

## RWI meeting minutes

The objective of the session was to:

- Reflect upon the different discussion in the cross domain topics and their significance for the RWI community
- Discuss about new way forward for work on the core pillars of RWI
- Discuss an initial approach for the RWI community towards Valencia

Details on agenda and presentation slides can be found here:

[http://rwi.future-internet.eu/index.php/RWISession\\_Stockholm](http://rwi.future-internet.eu/index.php/RWISession_Stockholm)

### Introduction

The session started off with an introduction of Alex Gluhak to the session, outlining the RWI agenda and briefly reviewing past meeting events and the progress since last meeting. While RWI community meetings seem to be always excellent, there is too little activity between the events. Therefore in future the focus will be on joint undertakings within the RWI community such as white papers, recommendations to other FIA communities and interactions with the CERP-IoT cluster.

### Analysis of cross domain sessions with respect to RWI

After the introduction the session continued with a detailed update for the different cross-domain topics by the respective RWI rapporteurs. The following cross-domains topics were covered:

- Discovery and search (Manfred Hauswirth)
  - The session started with a general intro and goal statement by Petros Daras:
  - Search is cross-disciplinary (FCN: search for content; IoT: search for resources and information from devices; IoS: discovery of services, etc.)
  - Text-based search is insufficient
  - Session goal: common understanding
  - This was followed by 3 invited speakers presenting different views on search and discovery from different FIA domains:
    - FCN perspective (Ralph Traphoener)
    - FISO perspective (Dieter Fensel)
    - RWI perspective (Neeli Prasad)
- The talks presented interesting insights into current problems the different communities work on in respect to search and discovery (content-based search, non-text search,

unstructured => structured search, service discovery, semantic issues and mediation, linked data, discovery of devices, etc.).

- The following panel discussion revolved mainly around “classical” search and discovery problems in the areas above. There was no discussion of search and discovery problems relevant to RWI which was felt as a significant gap in next day's RWI Technology Café. We have to distinguish between searching for devices, services or for information.
- Smart City (Mirko Presser)
  - The session consisted of 3 speakers and a panel discussion. The overall perception during the panel discussion was that the city is a very good incubator for Future Internet technology, in particular the Real World Internet/Internet of Things. However technology is not the solution, but part of the solution to making a city smarter. Overall, the smart city would also be a very good environment for a Public Private Partnership in relation to the FIA due to its relatively independent administration and governance as well as its incubator function and access to the public sphere.
- Business architectures /Enterprise (Srdjan Krco):
  - The goal of the first session, Different architectures for different business models, was to identify a roadmap for research on architectural issues, to define research priorities and get an agreement and an initial description of the system interfaces and architectures. However this was not achieved. The session consisted of several short presentations giving views on this topic from networking, services, content, security and socio-economic perspective. A common view seems to be that a generic architecture is required that will be instantiated with different configuration settings depending on the business model requirements.
  - The second session, FI and Enterprise, started with several short presentations that were followed by 3 knowledge cafes that were held in parallel. The topics of the cafes were the following: Visions and policies aspects, Socio-economic aspects and Technology aspects.
- Other sessions discussed included Identity and Trust

### **Knowledge cafe session**

The initially planned four knowledge cafe sessions were merged into the following two sessions:

- Internet of Things / NoF and Security, Trust and Identity

The following topics were discussed:

- trust in an enterprise
- the (lack of) willingness of enterprises to invest in new technology due to high cost of replacing legacy systems that are working well

- the role of social networking in enterprises and whether it can improve the efficiency,
- Who holds and owns knowledge in enterprises, legal (companies) and factual (people)
- Content – who holds the knowledge, legal and factual situation
- IoT – intelligent entities may reduce the amount of data exchanged, but not for sure. IoT important as an input to improvement of work processes and decision making
- Cloud – private clouds will take off; will be used by large companies. Public clouds viable solution for SMEs
- Real world knowledge and service layer integration

The following topics were discussed:

- Modelling approaches for business processes which take into account devices are missing.
- RWI involves event-driven / ad-hoc business processes, but the modelling of business / higher-level events out of real-world events is difficult and it is unclear if existing SOA software is ready for this.
- “Filtering at the edges”, i.e., is highly relevant to prevent network / information overload. How can we provide mechanisms that support the extraction of knowledge but do not overload the network, nor drain devices too quickly (energy efficiency)?
- There is a GAP between IoT and the Cloud (for example, using the Cloud for processing large amounts of IoT generated data).
- There is a disconnect in the assumptions made at the various layers (services, discovery, middleware, networks, etc.) in respect to device capabilities, energy, reliability, location, etc. which hinders progress.
- RWI calls for a “continuous” knowledge management approach which does not exist yet.

### **Internet of Things /NoF and Security, Trust and Identity**

When reflecting upon the discussion on in the different cross-domain topics with respect to the RWI agenda, a set of following observations has been made:

- How to handle exceptions (detect and manage it), when things go wrong
- Common FIA reference model and taxonomy
  - Reconciled assumptions
  - Gap identification
  - Convergence of ideas

- Consider CERP-IoT / Casagras work here as well
- Event based communication
  - Publish subscribe based communication
  - Synergies with FI community activities
  - General purpose software landscape is not ready yet
- Internet as systems-of-system
  - One size does not fit all
  - Pluralism of architecture and solution (how to support this)
- Bring Internet closer to the people / the real world not only integrating the real world into the Internet
- Control of services and applications is becoming increasingly if they rely on highly distributed real world services spread across different administrative domains
- There is no consistent set of functional requirements for the Real World Internet

## Next steps

Work towards Valencia will focus on the synthesis of ideas from project part of the RWI community. Two working documents will be initiated, resulting in white papers that will be shared with the broader FIA community.

White paper: RWI reference model

- Development of a Common Terminology
- Architecture synthesis from results of different projects in the RWI community

White paper: RWI problem space and current solutions

- Define RWI research problem space
- Existing solutions coming from RWI community
- Solutions from related areas that are applicable to the problem space

## List of session participants

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