

The Future of the Internet
Perspectives emerging from R&D in Europe
Bled 1st April 2008

“Communicating Things” – Panel Discussion

Care Taker:

Mirko Presser (The University of Surrey – FP7 SENSEI project) is a research fellow at the University of Surrey, CCSR, leading the activities of the wireless sensor and actuator networking laboratory. He was a key member of the technical steering group of e-SENSE and was one of the main actors in securing the funding of the project. He was also actively involved in the CRUISE project and the SETsquared/CALIT2 – UK/US wireless collaborative program. Since January 2008 he is the technical manager of the FP7 SENSEI project (www.sensei-project.eu). He was awarded the prestigious Lord Lloyd of Kilgerran Memorial Prize for his work on wireless short range communications and has organised numerous conferences and workshop and has participated in many FP6 and now FP7 projects.

Panellists:

Michel Cezon (INRIA – FP7 ASPIRE project) has spent over 25 years in IT/service industries, mostly in innovative technologies (e.g. Artificial Intelligence and e-business). He led numerous EC projects in FP that are well before my telecoms years. He joined INRIA in January 2007 to manage and coordinate European projects. He is currently involved in several FP6 and FP7 projects: e.g. NESSI-Soft, NESSI-Grid, ASPIRE.

Srdjan Krco (Ericsson Ireland – FP7 PROSENSE and FP7 SENSEI projects) , is a Senior Researcher in Ericsson Ireland Research Centre where he leads a team working on research issues related to the role of wireless sensor networks and M2M communication in the network of the future. He is the project coordinator of the EU FP7 project Prosense and is active in the SENSEI project. He received the Innovation Engineer of the Year award in December 2007 from Engineers Ireland for his work in the area of wireless sensor networks and mobile networks.

Ingrid Verbauwhede (K.U. Leuven – FP7 ECRYPT project) is a professor in the Electrical Engineering department at the K.U.Leuven in Belgium since 2003. Before that she was a professor at the University of California Los Angeles. In Leuven she is a co-director of the COSIC research group. Her area of interest is the implementation aspects of security and privacy for resource constrained embedded systems.

Stephan Haller (SAP AG – FP7 SENSEI project) is a Senior Researcher in SAP's Smart Items Research Program, he is based in Zürich, Switzerland. He was the project manager of the IST CoBIs project. Stephan initiated RFID development activities at SAP in 1998, and has since been deeply involved in the research and development leading to the SAP Auto-ID Infrastructure and customer projects like the Metro Future Store.

Daniel Kofman (Telecom Paristech – FP7 EIFFEL and FP7 EuroNF) is a Professor at Telecom Paristech and Director of the Institute of the Network of the Future, part of

the institute telecom. He is chairman of the NoE EuroNF and participating to EIFFEL. He is also CTO of RAD DATA Communications.

Panel Agenda:

1. Introduction by Mirko Presser
2. Internet of Things – Issues Paper by Michel Cezon
3. Communicating Things in the Future Internet – a vision by Srdjan Krco
4. Security, Privacy and Trust for Communicating Things by Ingrid Verbauwhede
5. Communicating Things in the Future Internet – a viewpoint by Stephan Haller
6. The EPCglobal standards: an opportunity or a threat for Europe by Daniel Kofman
7. Questions from the audience.

Questions and discussions:

Communicating Things has a wide scope of opportunities, however they are very badly understood from a business model point of view. Where is there business, how can it be leveraged?

- Many technological problems are still not solved. True RFID is a maturing technology and there are quite a few products/solutions on the market. However if we look into the active side, battery powered nodes with sensing and actuating capabilities, then there are many outstanding challenges, for instance power consumption is still a huge issue.
- Prototyping and deploying test cases is a very good way of seeing if there is a business case for sensors. It is not always clear if processes get changed too significantly using communicating things, making adoption difficult.

→ A clearer insight into business models for Communicating Things is needed.

Do Communicating Things need an IP address?

- It is very application dependant. Some applications can easily be realised using IP addresses on sensor nodes, others are impossible to be realised with IP addresses. For instance if we look at two extremes, a web-cam versus a mass deployment (throw and forget) of sensors for environmental monitoring, for the later, the IP end point model is clearly not suitable. Current technologies exist that provide an in-between solution (address translation at a Gateway) using IPv6 and 6LoWPAN.

→ Addressing and naming is a big topic on which Communicating Things will have an effect.

The EPCGlobal standards are currently in a process of definition, in particular the Information Services. This is an opportunity as much as it could be threat to Europe.

- Parallel architecture or contributions?

→ Investigation of the opportunities and potential contributions to these activities

Communicating Things panel actions:

- EPCglobal is a reality, EPC information services such as discovery services being discussed. There is a need to take action to join these activities for

Europe not to fall behind. The panel will start an investigation into the possibilities of participating to EPCglobal from EU project perspective, identifying an action plan and people to execute this plan.

- Roadmaps for the Internet of Things are still vague. In particular on the business perspective. This is an opportunity for the panellists to mobilise people in their associated projects and provide a consolidated set of existing success stories of Communicating Things being used in business practices and in addition to identify the most promising Internet of Things elemental applications that show the most promising business for current models and promising elements/applications that require a radical review of business models.
- White paper based on the NoF and IoT Issues paper and expertise from the panel.

Panel Contact:

Mirko Presser – m.presser@surrey.ac.uk

Michel Cezon – michel.cezon@inria.fr

Srdjan Krco – srdjan.krco@ericsson.com

Ingrid Verbauwhede – Ingrid.Verbauwhede@esat.kuleuven.be

Stephan Haller – stephan.haller@sap.com

Daniel Kofman – kofman@enst.fr