IoT-A Community Newsletter # 3

IoT-A, the European Lighthouse Integrated Project addressing the Internet-of-Things Architecture, proposes the creation of an architectural reference model together with the definition of an initial set of key building blocks. Together they are envisioned as crucial foundations for fostering a future Internet of Things. Using an experimental paradigm, IoT-A will combine top-down reasoning about architectural principles and design guidelines with simulation and prototyping to explore the technical consequences of architectural design choices. [www.iot-a.eu](http://www.iot-a.eu)

Deadline for input for Newsletter 4: January 25 2013.

In the past months we have had conversations with a number of external interested parties. In the January newsletter we will feature the discussion with Sandy Klausner from Cubicon.

Interested to follow up on any of these items?
Mail Rob van Kranenburg, Stakeholder Coordinator kranenbu@xs4all.nl

IoT-A wishes everybody a great Christmas and a super New Year!
State of the Deliverables
by Joachim W. Walewski

This column will report on a regular basis about deliverables published by IoT-A. The deliverables in each issue will be ordered by the responsible work packages, and a short summary together with a download link will be provided.

As promised in my previous column I am now taking the reader to the present. During the period September-December 2012 two deliverables were published: D5.3 and D1.4. I have some special message concerning D1.4 and will thus discuss it in another contribution (see Page 3).

Deliverable D5.3 is entitled “Secure and Privacy compliant interactions with IoT objects: Design and Evaluation ” and it “provides an analysis of the security features and the interoperability between devices, gateways, protocols and middleware developed in WP 5. With these results it is now possible to demonstrate the feasibility of security requirements prescribed by the ARM.”

IoT-A Unified Requirements are now available online!
by Mathieu Boussard

The IoT-A project has made its list of Unified Requirements available on its website, and that in an interactive and searchable format!

The Unified Requirements serve as both foundation and validation benchmark for the Architectural Reference Model (ARM), which is one of the major outputs of IoT-A. The requirements were provided by external stakeholders and project experts. The requirements work of the experts was guided by their domain expertise and thorough reviews of the state of the art.

In order to maximise the usability of our comprehensive requirements suite, we decided to make it available to the public through a web-based tool. The tool lets you explore the list of requirements and their mapping onto various ARM facets. The table is highly dynamic, with the possibility to perform a global search, as well as setting filters for each column. For example, one can perform a global search on the word ‘communication’ (search-all-columns box), or filter all requirements categorized with the tag privacy (“Category” column filter), or those which apply to the Management Functionality Group (“Functionality-Group” column filter).

Although we have put a lot of care in building this list based on many different sources we might have overseen some aspects. In that case please contact us at http://www.iot-a.eu/contact-info.

Deliverable 1.4 – We Want Your Input!

by Joachim W. Walewski

In mid November 2012, IoT-A published D1.4, “Converged architectural reference model for the IoT v2.0”, which constitutes the second public update of the initial IoT Architectural Reference Model (D1.2). This release makes major improvements available to the reader. Some of them are:

- Feedback received internally from IoT-A and externally from the stakeholders (after the dissemination event at the IoT Week 2012 in Venice), was used for improving the document;
- A major improvement of the Information View, which now also details information flows between the Functional Components of the Functional View for various technical use cases;
- A major overhaul of the Management Functionality Group, orienting it along established methodologies such as FCAPS. Nineteen new, literature-based requirements were added to the list of unified requirements in order to reflect this alignment.
- A re-organisation of the Design-Choices Section in order to improve its usability;

First “reverse mappings” of existing IoT architectures (ETSI M2M, EPCglobal, uCode) onto the IoT Reference Model.

Please have a look at this comprehensive document and let us know what you think! To that end we set up an online commenting tool, where you can comment on D1.4. The scope of such comments can comprise anything from slips in grammar to major change requests. Since we are putting a main emphasis on the usability of the IoT ARM for its next instalment, viz. D1.5, we especially encourage you to let us know, how we can improve the usability of the IoT ARM.

The online commenting tool can be found at http://oe160.iml.fraunhofer.de/iot-a/, and its use is very straightforward. Just input your comments at http://oe160.iml.fraunhofer.de/iot-a/projects/iot-a/issues/new. Notice that you do not need to set up an account in order to submit comments!

Please provide us with (in the pertinent fields of course)

- Tracker (choose “D1.4”);
- Short subject (if in doubt simply use the heading of the Section you are addressing);
- Description of the issue you see;
- Your name;
- Your organisation (company, university, …)
- Pertinent Section in D1.4 (leave empty if your comment applies to the document as a whole);
- Pertinent Page number in D1.4 (leave empty if your comment applies to the document as a whole);

If feasible: a change proposal.

All other fields can be left empty or unchanged. After submission of the comment the IoT-A team will address your contribution in a timely manner.

Please make your comments available by 15th January 2013!

Thank you for your help and enjoy your lecture of D1.4!
IoT4BPM business process modelling tool
by Sonja Meyer

In order to open the full potential of the IoT to enterprise applications, in IoT-A WP2 we aim at integrating the IoT with the monolithic architecture of BPM-based Enterprise Resource Planning systems. We concentrate on answering the question on how the IoT with its main building blocks fits in the conventional, traditional business-process environment, which focuses on human resources and services. The latter are modelled as steps in a predefined process flow. Within a BPM lifecycle, we focus on the initial design activity of representing an IoT-aware business process in an abstracted model. To that end we develop a business-process-modelling environment supporting the business-process-modelling notation BPMN 2.0. BMMN2.0 was identified as the most IoT suitable state-of-the-art modelling notation; even though it lacks features to comprehensively cover the IoT domain. In order to overcome this shortcoming, our IoT4BPM business-process-modelling tool (available at http://www.iot4bpm.de), implements the IoT-aware process-modelling concept, which was first presented in deliverable D2.2 in February 2012. This tool offers enhancements of BPMN 2.0 for closing the identified gaps in BPMN2.0. The enhanced process model comprises a graphical and a non-graphical XML representation, which is an initial step for progressing with further BPM life cycle phases such as the process resolution and execution. Our modelling environment aims at providing a detailed technical process model that serves as input for the IoT Service Resolution. The objective of the technical process model is the implementation of the technically described process elements by using a process execution engine as a central deployment component. Therefore, we consider the process model as a set of IoT-process and non-IoT-process tasks, including existing resolution and execution restrictions between these tasks. The target outcome of this development activity is to provide a prototype of a web-based process-modelling environment until May 2013 that allows users to create IoT-aware business-process models and to save those models to a central process repository.

The Delphi study on the Internet of Things
by Alexander Salinas

The Delphi study conducted for the socio-economic validation within the IoT-A project aims at projecting and evaluating future developments in the IoT area through a group of key IoT experts. The planning of the study was started in June 2012, and the first round was completed in mid August 2012. In the first round the participants were asked to provide answers to the following questions:

What social and economic development will take place, given the increasing proliferation of the IoT?
What challenges and issues related to the IoT must be overcome?
How will the IoT affect the retail industry regarding retailer business activities and consumer behaviour?

The results of the first round provide input for the second round, in which projections into the future according to the PEST (political/legal, economic, social, and technological structure) perspectives will be developed. In this second round, the experts will be asked to assess these projections by aid of various criteria (e.g., probability of occurrence). Afterwards, a statistical analysis will be performed to identify for which projections expert consensus was reached. In the cases where consensus could not be reached, a third round will be conducted. The final result will reveal which projections are likely to occur in the future.
DOWNLOAD ALL DOCUMENTS ABOUT IoT-A
ARCHITECTURE REFERENCE MODEL (ARM)
HERE www.iot-a.eu/arm

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