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European Research Cluster on the Internet of Things

Foreword

Dear Readers,

Most of you know already that the IERC had gained new speed this year with the arrival of several important research projects and a new working structure. The various initiatives tackle a wide range of issues, from architecture over major application scenarios to privacy, security, governance and standardization plus several more. A dedicated importance is also given to the international cooperation in this field, and to connect to national IOT initia-

tives in the European Member States.

Besides its core research work the Cluster integrates innovation and take-up projects with a strong industry and end-user participation. A third pillar is the Cluster's involvement in policy development both for the future European Research Program and the recently established EU IOT Expert Group where the Cluster contributes to advise the Commission on how best to address the technical, legal and organisational challenges at European level.

This newsletter is the first edition and will be published several times a year. Its purpose is to keep you informed but also to provide you a platform for making others curious about your thoughts and results. I wish you now an

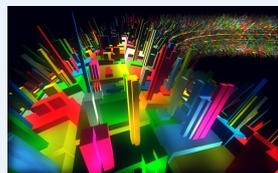


excellent reading and please do not forget - our enterprise has just started!

Dr. Peter Friess

Welcome to the IoT European Research Cluster

The European Research Cluster on the Internet of Things is bringing together EU-funded projects with the aim of defining a common vision and the IoT technology and development research challenges at the European level in the view of global development.



Managing the knowledge integration process between the projects participating in the Cluster is a crucial task and is a challenge not only because knowledge is often dispersed, differentiated and embedded in various projects but also because the projects and the partners have their own agendas within organizations that are intrinsically

different, that may possess diverse competencies and conflicting interests. In this context the Cluster has created a number of activity chains to favour close cooperation between the projects addressing IoT topics and to form an arena for exchange of ideas and open dialog on important research challenges. The activity chains are defined as work streams that group together partners or specific participants from partners around well defined technical activities that will result into at least one output or delivery that will be used in addressing the IERC objectives. Today we have defined 15 activities chains that are grouped under 5 main areas:

- *Architecture approaches, models, naming, search, discovery,*
- *Governance issues, privacy and security,*

- *Links to national, European and international initiatives,*
- *Interoperability, standardisation, dissemination, exploitation,*
- *Coordination of the Strategic Research Agenda at the European level in the global view.*

By leveraging the world class discovery and development expertise, the IERC bring innovative, new technical solutions and addresses the challenges of the "billions of interconnected devices" in the context of technology for the benefit of society.

If you are interested in the area of "Internet of Things" keep in touch. Visit our website at www.internet-of-things-research.eu, read the newsletter, join the Cluster activities, or contact us directly.

Dr. Ovidiu Vermesan



PrimeLife highlights:

- First implementation of the Identity Mixer anonymous credential system on a standard Java Card.
- Clique and Scramble! open source social networking prototypes for improving privacy in social networking.
- Privacy Dashboard open source prototype on Web privacy.
- Implementation of an access control and data handling policy language for Web Services compositions to realize policy-driven privacy-enhanced management of data throughout the data life-cycle.
- Hardware technology for securing user interactions on mobile devices.



The ELLIOT Experiential approach will be explored and its technology platform experimented within different use cases belonging to three different sectors, namely Logistics, Wellbeing and Environment, in order to validate the capacity for users/citizens to co-create IoT based services.



CASAGRAS2 highlights:

- March, 2011, a forum report on international issues concerning the IoT and IoT development will be delivered
- CASAGRAS2 will host two open workshops in February 2011 China and April 2011 USA.



PrimeLife

The vision of the PrimeLife project is to enable individuals in the information society to protect their privacy and retain control over their personal information, irrespective of the activities they are performing.

PrimeLife's approach is to pick up the results and technologies from PrimeLife's predecessor project PRIME (www.prime-project.eu) and work towards their adoption in the real world by providing materials for standardization and education. PrimeLife will eliminate the remaining hurdles for

large-scale adoption as identified by PRIME including user interfaces, policy languages for the technologies' integration into currently-used access control schemes, and infrastructural components. PrimeLife also aims to solve the privacy, identity, and trust management challenges for the cases where the paradigm of privacy protection by data minimization fails. This includes Web 2.0 applications, i.e., where users provide content and, in contrast to the paradigm of privacy protection by data minimiza-

tion, want and need to reveal substantial amounts of personal data. A primary focus of PrimeLife is the sustainability of privacy throughout people's lives as well as the coverage of their different areas of life. See www.primelife.eu/results/articles for a selection of PrimeLife's research publications. See www.primelife.eu/results/documents for the public project results. All our open source results are available at www.primelife.eu/results/opensource

ELLIOT – Experiential Living Lab for the Internet of Things

The ELLIOT project aims to develop an experiential IT platform where users/citizens will be directly involved in co-creating, exploring and experimenting new ideas, concepts and technological artefacts related to applications and services in the IoT.

Starting from these three cases, we expect that the ELLIOT project will significantly contribute to a new, user-centric approach to new product/service development in IT by through its experiential IT platform, suitable to be progressively extended to other sectors and industrial domains. ELLIOT is a 3 years project, coordinated by TXT Polymedia, an Italian leading company active in the

European market as software vendor and integrator, specialized in Media & Channel Integration. The ELLIOT consortium also comprises:

- Four leading research organisations from 3 European Union Country, involved in user centric and open innovation research topics (the University of Nottingham, the University of Reading, INRIA and BIBA);
- One consulting company from Italy, Collaborative Engineering, involved in Living Labs and Professional Communities setup and management;
- An SME from France, Vulog, specialised in efficient urban

transportation system;

- A leading organisation in the Healthcare area from Italy, Fondazione S. Raffaele del Monte Tabor, involved in the experimentation of innovative treatment processes for its patients;
- an independent non-profit organisation from France, FING, helping private businesses, public sector institutions and national territories to anticipate changes inspired by technology and its uses.

For more information please visit the Elliot project web-site:

www.elliott-project.eu

CASAGRAS2

The need for authoritative, ongoing international cooperation in respect of the European agenda for taking the concept of the Internet of Things to reality is pivotal in putting it into the global context it demands. CASAGRAS2 provides the necessary conduit for taking the next steps in international collaboration.

CASAGRAS2 identifies a much broader base for international cooperation, with partners from Brazil, mainland China, Hong

Kong, India, Japan, Korea, Malaysia and USA. The European partners are from Belgium, France, Germany, Russia and the UK. CASAGRAS2 also identifies a group of experts to participate in the project that will target stakeholders based in Argentina, Belgium, Brazil, China, Denmark, Germany, India, Italy, Korea, Netherlands, USA and Russia. Outcomes will be delivered through a dissemination infrastructure, exploiting a range of

delivery platforms and serving a wide range of project, stakeholder and end-user delivery needs, with substantial foundations for innovation and enterprise in respect of applications, services and products, and socio-economic benefit.

More information are available at the CASAGRAS2 project home page: iot-casagras.org/panel/welcome-casagras2

EURIDICE

The EURIDICE project aims at development and diffusion of the Intelligent Cargo, intended as a paradigmatic change in the field of ICT applications for transport logistics. Despite availability of key technologies, like RFID, high-speed mobile networks and Web Services, the largest part of goods still move unsupported by information services along the route, resulting in process inefficiencies, poor communication between supply chain actors, and consequent higher societal costs in terms of environmental impact, safety and security risks. In the EURIDICE vision, Intelligent Cargo connects itself to logistics service providers, industrial users and authorities to exchange transport-related information and perform specific services whenever required along the transport chain. This will produce significant bene-

fits for the logistics industry and for the community:

- Enhanced and widespread capability to monitor, trace and safely handle moving goods at the required level of detail, from full shipments to individual packages or items.
- Increased efficiency of freight transportation networks, by improving synchronization between cargo owners, logistic services and control authorities.
- Improved sustainability of logistic systems, by reducing their impact on local communities in terms of traffic congestion and pollution.

EURIDICE goal is to build a services platform centred on the individual cargo item and on its interaction with the surrounding environment and the user, allowing cargo objects and devices to

perform basic interactions on their own and to involve the users' information systems if and when needed. The approach consists of making cargo information services available to the mass of potential users, by lowering adoption barriers related to cost, effort and information system requirements. The EURIDICE platform is open and scalable: users will have the option to use and extend the EURIDICE services gradually, depending on the involved stakeholders (operators, cargo owners, infrastructures and authorities) and the required level of functionality, from data acquisition to automated transactions, to intelligent data analysis and decisions support.

More information are available at the EURIDICE project home page: www.euridice-project.eu

IoT@Work

IoT@Work focuses on developing self-configuration mechanisms, enabling what we call secure plug and work IoT, whereby devices are auto-configured and ready to co-operate with each other as soon as they are plugged into the factory network, self-adapting to changes in response to demands, faults, etc.

IoT@Work is an EU project led by Siemens AG running within the ICT research programme. The project focuses on harnessing IoT technologies in industrial and automation environments. It will use the FIAT Research Centre facilities (as part of the largest industrial company in Italy) to develop an IoT-based plug and

work concept centered on industrial automation. The consortium also includes several distinguished researchers from City University London, Lemgo's Institut Industrial IT (inIT), European Microsoft Innovation Centre (EMIC), and TXT-e Solutions.

IOT-I – The Internet of Things Initiative

The Internet of Things Initiative (IOT-I) represents the first serious attempt in building a unified IOT community in Europe, going across boundaries of disparate technology sectors, in order to create a joint European strategic vision of the Internet of Things and aligning this vision with the current developments on the Future Internet. IOT-I brings four key strategic objectives

- Build-up an IoT community and gain a precise picture of the IoT landscape: "IOT-I connecting IOT people"
- Create a holistic strategic and

technical vision for the IoT, encompassing the currently fragmented sectors of the IoT domain

- Contribute to an economically sustainable and socially acceptable environment for IoT technologies and R&D activities
- Create a platform for international development of IOT technology

Practically IOT-I will carry out strategic activities like, creating a Reference Model for IOT, generating a knowledge base capturing both the IOT landscape (actors) and the current State of the Art in

IOT, generating a strategic research and application agenda, making Ethical and Sociological recommendations to promote introduction and adoption of the IOT technologies.

In addition IOT-I will run late 2011 an International Forum on IOT in collaboration with CASAGRAS2. This forum will feature several working groups dealing with various aspects of IOT, Learning sessions, Keynote talks,... and will ultimately aim at creating a platform for global debate on IOT.



EURIDICE highlights:

- Outstanding paper award at the world congress in Busan, South Korea for "Cargo Centric Approach for Supply Chain Design - Reference Architecture".
- One book chapter in "Architecting the Internet of Things" with the topic "Intelligent Cargo – Using Internet of Things Concepts to Provide High Interoperability For Logistics Systems".
- Main organizer of the 4th European Conference on ICT for Transport Logistics (ECITL).

"The meaning of things lies not in the things themselves, but in our attitude towards them".

Antoine de Saint-Exupery



IoT@Work



IOT-I highlights:

- ICT 2010 Networking Session on IOT and animation of IOT booth with IOT-A
- November 16th, 2010 - Presentation of IOT-I at the Wireless World Research Forum#25, Reading, UK
- Knowledge base for capturing the IOT landscape is up and running



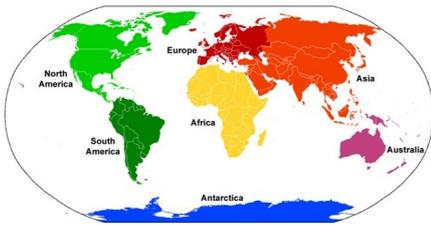
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ABOUT IERC

IoT European Research Cluster

The aim of European Research Cluster on the Internet of Things is to address the large potential for IoT-based capabilities in Europe and to coordinate the convergence of ongoing activities.

European Dimension

IoT has the potential to enhance Europe's competitiveness and is an important driver for the development of an information based economy and society. A wide range of research and application projects in Europe have been set up in different application fields. Communication between these projects is an essential requirement for a competitive industry and for a secure, safe and privacy preserving deployment of IoT in Europe.

Global Dimension

IERC will facilitate the knowledge sharing at the global level and will encourage and exchange best practice and new business models that are emerging in different parts of the world. In this way, measures accompanying research and innovation efforts are considered to assess the impact of the Internet of Things at global and industrial level, as well as at the organisational level.

IERC News

- [European/China IoT Expert Group meeting.](#)
-22-23 February 2011 Beijing, China
- [EWSN 2011 - IERC Activity Chain on Applications.](#)
-22-25 February 2011 Bonn, Germany
- [IERC Meeting.](#)
-March 2011 Prague, Czech Republic

IoT Events

- January**
[IEEE Communications Magazine Feature Topic Issue on The Internet of Things](#)
 -15 January 2011 - Paper submission deadline
- February**
[EWSN 2011 - 8th European Conference on Wireless Sensor Networks](#)
 -23-25 February 2011 Bonn, Germany
[Mobile World Congress 2011](#)
 -14-17 February 2011 Barcelona, Spain
- March**
[SSI 2011 - Smart Systems Integration 2011](#)
 -22-23 March 2011 Dresden, Germany
[CeBIT 2011](#)
 -1-5 March 2011 Hannover, Germany
- April**
[RFID Journal LIVE! 2011](#)
 -12-14 April 2011 Orlando, FL, USA
[Conhit 2011](#)
 -5-7 April 2011 Berlin, Germany
- May**
[ICT Proposers Day 2011 - Networking for European ICT Research and Development](#)
 -19-20 May 2011 Budapest, Hungary
 Conference - Europe and the Internet of Things: Leading the way forward
 -16 May 2011 Budapest, Hungary
[Internet World 2011](#)
 -10-12 May 2011 London, UK
[ICT 2011 - 18th International Conference on Telecommunications](#)
 -8-11 May 2011 Ayia Napa, Cyprus
[FET11 - The European Future Technologies Conference and Exhibition](#)
 -4-6 May 2011 Budapest, Hungary
- June**
[ICE'2011 - 17th International Conference on concurrent Enterprising](#)
 -20-22 June 2011 Aachen, Germany
[Future Network and Mobile Summit 2011](#)
 -15-17 June 2011 Warsaw, Poland
[IEEE ICC 2011 Workshop on Embedding the Real World into the Future Internet RWF1](#)
 -5-9 June 2011 Kyoto, Japan



The "European Research Cluster on the Internet of Things–IERC" was established by the DG Information Society and Media, as part of Europe's ambition to shape a future Internet of Things for its businesses and citizens.