstrate how the platform could give better information on food across the complete production chain from farm to fork, and also how using ebbits to monitor energy during the automotive production process can improve step-by-step operations.

ebbits-project.eu. Contact. markus.eisenhauer@fit.fraunhofer.de

Partners Denmark: TNM A/S, JeT ApS **Germany:** Fraunhofer Institute FIT (Institute for Applied Information Technology) Coordinator. **Italy :** Comau, Istituto Superiore Mario Boella **Slovakia;** Technical University of Kosice, Intersoft a. s. **Sweden:** CNet Svenska AB, **International:** SAP

DJ robot battle

Stand number: 4E9 As robots become part of our daily lives, our interaction will be easier and more beneficial if Robots can develop social skills. Robots must develop social intelligence that includes perceptual, behavioural, emotional, motivational and cognitive capabilities. At ICT 2013, “iCub plays DJ with me” involves iCub robot interacting with a human partner and the “Reactable Table” an innovative musical instrument in a collaborative musical task. The Reactable was developed by researchers at Spain's Pompeu Fabra university in and was funded by the EU's FET open programme. The prototype has been developed into a successful commercial model, and has been used by artists including Bjork on tour.

At ICT 2013, the robot and humans will generate different sounds and graphics on the Reactable's digital surface and the iCub will react to the human actions to select musical objects to generate what he thinks is the “best song”. Over the course of the exhibition the iCub should learn what "songs humans like and improve its performance.

Machine and I, presented by EFAA and CSNI. Contact; Anna Mur Universitat Pompeu Fabra Spain anna.mura@upf.eduAnna

Holoxia presents first interactive 3D holographic display

Stand number: 4D6 Holoxica is an award-winning high-tech startup company specializing in holographic 3D visualization including digital holograms and holographic displays, without glasses or use any optical tricks for viewing. Holoxia has the first working prototype of a fully interactive 3D holographic display that can present images and other information in mid-air. The images can change in real-time. Interactivity is enabled via a motion sensor. Viewers can 'touch' icons or virtual buttons in space and do things like draw in mid-air. Holoxia's digital holograms are aimed at high-end professional applications including medical imaging, scientific simulations, engineering design and architecture. The company makes digital holograms from computer models, scanned data or live images. Designs range from bio-chemical molecular images and medical imagery to concept cars and complex machines. Some of Holoxias work is presented as scientific art in prestigious locations such as the MIT Museum in Boston, National Museum of Scotland and The Royal College of Surgeons in Edinburgh.

Holoxia.com [Javid KHAN](#) (Holoxica Ltd, United Kingdom)

4. INTELLIGENT CONNECTING INTELLIGENCE

Waiting for Godot.. via networked video communication

Stand number: 4C10 Vconnect takes live theatre across borders and into a new dimension. Their intelligent audio-video multi-camera communication system enables actors in different theatres in different countries to perform in the same play in front of separate audiences. At ICT2013, Vconnect will link up actors in the UK and Vilnius in a co-performance of Samuel Beckett's "Waiting for Godot" (Beckett). This technology could also bring live theatre to your living room, even enabling you to have pre and post-performance chats with fellow theatre goers from the comfort of your sofa. This is an attempt to recreate the atmosphere and excitement of live theatre performances when the stage and the audience are no longer in the same location. But it is more than that, this technology is a novel way of video-mediated communication, sensitive how and where it is being used and to network constraints, it is leading new forms of performance and audience engagement.

vconnect-project.eu Contact: Marian URSU (Goldsmiths College, Computing, United Kingdom)

Austria: JOANNEUM RESEARCH Forschungsgesellschaft mbH **Belgium:** Alcatel-Lucent Bell NV **Germany:** EURESCOM - European Institute for Research and Strategic Studies in Telecommunications GmbH, Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. **The Netherlands:** Stichting Centrum voor Wiskunde en Informatica **Portugal:** Portugal Telecom, **UK** Goldsmiths' College, University of London, University College Falmouth, British Telecommunications

Couldn't make it to ICT 2013? BEAMING will get you there

Stand number 4A14 The science and technology developed in BEAMING means you can "be" in a remote location with other people, and vice versa—without actually travelling.

Today, in spite of advanced video conferencing, shared virtual environments, and games such as Second Life, many people still prefer to physically travel to business, scientific or family meetings—even if this involves a lot of time, effort and ecological damage. The technology being developed by this 4 year EU funded project will enable visitors to "beam" into ICT 2013, take control of humanoid robot or virtual avatars on tablets or smart phones and interact with people at the exhibition in Vilnius. When the avatars are not being controlled by a remote visitor, the BEAMING proxy takes over and the avatars will autonomously interact with locals.

Technology researchers and neuroscientists are bringing together today's networking, computer vision, computer graphics, virtual reality, haptics, robotics and user interface technology in a way which has been never been tried before and hwhich is transcending what is possible today

www.beaming-eu.org. Contact. Stephen Dunne stephen.dunne@starlab.es

Partners: **Denmark:** Aalborg Universitet, **Germany** Technische Universitaet Muenchen TUM **Italy:** Scuola Superiore di Studi Universitari e di Perfezionamento Sant' Anna, **Israel:** Technion - Israel Institute of Technology, Interdisciplinary Center Herzliya , IBM Haifa Research Lab IBM, **Spain** Starlab Barcelona (Coord.), Universitat de Barcelona, Consorci Institut d'Investigacions Biomediques August Pi i Sunyer **Switzerland** Eidgenössische Technische Hochschule Zürich, **UK:** University College London

uTrustit: Usable Trust in the Internet of Things

Stand number: 4B23 Today, the internet of things, means that not only our smartphones tablets and computers are on-line but hundreds of devices in our homes and workplaces. As systems become more ubiquitous, pervasive and invisible, there is a risk that you can lose track of which applications or things are connected to the Internet, how securely they are connected, what information is transmitted, and who is receiving the information that is sent.

The uTRUSTit project has developed the Trust Feedback Toolkit, which keeps you informed about a system's security status and privacy behaviour, through the uTRUSTit Security Advisor. It can also advise users about the privacy and security implications of their actions. Come and test this out with a smart medicine cabinet and other connected devices at ICT 2013.

[http://www.utrustit.eu/](http://www.utrustit.eu) Katharina Maurer maurer@cure.at

Austria: CURE - Center for Usability Research and Engineering, **Belgium** Katholieke Universiteit Leuven, **Germany:** Chemnitz University of Technology Hungary: SEARCH-LAB **Norway:** Norsk Regnesentral (Norwegian Computing Center), **Sweden:** Sweden Connectivity

5. CULTURE, CREATIVITY AND SCIENCE

No Robotics PhD? Get LocoKit!

Stand number: 5H4;Locokit is an open source robotic toolkit that enables researchers to work with legged robots, without needing a P.hD. in robotic systems. Locokit takes robotics out of the hands of specialist and opens it up to research areas such as biology, bio-mechanics, control and learning. It means you can build a legged robot in a day, instead of

months. LocoKit electronics is ready to go. Once you have attached the cables connecting the battery to the main board and the cables attaching the main board to the motors you are done. The robot can, once turned on, be controlled using a standard web-browser running on any WiFi enabled device (computer, tablet, smartphone, etc.). No software installation required: The LocoKit Educational Robotic Toolkit has been developed as part of the FET funded project Locomorph and been recently commercialized. At ICT2013 you will be able to interact with the robots through your own smartphone or tablet

<http://www2.sdu.dk/cms/locokit/> Contact: Kasper Støy University of Southern Denmark kaspers@mmpi.sdu.dk

Plantoid, artificial intelligence putting down robotic root

Stand number: 5G12 Soil is a source of vital elements (water, nutrients, and minerals) for all living systems, it contains most of our energy resources and the raw elements which have built our digital. Researchers from 3 European countries have developed a new generation of ICT hardware and software technologies inspired by plant roots. PLANTOIDS have distributed sensing, actuation, and intelligence. They are an example of how artificial intelligence can understand that environment and context in which it works. PLANTOIDS could have the potential to spread their roots into environmental exploration and monitoring, agricultural development, rescue, space exploration, or even as neurosurgical and endoscopic instruments.

In Vilnius you can discover plant root inspired robots including a self-anchoring robotic system for which can tunnel along an axis, a growing robot which can to penetrate and create its own structure by adding new materials, and the ARTT (Analyzer for Root Tip Tracks) image analysis tool which can monitor the movement of roots in artificial soils without any markers. The project has been funded through the FET OPEN part of the EU's current research and innovation programme.

www.plantoidproject.eu. Contact; Barbara Mazzolai Istituto Italiano di Tecnologia Italy barbara.mazzolai@iit.it

Italy: Istituto Italiano di Tecnologia, Center for Micro-BioRobotics ,Pontedera, Università degli Studi di Firenze, The International Laboratory on Plant Neurobiology **Spain:** Institute for Bioengineering of Catalonia, **Switzerland:** Ecole Polytechnique Fédérale de Lausanne (EPFL) The Laboratory of Intelligent Systems

ILHAIRE. Can virtual human beings be funny?

Stand number: 5G7 Can a virtual human being or avatar have a sense of humour? Laughter is all around us. It is sometimes contagious, mostly joyful, sometimes irritating. Laughter also has subtle meanings and influence on conversations, and is affected by highly complex and often unspoken social rules. The ILHAIRE project is gathering knowledge related to laughter from the perspectives of psychology, human-computer interaction and signal processing. At ICT 2013 you will see how two years of research can give computer-generated cartoon-like characters the emotional and conversational skills to become more lifelike and able to be used in a wider range of applications. Visitors will be able to engage

with avatars through a range of funny scenarios and games and also speak to experts in both psychology and engineering.

www.ilhaire.eu. Contact, Stéphane Dupont University of Mons, Stephane.dupont@umons.ac.be.

Partners. **Belgium:** University of Mons. **France:** Centre National de la Recherche Scientifique, Supélec, Cantoche. **Germany:** University of Augsburg, **Italy:** Università degli Studi di Genova, **Switzerland:** University of Zurich, **UK:** University College London, Queen's University Belfast

Smart technologies measure emotional response to music

Stand number: 5J8 Can you measure empathy or see how entertained a group of people are? Can you determine who is the leader? Are emotions contagious? The EU-funded SIEMPRE project has used ensemble musical performance and audience experience as a test-bed. Famous artists such as conductor Riccardo Muti, violinist Renaud Capuçon, the Quartetto di Cremona and the Terpsychordes quartet helped the project look at human behavior in string quartets, orchestras, and audiences. In the later stage of research SIEMPRE collaborated with TANGO, a FET project measuring interactive emotional experience. The ICT2013 booth presents a theoretical framework and demos to measure nonverbal social signals using sensors in smartphones and a thermo camera.

www.siempre.infomus.org Contact: Antonio CAMURRI Università degli Studi di Genova antonio.camurri@unige.it

Partners: Italy. Università degli Studi di Genova, DIST, Casa Paganini - InfoMus Research Centre (Project Coordinator); Fondazione Istituto Italiano di Tecnologia, RBCS; **Spain:** Pompeu Fabra University, DTIC, **Switzerland:** University of Geneva, Swiss Center for Affective Sciences, **UK:** Queen's University of Belfast

COSMOS brings eScience into schools

Stand number: 5H5 Discover the COSMOS brings science into the classroom . Through the website, (<http://portal.discoverthecosmos.eu>) students and teachers can, for example control a remote telescope in Hawaii or in Australia and make their own astronomical image or connect live to the ATLAS experiment at CERN. The aim is to explore innovative ways to involve teachers and students in e-Science through the use of existing e-infrastructures to spark young people's interest in science and in following scientific careers. The project is also developing technology enhanced Science Education in schools through a wide federation of labs which teachers and students throughout Europe can use in theGo-Lab project (www.go-lab-project.eu)

<http://www.discoverthecosmos.eu/> Contact: Sofokli Sotiriou sotiriou@ea.gr

Partners: Austria: Bundesministerium für Unterricht, Kunst und Kultur (BMUKK) IT-Systems for Educational Purposes, **France:** National Center for Scientific Research - Institut d' astrophysique de Paris **Germany:** Technische Universität Dresden **Greece:** The Institute of Accelerating Systems and Applications, Ellinogermaniki Agogi, Research and Development Department, Hellenic Association of Science Journalists, Science Writers and Science Communicators **Portugal:** Faculty of Sciences and Technology, University of Coimbra, Nucleo Interactivo De Astronomia, **Spain** Universidad Complutense de Madrid **Switzerland:** European Organization for Nuclear Research, CERN, **UK:** University of Glamorgan - Faulkes Telescope Project, University of Cambridge, Institute of Astronomy, Liverpool John Moores University, Astrophysics Research Institute, University of Birmingham, UoB, **US:** Lawrence Berkeley National Laboratory, LBL (USA)