

Proposal for a session at the Future Internet Assembly

Subject

Communicating Things

Scope (Max 5 lines text)

Integrating IoT to the physical world into the Network of the Future on a global scale which can be secure and trusted, by creating:

- Addressing and Naming: Do Communicating Things need an IP address?
This is very strongly application dependant. Some applications can easily be realised using IP addresses on sensor nodes/RFID, 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/RFID 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.
Some examples for discussion: Service Discovering, ONS, EPC, ucode, Physical vs. Logical Addressing, IPv6
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?
- Heterogeneity: The Future of the Internet will go beyond today's traditional boundaries of the virtual world by being linked to the real world, the world of objects and things. This link will be based on RFID tags and sensors embedded in objects that will allow the network to have real-time information on the whereabouts of any object (location, status, etc.). Different technologies have to work together to connect to the world. For example: RFID, Wireless Sensor Networks, Actuators, Embedded Systems, etc.
- Services: The development of the IoTs is expected to come along with a new range of user-centric services, based on the interaction of day-to-day processes with the network. IoTs provides input to the following elements and needs to be taken into account, e.g. Service Composition, Interfaces, Quality of Information, Quality of Service, Quality of Actuation, Context Awareness and Semantics.
- Scalability: The development of IoT applications, through the massive increase of new entry points into the network; represent a challenge for the scalability of the network, its communication protocols and middleware. Network symmetry requirements may also need to be revisited. Development of applications such as: Sensor Data, Streaming Data, Filtering Aggregation, Event-Driven Architectures, Edge Processing, Distributed Business Logic, etc.

Initiator domain

IoT WG

Priority given by the initiator domain

1

Duration of the parallel session

2.5

Other domains required to participate and how

Networks, Services, Security and Experimental facilities

Endorsement/support from other domains

Networks