Private Public Partnership Project (PPP)
Large-scale Integrated Project (IP)

D.12.3.4: Report on Collaboration activities

Project acronym: FIWARE
Project full title: Future Internet Core Platform
Contract No.: 285248
Strategic Objective: FI.ICT-2011.1.7 Technology foundation: Future Internet Core Platform
Project Document Number: ICT-2011-FI-285248-WP12-D.12.3.4
Project Document Date: 2015-04-26
Deliverable Type and Security: Public
Author: FIWARE Consortium
Contributors: FIWARE Consortium

1.1 Executive Summary

This document provides insights on the Collaboration activities that have been developed by the FIWARE project in the last period (basically along 2014). For the convenience of the reader we have included previously reported collaboration activities in Section 9, therefore allowing the users of this document to understand the baseline of these activities. Readers should take into consideration two aspects: (1) this document includes only collaboration activities and does not refer to communication, marketing or dissemination activities, which have been included in *D12.2.6 Report on Communication and Dissemination activities* (even though many times frontiers are blurred and many of the actions performed by the consortium could be classified in a different way), and (2) the nature of the Future Internet Programme has varied along the three implementation phases, therefore, collaboration activities have adapted to the new context giving as a result a different approach depending on the cycle.

Collaboration, because of its intimate relationship with other tasks in the dissemination and collaboration area has been fed by those ones and has been executed in full coordination with them. For the sake of understanding, an activity is considered here as “collaboration activity” if it is executed in combination with other actors, initiatives or projects. Since the Future Internet Programme is based on the interactions between all its projects we may argue that everything is a collaboration activity. Yes, indeed. For the particular case of FIWARE, collaboration at technical level is addressed in other technical documents, even though this area supports -if needed- the establishment of the relationships.

While FIWARE applied a diversified collaboration strategy in the beginning, establishing relationships with lots of projects and initiatives, the advent of new phases in the programme has given maturity to the action plan, **leading to a more focused approach.** The attitude of FIWARE is still and will be fully open, but actions are now driven by **more concrete objectives and expectations**. Since the community has grown enormously we could report hundreds of pages on channels established with different actors or discussions initiated with other projects. However, we feel that reporting each action does not add value at this stage (Section 9 of this deliverable shows the opposite direction, providing many details, but the project was still finding its way and was involved in an explosion of opportunities). Despite that, readers who may want to access those details can contact us, since agendas, minutes, and material associated to many of these actions is available anyway).

Following that rational, this document reports specifically on the activities developed in the following areas:

- Collaboration within the Future Internet programme
- Collaboration with other projects, focusing on the relationships with the IoT cluster/IERC
- Collaboration with other Future Internet and data initiatives, Member States and the European Commission
- Activities on Smart Cities
- Collaboration with ICT Labs

After the reporting of the activities, the deliverable provides a section with a self-assessment, analyzing the outcomes that have been achieved and pointing out the areas where further or different work is needed. This should be considered as recommendations to the next cycle of collaboration activities (already integrated into the FI-Core work plan).

1.2 About This Document

FIWARE collaboration activities aim to create a cooperation environment where more ambitious objectives can be achieved thanks to the alliance with other actors, projects, programmes or initiatives. The basic rule for collaboration is respect for the other counterpart, acknowledging that all parties are needed to achieve the goals. This document identifies major areas for collaboration, describes the actions that have been implemented and provides a view on the achievements resulting from them.

1.3 Intended Audience

The document targets in general anyone that is interested in FIWARE and in particular those parties that want to understand the strategy of alliances and partnerships behind FIWARE.

1.4 Typographical Conventions

Starting with October 2012 the FIWARE project improved the quality and streamlined the submission process for deliverables, generated out of the public and private FIWARE wiki. The project is currently working on the migration of as many deliverables as possible towards the new system. Part of this document is rendered with semi-automatic scripts out of a MediaWiki system operated by the FIWARE consortium.

1.5 Acknowledgements

Partners that contributed to this deliverable and projects that have created the playground to make some of the collaborations possible.

1.6 Keyword list

FIWARE, EIP, PPP, Steering Board, Roadmap, Reference Architecture, Generic Enabler, Open Specifications, ICT, IoT, Es.Internet, Campus Party, Dissemination, Communication, Hackathon, Developers, Smart Cities, Developers, Users, Customers, Infrastructures, Open Data, Foundation, ICT Labs, Standards, Incubators, Training, Education, Entrepreneurship.

1.7 Changes History

Release	Major changes description	Date	Editor
V0.7	First draft of deliverable with update on collaboration activities	2015-02-15	ATOS
V0.8	Add-ons by partners	2015-04-20	ALL
V0.9	Edition and integration of additional inputs	2015-04-24	ATOS
V1.0	Final edition	2015-04-26	TID

1.8 Table of Content

1.1 Executive Summary 2
1.2 About This Document 3
1.3 Intended Audience 3
1.4 Typographical Conventions 3
1.5 Acknowledgements 3
1.6 Keyword list 3
1.7 Changes History 4
1.8 Table of Content 4
2 Collaboration within the Future Internet Programme 6
2.1 FIA Athens, March 2014 9
2.2 CEBIT, Hannover; March 2014 10
2.3 First European Conference on the Future Internet (ECFI Brussels), April 2014 11
2.4 FIWARE Event with Chambers of Commerce, Brussels; June 2014 12
2.5 Second European Conference on the Future Internet (ECFI Munich), September 2014 13
2.6 ICT Proposers Day, Florence; October 2014 14
2.7 FIWARE Multi-site event (Sevilla-Valencia-Las Palmas); October 2014 14
2.8 Smart City Expo, Barcelona; November 2014 15
3 Collaboration with other projects and initiatives 17
3.1 Collaboration in the IoT domain (IERC cluster) 18
3.1.1 The Open Platforms Portal 19
4 Collaboration with initiatives on Future Internet and Data, including connections with Member States and adoption by the EC 20
4.1 Collaboration with Member States 20
4.2 Take-up and adoption by the European Commission 20
4.3 Standards, Open Data and Infrastructures 21
5 Smart Cities: cornerstone of FIWARE adoption 23
6 ICT Labs: long term collaboration for education, training and entrepreneurship 24
7 Conclusions and recommendations for the next collaboration cycle (self-assessment) 25
8 Previously reported Collaboration activities 28
8.1 Collaboration Activities in 2013 28
8.1.1 Safecity real-life trial in Madrid, relying on FIWARE enablers & testbed 28

8.1.2 The FI-PPP projects exhibition at MWC-2013 29
8.1.3 The FI-PPP event & exhibition in Barcelona 30
8.1.4 The FI-PPP Software Architects Week 32
8.1.5 Collaboration on joint exhibitions with OutSmart project 33
8.1.6 Dublin FIA FIWARE Workshops & Demos 34
8.1.7 Kicking off Collaboration with the IERC 36
8.1.8 Meeting with IERC during IoT Week in Helsinki 37
8.1.9 FI-PPP Architecture Board Meetings 38
8.2 Previous Collaboration Activities 38
8.2.1 Collaboration with projects under the FI PPP umbrella 38
8.2.2 Collaboration with other ICT projects and Initiatives 49
8.2.3 Joint efforts between Future Internet Initiatives at National and International Level 62

2 Collaboration within the Future Internet Programme

The Future Internet programme was conceived as a tool or mechanism to fight against the lack of competitiveness –or at least, a decrease of competitive position with respect to other economies- of many EU industries. It was easy to notice that many sectors were already investing in ICT to migrate to the cloud or take advantage of the Internet of Things, to name a couple of trends. As a consequence, many companies in the private sector, representatives of Academia and the European Commission proposed the setting up of an open platform that could provide major common building blocks at technological level for all these industries. The benefits were clear: on the one hand the open nature of the platform (including its specifications) would make all this technology available to many companies (not only the ones with financial means), contributing to the modernization of many traditional industries; on the other hand, EU companies would not need to invest so many times in developing the same technologies reinventing the wheel for each sector (for ex. IoT solutions for energy, IoT solutions for smart cities or smart manufacturing). The common building blocks would be available for all of them (following the principle of reusability) and they would need to focus on satisfying the needs and requirements specific to their sector. The success of the described approach was very dependent on the good collaboration between the different projects. The central piece of this puzzle was FIWARE, the project in charge of implementing the Open Platform.
Collaboration in the initial phases of the programme addressed mainly the needs of the use cases. Gathering requirements, incorporating those ones into the specifications (and implementation) of the FIWARE Generic Enablers, providing beta versions of such GE to validate them in trials…all these aspects were the focus in the first years. In 2014 some changes have happened as a result of the launch of the Phase 3 of the programme, where completely different actors have entered the playground. Collaboration activities have adapted to this new context. In this section we briefly describe main activities that have been carried out by FIWARE in collaboration with the other projects of the programme in the last period of the project:

First part of the year -still focused on Use Case projects and the support of CONCORD- was characterized by many meetings for coordination purposes, including technical exchanges with use cases for the sake of alignment in the adoption of FIWARE technologies within their trials. As soon as the FIWARE acceleration programme was launched, the focus was biased towards supporting accelerators in their goal of attracting SMEs, start-ups and developers. Therefore, many coordination activities became supporting activities at technical level (organization of developer's weeks, hackathons, FIWARE training sessions, etc.) and a wide umbrella of dissemination and promotion activities, including joint collaboration in elaboration of marketing material, social networks strategy, joint organization of events, coordinated attendance to relevant conferences and a huge presence of FIWARE representatives in continuous events along the year (information days organized by EU or national institutions, information days organized by companies involved in the programme, events organized by accelerators for the promotion of their open calls, etc.). In the last months of the year FIWARE representatives have also met some coordinators of use case projects to address a different topic, that of sustainability not only of the FIWARE technology, but also of the sectorial platforms developed

by those projects. The main goal is the exploitation of synergies related to the FIWARE Foundation and some of the initiatives pushed forward by the projects (in some cases leading also to foundations, as it is the case of the FI-SPACE project). These discussions are still in progress, with the particular achievement of the creation of specific concepts in FIWARE that will allow SE to play a role in the FIWARE catalogue so that these technologies are available to users interested in developing apps in the particular context of those domains.

Of particular relevance is the cooperation of all projects towards a common branding. Different brands (all of them under the label FIWARE) have been created to refer to the different concepts: FIWARE as technology/Open Platform; FIWARE Lab, as the experimentation environment/ecosystem where users can play and test FIWARE GE accessing them as a service and getting access to datasets; FIWARE Ops, as the tools that allow the operation of the infrastructure for FIWARE providers and finally FIWARE Mundus, as the label for International activities (where important achievements have happened specifically in Mexico, Chile and Brazil, as documented in http://www.fiware.org/mundus/).
This kind of cooperation has also been brought to the accelerators activity, ending up in the specific name of FIWARE Acceleration Programme to refer to the Third phase of the Future Internet PPP. Further information on branding can be found in *D.12.2.6 Report on Communication and Dissemination activities*.

In order to illustrate these activities, we provide below a summary of the actions and areas where collaboration within the Future Internet PPP has happened in the last period.

- Coordination of the overall programme execution: exchange of information and coordination of activities, including timelines, has been implemented through the various mechanisms defined at programme level, such as Steering Board, Architecture Board and working groups (managed by CONCORD) to address topics of general interest such as overall programme promotion and dissemination, definition of business models, SMEs, and policy and regulation, among others. FIWARE has attended meetings and teleconferences and has contributed to the common vision and the related documents. FIWARE has also supported when needed and applicable the activity of two additional programme boards, the so called Executive Industry Board, composed by high level representatives of the industrial side of the PPP and the External Advisory Board. Some examples are (the complete list can be accessed through the CONCORD project; please, ask us for additional information if you are interested in agendas and minutes of those meetings).
    - Steering Board meeting, January 2014 (Heidelberg)
    - Steering Board meeting, February 2014 (virtual)
    - Steering Board meeting, April 2014 (Brussels)
    - Steering Board meeting, May 2014 (virtual)
    - Steering Board meeting, June 2014 (Helsinki)
    - Steering Board meeting, July 2014 (virtual)
    - Steering Board meeting, September 2014 (Munich)

  - Steering Board meeting, October 2014 (virtual)
  - Steering Board meeting, November 2014 (Berlin)
  - Advisory Board meeting, November 2014 (Berlin)
- Coordination with XIFI has been especially tight in this period because of their critical role in the programme as infrastructure provider. XIFI has set up a European network of federated FIWARE nodes through which users can access FIWARE GE. From a technical point of view FIWARE and XIFI have worked as a single project for the purpose of extending FIWARE Lab capabilities. It is not by chance that both projects have converged into a new one called FI-Core (be aware that this name is only used for administrative purposes and the FIWARE label should still be used here).
- Coordination meetings with Accelerators, which focus specifically on the relationship between FIWARE and the accelerators (besides steering committees, where coordinators of the A16 group are also invited). Some meetings took place along 2014 (Barcelona, Berlin, Coimbra). Main discussions held in those ones had to do with the selection of tools to enable communication across all actors (this has led to the use of Basecamp as collaborative platform for the programme), cooperation and synchronization of events, design of needs in terms of marketing (both material and channels), Q&A sessions on FIWARE in order to better support SME and start-ups that apply to the programme, etc. The general information of the FIWARE Acceleration programme can be found on the FIWARE website as a result of these discussions. Basic information on each of the accelerators, opening dates and deadlines of each of the open calls and associated links add to the list of new information that FIWARE users can now access through a single point.
- Collaboration with Support Actions has also been initiated with very promising prospects because of the clear definition of roles and expectations from all the players.
  - FI-LINKS: FIWARE and FI-LINKS work together with the aim of *going global* or *going International*. FI-LINKS provides support to FIWARE by identifying those areas with potential opportunities for FIWARE take up and adoption and giving on-site support when some delegations are needed in different regions outside the EU. It is therefore fully integrated into the overall FIWARE strategy.
  - FI-Business: provides the selected FIWARE Accelerator companies support services, free of charge, through a system of vouchers. Once they have consumed their vouchers they can still receive one-to-one coaching by paying a fee. Services are both online and physical and vary depending on the stage of the companies (since early and advanced stage SMEs and start-ups have different needs), including, among others: bootcamps, webinars, e-pitches, investment forums, 1 to 1 consulting, business recognition workshops and matchmaking with ecosystems. All these services are accessible through the FIWARE portal[1]. Therefore, they do not appear as the focus of a single project, but as additional services of the overall FIWARE value proposition.
  - FI-IMPACT is in charge of providing statistics about the accelerator programme and link that to the market. The information is especially useful on the one hand

[1] http://www.fiware.org/fi-business/

to give transparency to the programme and its actors, and on the other hand as dissemination/marketing tool, since it brings together a lot of data that can be used to support decisions (for example, we can get an idea of the most promising areas to build Apps using FIWARE technologies thanks to the submissions to the different accelerators that are clustered around thematic areas). Other examples will follow.

- I3H has a major role in expansion of the overall FIWARE ecosystem. Its objective is creating a network of Internet Innovation Hubs that will foster the use of FIWARE. It will be –as it happens with accelerators- an intermediary or point of contact between FIWARE and the base of users (SMEs, start-ups, developers). Its relationship with ICT Labs (coordinator of the activity) ensures the convergence of activities related to education, entrepreneurship and research/innovation. Further information can be found in the section of this document devoted to the collaboration with ICT Labs.

Finally, 2014 has been a very intense year in terms of promotion, marketing and dissemination. This can be easily seen when going through *D12.2.6 Report on Communication and Dissemination activities*. FIWARE representatives have travelled around Europe (and beyond) creating awareness about FIWARE and the availability of FIWARE Lab, convincing developers about the added value of developing their Apps using FIWARE an giving support to accelerators. A summarized list of events organized by accelerators can be accessed through the aforementioned deliverable. Of special importance has been the organization of several FIWARE Developers Weeks and training sessions as well as hackathons; some of them have happened in the context of European or American editions of Campus Party; all this information can be seen in the related deliverables and through the FIWARE website. In most cases FIWARE worked in a tight way with the other projects of the programme (to attract participants, to award prices, to support the participating teams, to maximize impact…).

Despite the long list of activities depicted so far, we want to pay some attention here to some events that have required a special collaboration among all the projects, leading in general to the setup of an Organizing Committee with members from the different initiatives. Their successful implementation can be considered good example of the collaboration spirit that *–in FIWARE's view-* has been established in the programme.

As it can be seen, the number of events is very high, meaning that the project has mobilized an important amount of people on a continuous basis for this particular responsibility.

2.1 FIA Athens, March 2014

Official website: https://www.fi-athens.eu/
Brief description of the event: The Future Internet event is an event organized in the context of Research & Development activities funded by the EC. The audience is therefore composed of

researchers, developers and companies involved in innovation. From the thematic point of view, FIA agglutinates different research areas such as cloud, software and services, Future Internet research experimentation and Internet of things. It also tackles concrete application domains, but always in relation to the use they make of the aforementioned technologies. Statistics of the 2014 edition are: 768 delegates, 48 booths & 45 posters, 27 hours of live streaming, 314 on-line viewers & 587 IPv6 addresses used.

FIWARE role and collaboration in the event: FIWARE was very visible in this event thanks to its presence in the exhibition area (demos, videos, marketing material) and several sessions. However, main collaboration was as proposer and moderator of the Future Internet PPP session, which counted on representatives of the projects XIFI, INFINITY, cities like Trento or institutions like ICT Labs.

FIWARE booth and Future Internet panel @FIA Athens, moderated by FIWARE

2.2 CEBIT, Hannover; March 2014

Official website: http://www.cebit.de/home

Brief description of the event: CEBIT is the world's largest and most international IT expo held annually in Hannover. It is an event of industrial nature.
FIWARE role and collaboration in the event: main goal was to present FIWARE as a “product”, i.e. a ready to use solution and not the result of an innovation activity. Together with FI-Content we held a full day conference and exhibition around the theme Future Internet PPP: Open Platforms for Entrepreneurs in Europe. There were a good number of talks based on FIWARE and the enablers provided by FI-CONTENT accompanied by demos. Full details on the talks, presenters and pictures can be found in http://www.fiware.org/2014/03/15/FIWARE-fi-content-at-cebit-2014/.

2.3 First European Conference on the Future Internet (ECFI Brussels), April 2014

Official website: http://www.ecfi.eu/brussels2014/

Brief description of the event: ECFI is the name of the Conference organized every 6 months by the Future Internet Programme. This was the first edition and was focused on attracting the attention of the policy makers and *stakeholders of Brussels*. Its main aim was creating awareness, impact and visibility in this community without ignoring the possibility of interacting with SMEs and future users of the technology that would have in this event one of the unique opportunities to see all the outcomes of the programme including many live demos.
FIWARE role and collaboration in the event: FIWARE worked for several months with representatives of all the other projects to set up the complete event (logistics, infrastructure, demos, programme). FIWARE had a booth with support from project representatives and marketing material and was responsible for the Parallel session: “Open APIs and Open Minds: Success stories of today, opportunities for tomorrow”, with representatives from XIFI, the city of Trento and three start-ups that showed the way FIWARE had been used to build their business.

Speakers of the session "Open APIs and Open Minds: Success stories of today, opportunities for tomorrow", where three start-ups shared their experience in using FIWARE!

2.4 FIWARE Event with Chambers of Commerce, Brussels; June 2014

Brief description of the event: Event organized by FIWARE and specifically by the Chamber of Commerce to increase the political relevance of FIWARE towards Chambers of Commerce and Committee of the Regions, where it was held. This was an important appointment for the FIWARE team because it was one of the first times to test the acceptance of the solutions outside the RTD community. This event was used as multiplier to reach regions where not so much dissemination had been done so far.

FIWARE role and collaboration in the event: main organizer; FIWARE invited representatives of two industrial cases (the FINESCE project for energy and FI-CONTENT for creative industries), two start-ups already using FIWARE to build their apps and some high level political speakers. Details on the agenda follow.

Agenda

Welcome & intro speeches 9:00-9:30

Daniel Janssens
Secretary General
Committee of the Regions

Javier Carretero
General Manager.
CSC, Chamber of Spain

Ilkka Lakaniemi
Chairman of the FI-PPP. Vice-President of Digitalization and Renewal
Finland Chamber of Commerce

Zoran Stančič
Spreading innovation across Europe: the case of the Future Internet PPP
Deputy Director General. DG Connect.
European Commission

FI-WARE
Open Data for Open Minds

Conference "The Future Internet:
A European initiative turned into real products." 9:30-10:00

Benjamin Southworth
Technology Evangelist, Community Builder, & Developer

Future Internet showcase 10:00 – 11:00

FoodLoop
Avoiding unnecessary food waste
Christoph Müller-Dechent
Founder &CEO - FoodLoop GmbH

FI-Guardian
Smart Monitor for Adverse Events
Marcos Marconi
Project Manager- VM9

FI-CONTENT
Open platforms in Social Connected TV,
Smart City services, Pervasive Games
Pieter Van Der Linden
Technicolor

Coffee break 11:00-11:30

Open Data for Open Minds 11:30 - 12:00

Trento Municipality (tbc)

FI-WARE

Round table. "Building opportunities" 12:00 - 12:45

Participants:

Juanjo Hierro
FI-WARE Chief Architect
Telefónica I+D

Ilkka Lakaniemi
Chairman of the FI-PPP. Vice-President of Digitalization and Renewal
Finland Chamber of Commerce

Peter Fatelnig
Deputy Head of Unit – Net Innovation
European Commission – DG CNECT

Q&A and Closing Remarks 12:45 - 13:00

Carl-Christian Buhr
Member of the Cabinet of Ms Neelie Kroes
European Commission

Cocktail – Networking 13:00 - 13:30

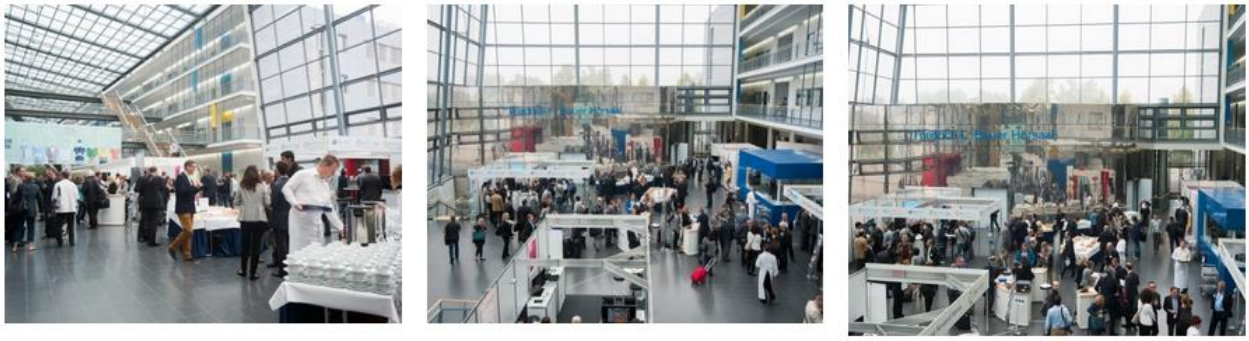
Agenda of the FIWARE event for Chambers of Commerce and Committee of the Regions

2.5 Second European Conference on the Future Internet (ECFI Munich), September 2014

Official website: http://www.ecfi.eu/munich2014/

Brief description of the event: this edition of ECFI was the grand opening of the FIWARE Accelerator Programme. Therefore, it was the first time we were sharing with public audience the plans of the 16 Accelerator projects to release 80 Meuro among SMEs, start-ups and web developers eager to use FIWARE technologies. The format was a conference plus an exhibition area with continuous activities (including parallel pitches in different stages) and a techno-brunch on the second day focused on smart manufacturing and car industry (taking advantage of the premises and contact with BMW).

FIWARE role and collaboration in the event: through an official representative in the organizing committee plus the involvement of the Press Office FIWARE contributed to the overall organization of the event. On site, FIWARE had an official speech in the conference programme, as well as interventions in parallel sessions and a relevant exhibition area with numerous demos. Many interactions happened not only with use cases, but also with accelerators, who were represented there through their own area and had the opportunity to interact with the Future Internet community and first potential applicants to their open calls.



A view on the exhibition area of ECFI Munich

2.6 ICT Proposers Day, Florence; October 2014

Official website: https://ec.europa.eu/digital-agenda/events/cf/ictpd14/item-display.cfm?id=12615

Brief description of the event: event organized by the EC around ICT with thousands of attendees and therefore relevant from the view point of creating awareness and reach a wide potential audience; One of the goals of the event was the presentation of the topics open for 2015 in WP2014-15. This included the Accelerator programme and the Net Futures Unit organized a session where interested parties could listen to the added value and status of FIWARE as well as the details on the Open Calls of the accelerators related to Open Data, Smart Cities, Energy, Agrifood, Internet Mobile Content and manufacturing. There was a Q&A session and opportunities for networking.
FIWARE role and collaboration in the event: interaction with accelerators and presentation of the achievements of the FIWARE project till then, including an overview of main USP to encourage companies to test the technology.

2.7 FIWARE Multi-site event (Sevilla-Valencia-Las Palmas); October 2014

Official website: http://www.fiware.org/multisiteevent/

Brief description of the event: national event organized by FIWARE, the Ministry of Industry Minetur and the Spanish platform on Future Internet Es.Internet to show the potential of the FIWARE platform for Smart Cities and industrial processes. The event was held at the same time in three sites (that's why that name was selected): Seville, Las Palmas and Valencia.

During those days, participants were informed about the necessary requirements to access open calls and could attend conferences and showcases to witness FIWARE's potential and discover the different funding possibilities. The event counted on the support and physical presence of high-level politicians, including the mayors of the aforementioned cities, who committed their cities to use FIWARE.
FIWARE role and collaboration in the event: main organizer, speech at the official conference programme, technical support to developers. FIWARE held the final round of FIWARE challenges (both Smart Society and FIWARE Excellence challenges) for developers in there. Representatives of most accelerators were invited to present their calls and provide support to applicants, as well as projects like XIFI.

2.8 Smart City Expo, Barcelona; November 2014

Official website: http://www.smartcityexpo.com/

Brief description of the event: key meeting point for experts and leaders of the world's most innovative cities, companies, research centres, universities and international organisations. Event of industrial nature.
FIWARE role and collaboration in the event: preparations of FIWARE for this event were carried out in a jointly manner with other projects of the programme, including many start-ups participating to the accelerator programme, the accelerators as such as well as use case projects and other initiatives interested in the domain of smart cities, thus, following the successful collaboration that FIWARE and XIFI had already started in the previous edition of Smart City Expo.
Participants had the opportunity to see FIWARE show how its technology paves the way to innovation and helps a Smart Cities vision materialise. Several workshops were run at the FIWARE stand:

"What can FIWARE do for your city?" on 19th November, 16:00-17:30 and 20th November, 11:30-14:00

"How can your Smart City application benefit from the FIWARE ecosystem?" on 19th November, 12:00-13:00 and 20th November, 11:00-12:00

There were also demos showing the potential and utility of FIWARE, as well as interesting Speeches:

"FIWARE: transforming cities into ICT enablers based on open data/APIs and the connection to the Internet of Things" by Juanjo Hierro on 18th November, 12:15

"Opportunities for cities to build FIWARE-based infrastructures connected to FIWARE Lab" by Maurizio Cecchi on 20th November, 11:15

A FIWARE Technical Bootcamp, co-organised by FIWARE, the IMPACT FIWARE Accelerator Project and the City of Barcelona, took take place on 18th-19th November, 16:00-19:00 at ISDI (Carrer Diputació 37).
More detailed information on the FIWARE activities at Smart City Expo can be seen in http://www.fiware.org/scewc/.

Outbarriers

Winners of the FIWARE Smart Society Challenge, Outbarriers has created an app that helps blind people to move safely around a city, allowing them to avoid obstacles thanks to the use of beacons. During Smart City Expo they will do a demonstration in our stand and you will be able to test the technology yourself!

Smartaxi

Winners at the FIWARE Smart Business Challenge. The app that helps taxi drivers find you! Not the other way around! With Smartaxi taxi drivers collect and pool information on the "hot spots" for pick ups, meaning you spend less time waiting for one to arrive and taxi drivers spend less time driving endlessly around the city.

Adevice

Adevice is the pilot project that allows parameters such as levels of chlorine, PH or air speed to be measured at public fountains. The data can then be consulted and will assure the control of the good state and healthy standards of these facilities. This pilot system is already installed and providing information at the fountain of Seville's Plaza España.

EsAccesible app

EsAccesible participated in the FIWARE Smart Society Challenges with and app for phones and tablets that allows users to rate and share the accessibility of places (bars, restaurants, hotels, parking, etc.) for people with reduced mobility. Through this collaboration a global map of accessibility is built with the places users add to this application.

Virtual Oulu

Live a novel Smart city experience with Virtual Oulu, a 3D virtual reality demonstration where you wear Oculus Rift headset that flies over a 3D model of the Finnish city of Oulu.

Citizen as a Sensor

Citizen as a Sensor enables citizens to make data that is measured from their Android phones publicly available. Data on temperature, humidity, light, position... is shared on FIWARE Lab and can be monitored and analyzed for the creation of Smart City Apps.

Some of the demos showed at the Smart City Expo World Congress 2014

3 Collaboration with other projects and initiatives

FIWARE has identified a set of projects and initiatives outside the Future Internet umbrella where collaboration would be especially desirable and has prioritized actions towards them.
While there could be synergies with lots of projects in different areas (FIWARE tackles technical chapters like cloud, IoT, networks, interfaces, data management, etc) resources are not unlimited, and therefore, a subset of those opportunities has been selected as core areas for such collaboration:

- Because of the relevance of IoT in the overall FIWARE architecture (partly driven because of its crucial role in the domain of smart cities), a task force has been created to work with the IoT cluster/IERC. Main aim was creating awareness and coherence in efforts carried out by the IoT community and exploitation of synergies in standardization strategies, identification of innovative features and adoption of existing developments.
- Projects and initiatives in the domain of Smart Cities. FIWARE has not neglected the relevance of other industrial domains in terms of take up and adoption, but the opportunity of bringing FIWARE as de facto standard for smart cities has emerged so visibly that most actions have been directed towards this field. Check the section on smart cities for further clarification.

FIWARE has led the door open to other potential opportunities and has taken advantage whenever possible to introduce FIWARE to other players, such as other R&D areas of DG Connect where opportunities could happen either through contributions to FIWARE (enriching the existing ecosystem) or through adoption of what is already available. Concrete examples are:

- Discussions with the Cyber Physical Systems (CPS) unit, where more industrial deployment environments could be explored (ex. Manufacturing) and where there is a technology intersection (IoT). Further discussions with initiatives like ECSEL will be explored, even though it seems premature because of the reluctance of some of the industries of such sectors to base their solutions on cloud infrastructures.
- Ongoing discussions with Connecting Europe Facility (CEF). They are in very preliminary stage and the need is now to go deeper into technical details to understand the feasibility of –for example- bringing some FIWARE components as part of the CEF service offering.

This has been complemented with more general presentations made to many EC officials for the sake of awareness that have led in some cases to the materialization of the aforementioned discussions.

FIWARE has decreased efforts in following up many particular projects where FIWARE was mentioned (including those where partners are involved), as well as initiatives like European Technology Platforms and Eureka clusters[2], which were particularly interesting in the beginning to become known at EU level. Collaboration has still happened (and is ongoing), but basically

[2] This covers discussions with Net!World and the 5G PPP, NESSI, Big Data Value Association, NEM, ITEA and especially the CELTIC cluster, the OISPG

consists on maximizing the use of their communication channels (for example, open calls, hackathons and events have been widely promoted through their webpages, newsletters, mailings…).

3.1 Collaboration in the IoT domain (IERC cluster)

IERC stands for European Research Cluster on the Internet of Things (http://www.internet-of-things-research.eu/). IERC focuses on the convergence and coordination of initiatives that deal with IoT addressing both research aspects but also the adoption of the technology and its potential impact. Major contributors to the initiative are projects funded by the EC on this particular topic. The portal provides access to a wide knowledge base that includes technical papers, events and news. More important than the content in itself is the dynamicity of the community, which has been growing in the last years and is well recognized in the area, because of its active organization of events and creation of synergies between projects. Collaboration with this cluster started early in the project because of the obvious weight of the IoT chapter within the overall FIWARE architecture. The motivation from the two sides was clear: FIWARE could get access to innovative enablers and assets being developed by other projects that could be part of the platform in the future, enriching the sets of functionalities and could promote its own developments within the community, while projects in IERC could get a channel for take up and adoption of their results and get advantage of work already done by FIWARE. Furthermore, the cost of not collaborating could be higher, leading to lack of coordination in support for standards and misuse of public funds by developing the same building blocks more than once (without a real purpose to do so, since sometimes this can be an interest to test the market) and keeping gaps in IoT architectures.

In theory complementarities are evident. FIWARE brings a very industrial-oriented ecosystem, with big IT companies and Telecom operators interested in pushing forward IoT solutions in different sectors and interested in developing the necessary efforts to set up an environment characterized by open standards and open source solutions. This could open huge commercial opportunities to smaller players too, and IERC has many of them. Nevertheless, outcomes so far have not been so successful and, even if some efforts and a lot of willingness have been put, the rhythm of collaboration has been slow with respect to initial expectations.

One of the reasons is the lack of alignment in terms of readiness to go to market: while FIWARE is very close to the market, many of the developments in the IoT cluster seem to be at a very research-oriented level.

The framework in which this collaboration has taken place needs to be revised in future phases with the aim of defining more clear expectations in quantitative and qualitative terms and a path that can be assessed at different milestones in order to take corrective measures if needed.

This preliminary assessment does not at all mean that nothing has been achieved, and therefore we expose here some of those achievements:

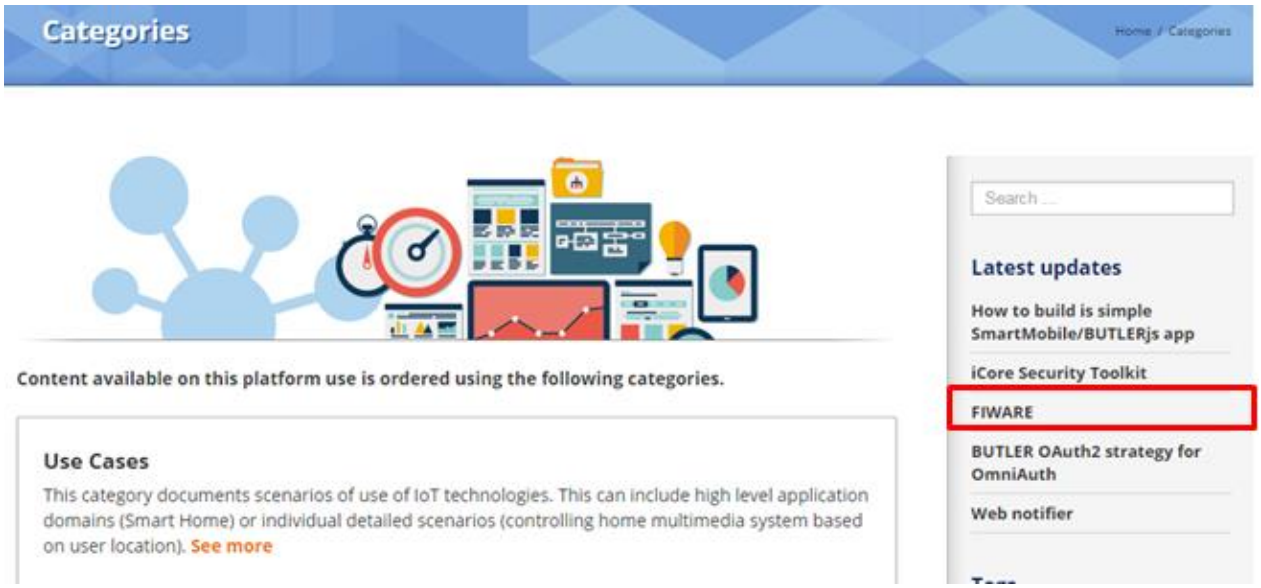
1. Awareness of existing developments/projects, approaches and architectures: representatives of IERC and FIWARE have met in several occasions: presentations in joint events, ad-hoc meetings, etc. have been scheduled for this purpose (this activity

has been running on a continuous basis, including different editions of the Future Internet Assembly, forthcoming Net Futures event, IoT weeks, ECFI events, etc).

2. Cross-references between the communities. FIWARE references IERC and the Open Platforms portal and similarly those websites provide now information on FIWARE, opening communications to the whole IoT community in a more integrated manner. Context broker has been used as a candidate integration point. See further details on this in the next section.
3. One of the most important achievements is the inclusion of FIWARE as reference open platform for future projects, as stated in WP 2014-15 (specifically topic ICT-30, where the EC encourages consortia to reuse existing developments, foster their adoption and integration with other platforms/components/enablers. In order to support the IoT community, FIWARE representatives have actively participated to Information Days and have supported interested parties through its Help Desk.

3.1.1 The Open Platforms Portal

The Open Platform portal (http://open-platforms.eu/) provides an entry point to X, W, Z. FIWARE is now one of the contributing projects; users of the portal can now get direct access to major capabilities of FIWARE and links where they can find more information and support, including the FIWARE catalogue and the FIWARE Lab ecosystem. Some Generic Enablers are proposed as initial steps for developers: Orion, Cosmos, Wirecloud, Kurento, Idas, Keyrock and Access Control.



FIWARE is part of the Open Platform Portal

4 Collaboration with initiatives on Future Internet and Data, including connections with Member States and adoption by the EC

4.1 Collaboration with Member States

FIWARE has been especially active in 2014 in supporting dissemination at national level in order to create awareness in different member states. One of the drivers of these activities has been the participation in several FIF[3] meetings, creating high expectations in NCPs, who have come to FIWARE periodically to request speakers for national information days. Besides the obvious increased awareness about FIWARE one of the achievements has been the introduction of FIWARE as reference in some National Funding Programmes.

(1) Spain: Plan Nacional de I+D published by Minetur
(2) Germany: "Smart Service Welt" (Smart Service World), a programme with a 50 million Euro budget[4].
(3) Austria: "IKT der Zukunft" (ICT of the Future), this is the 3rd call of this programme and it has a budget of 8.75 million Euro[5].

Presence of FIWARE has been guaranteed (in some cases several times) in many countries, including Spain, France, Italy, Germany, Austria, The Netherlands, Switzerland, Portugal, Finland, Turkey and Azerbaijan, among others. See complete list of events in D12.2.6.
In the particular case of Spain, impact has been maximized thanks to a very tight collaboration with the Ministry of industry and CDTI (dependent on the former one), to less extent with the Ministry of Education and the National Platform on Future Internet Es.Internet, where major stakeholders of FIWARE are involved (Telefonica holds the Presidency, while Atos, Indra and Polytechnic University of Madrid hold the three Vice-Presidencies). The success of this cooperation leads us to recommend the reinforcement of relationships with similar initiatives in other countries. Regional initiatives have also proved to be extremely useful in reaching local communities.

4.2 Take-up and adoption by the European Commission

This title may sound a bit provocative, but the fact that FIWARE is funded by the EC -and specifically by DG CONNECT -does not imply that its outcomes are immediately accepted by the

[3] FIF stands for Future Internet Forum. FIWARE was speaker at the FIF meeting organized by the EC in the context of FIA Athens (March 2014) as well as the ad-hoc meeting of "National Funding Agencies with the FI PPP on the use of FIWARE on National Programmes" held at Berlaymont in July 2014
[4] http://www.bmwi.de/DE/Themen/Digitale-Welt/Internet-der-Zukunft/smart-service-welt.html
http://www.bmwi.de/DE/Mediathek/publikationen,did=664530.html
[5] https://www.ffg.at/iktderzukunft_call2014
https://www.ffg.at/sites/default/files/programm_iktderzukunft_va_20141020_final.pdf

EC. We could even say that barriers are as high (if not higher) in this case as in environments that have not been at all involved in FIWARE development. As a result, FIWARE has devoted relevant effort in 2014 to the interaction with EC representatives working in areas different than the unit where the FI PPP is managed. Some of meetings and activities carried out in this context are summarized here:

- "FI-PPP–An innovation ecosystem in the making", seminar organized by the EC in September 2014 to create awareness about FIWARE and promote its adoption in other units
- FIWARE presentations at EC Information days of topics that are intimately linked to the FIWARE technical chapters, such as IoT. FIWARE appears as reference in the description of the topic ICT-30 (IoT) of the WP2014-15 and therefore FIWARE representatives have provided information to potential applicants to that call, trying to encourage convergence with the FIWARE approach[6].
- Meetings with representatives of technical or sectorial areas in DG Connect that have expressed interest in FIWARE: the Smart Cities and Communities EIP, Unit on Cyber Physical Systems, people responsible for Europeana, etc.

4.3 Standards, Open Data and Infrastructures

FIWARE has worked in a very intense way with XIFI, since this year the accelerator programme has been launched and the FIWARE Lab (extended) infrastructure was a critical aspect of the success of the programme. Interactions have also happened with the FIRE cluster in order to explore further opportunities for experimentation. In fact it is not by chance that XIFI adopted some federation concepts already used in FIRE and incorporated nodes that were part of the Future Internet experimentation community. Besides potential extensions of the agreements with Red.es -this already provides some of the machines used as basis for FIWARE Lab-, FIWARE aims at creating awareness about the opportunities of becoming a FIWARE provider. In fact, that is the reason why FIWARE Ops was created; FIWARE Ops provides the tools to facilitate the management and operation of such infrastructures. The I3H project may be a new opportunity to find candidates.

Talking about data seems now a straightforward topic when referring to FIWARE, but that was not the case when we started the project. Main objective was the provision of APIs…until we realized thanks to the interaction with developers that the success would come from the combination of APIs with (real) data, and especially with real-time data. Since then FIWARE started a campaign driven by the exploitation interest in smart cities to convince cities to connect their Open Data to FIWARE Lab. The result is an obvious win-win situation, where cities maximize the usage of those data (making them useful and creating potential business opportunities) and FIWARE provides another asset as part of its open innovation ecosystem. At the end of 2014 FIWARE holds close to 3000 data sets shared by different institutions and falling under different categories. Nevertheless, this is an ongoing activity and FIWARE is following a

[6] Some of the events used for this purpose have been: Community Building Day for the LEIT ICT WP2014-15 ICT 30 2015: Internet of Things and Platforms for Connected Smart Objects, November 2014; IoT session organized in ECFI Munich, IoT session at Net Futures event, Iot session in IoT weeks

strategic plan for standardization and exploitation in Smart Cities that will be one of priorities in the coming years.

When coming to standards, even though this topic is part of the exploitation activities, it is worth mentioning that some collaboration activities have helped to position –or at least open the door- for FIWARE to appear as a potential de-facto standard for smart cities.
This is the case of the connection with the Standardization Unit of DG Connect, which has released close to the end of 2014 the paper "Smart Cities Interoperability Essentials" to provide guidance on how to focus interoperability (technical and semantics) efforts with regards to Smart Cities. This paper makes explicit reference to FIWARE and FIWARE Lab, not as a platform to be used in a mandatory way, but as example of the usage of open APIs and data models. It points out the need to reach an agreement about a basic platform architecture for Smart City Platforms in order to foster interoperability.
Adoption of open standards and open APIs is precisely one of the strengths of FIWARE, which makes it quite unique with respect to other offerings of the market. The ability to avoid vendor lock-in has attracted many Public Administrations that look at it now as a possible solution to be independent on specific companies. This would lead to more competition and finally to more innovation and reduction of costs. FIWARE is trying to use these arguments to reinforce its competitive advantage with respect to commercial solutions currently in use in smart cities. The interest created around FIWARE led it to be selected as one of the cases of the workshop "Open Standards for ICT Procurement: Sharing of best Practices" with was held in Brussels in December 2014. This work should be pursued in the next period.

FIWARE as best practice for Open Standards for ICT Procurement

5 Smart Cities: cornerstone of FIWARE adoption

This section provides a summary of some of the collaboration activities that have led to achievements in the field of smart cities, which is –as pointed out in many documents and public communications- the most relevant exploitation area for FIWARE at this stage. Since many aspects related to it have been tackled by other documents, take these brief statements as complementary information to the other reports.

The relevance of the smart cities market for the companies involved in FIWARE (basically because of the ability of FIWARE to satisfy the requirements of a smart city platform understood as a platform that "senses" the city and provides data as context for applications/services) has led us to bias many of the FIWARE communication, dissemination and collaboration actions towards that field and the related stakeholders. Some of the activities have already been mentioned in previous sections, like networking with many cities to get access to their open data, dealing with standards in that specific domain or organizing and attending events targeting precisely smart cities (ex. Smart City Expo World Congress, Urban Forum, Smart City sections in wider industrial events like CEBIT, or events organized by other initiatives sponsored by the EC like the EIP on Smart Cities and Communities, such as the brokerage event for invitation for commitments, Information days or meetings with EC representatives in the DG Connect part of the EIP). Check more detailed information on Smart City Expo Word Congress or the Spanish multi-site event in this document or in *D12.2.6 Report on Communication and Dissemination activities* if your interest relies on the marketing actions.

One of the interesting and successful collaborations has been the one with ENoLL (European Network of Living labs), one of the partners of the CONCORD support action. Already in the beginning of the project, FIWARE established contact with the project CitySDK through them and then with other CIP projects in the field of Smart Cities. Discussions were slow in the beginning but they ended up in the consideration of CitySDK as an Enabler of FIWARE and a clear facilitator to get access to Open Data initiatives in many cities in the EU that had already adopted CitySDK. In December 2014 several FIWARE representatives were invited to join the Connected Smart Cities Strategy Forum, which has led to a growing initiative in size and relevance that involves many projects and cities and where FIWARE plays a very important role. For us the most important aspect is not only the channel to get awareness about other solutions that could be considered in the FIWARE framework (maybe becoming new GE of the platform, as the process suffered by CitySDK) but the ability to connect to more and more cities.

In a short period of time, the Connected Smart Cities Strategy Forum has brought FIWARE to be part of the organizing Committee of the Connected Smart Cities Conference and driver of the Open & Agile Smart Cities Alliance (OASC), already endorsed by 31 cities and set up to accelerate adoption of common standards and principles for global smart city development.

Other results of that collaboration have been the inclusion of FIWARE in the Citysense event promoted by the World Bank and the adoption of FIWARE or FIWARE principles by a good number of cities. Some of these achievements will be further reported in next FIWARE cycle.

This complements the already existing Smart Cities Action Plan pushed forward by the EC.

6 ICT Labs: long term collaboration for education, training and entrepreneurship

Finally, this document concludes major collaboration areas developed by FIWARE in the last period with a section devoted to the collaboration with ICT Labs. It was already some years ago when the FI PPP as a whole signed a MoU with ICT Labs to increase collaboration for the sake of increasing the impact and fostering education and entrepreneurship in relation to FIWARE and other assets developed by the programme. The reality is that not much had happened in the last years, but a new project is helping now to establish a more serious link with the EIT with clear objectives in mind. FIWARE could greatly benefit from ICT Labs at least in the following points:

- Educational objectives: FIWARE can be included as part of future educational programmes and already as part of training developed by ICT Labs in the different nodes. Furthermore, ICT Labs, because of its already well established network of nodes, where many universities are involved, seems the perfect environment to train “trainers”. This is a must for FIWARE, which needs to find formulas for scaling these activities.
- Entrepreneurship objectives: ICT Labs brings together Research, Education and entrepreneurship. This is a winning triangle and FIWARE wish to take advantage of all the activities developed by ICT Labs to foster entrepreneurship…in this case, capitalizing on the FIWARE platform, which could be a new asset for their communities. The plan here will be complementary to the activities of the 16 accelerators funded by the FI PPP in phase 3 and will look at a more sustainable and long term approach that expands beyond the duration of the FI PPP programme as such.

Tighter collaboration with ICT Labs has started in 2014 thanks to the engagement with I3H (Incubating Internet Innovation Hubs), a support action aiming at creating innovation communities around FIWARE. The starting point is the initial network of EIT ICT Labs nodes in Eindhoven, Helsinki, Stockholm, Berlin, London Paris, Trento, Budapest and Madrid. It is expected that this network will multiply exponentially the number of users an entrepreneurs that take advantage of FIWARE to create or run their business. In the next cycle we envisage the creation of a good knowledge base of applications and services resulting from this activity. Until that happens, FIWARE is collaborating in training activities/organization of Developers Weeks that increases the expertise (and therefore availability of experts) around FIWARE technologies.

7 Conclusions and recommendations for the next collaboration cycle (self-assessment)

The Future Internet umbrella

FIWARE is not an isolated project, but a piece of a whole puzzle called the Future Internet PPP. As a result, collaboration with other projects of the programme will be a basic ingredient for the overall success of the programme. The nature of collaboration has changed in this period; it has changed a lot indeed. While previous phases required a tight synchronization with use case projects (with more or less fortune), collaboration since Q1 2014 (and specifically Q2 2014) has been biased towards accelerator projects, nowadays referred to as the FIWARE Acceleration Programme.

Frequent meetings with projects in phase 1 and 2 (Steering Board meetings, Architecture Board meetings, Working groups on business models, communication and dissemination, policy and regulation) have been replaced by less meetings and many interactions with virtual tools (ex. Basecamp). This reflects a more collaborative approach, where dependencies among all actors have been understood, including the need to row in the same direction.

Objectives and interests are therefore more aligned and have facilitated the work. FIWARE has established win-win relationships with the Support Actions of the programme, which are now supporting the overall FIWARE operations and strategy. Regarding accelerators, they act as intermediaries towards developers, SMEs and start-ups and therefore require a fast response and support from FIWARE. FIWARE has worked heavily in the last months in enriching the training material and FIWARE Academy, providing support through the help desk and the coaches and organizing developer's weeks and contests where users of the technology could learn directly with experts. **It has been a resource-consuming work, but this needs to be sustained.**

Major deficiencies identified so far rely on the performance of the FIWARE Lab infrastructure. FIWARE has created so much expectation that the number of users has increased exponentially, leading to shortage of resources to provide adequate support. FIWARE will therefore have to **focus on making FIWARE Lab stable and provide timely technical support, which, added to the right coaching from accelerators should lead to hundreds of successful Apps built on top of FIWARE technology**. Fortunately these tasks are envisaged in the work plan of the next FIWARE phase.

Based on feedback from existing users as well as accelerators, another aspect that should be prioritized is the **setting up of an environment where FIWARE users can meet and share their experiences**, creating an ecosystem that nurtures its members through interactions with other people that have gone through the same path in good and bad. This should happen in parallel to the effort that FIWARE is already making in showing up technical questions though well recognized developers' forums (ex. Stack overflow).

The list of priority topics for the next period should mention without any doubt the relevance of **communicating progress in activities that deal with the sustainability and commercialization of FIWARE**. Accelerators need this information to keep their communities

updated and of course increase the credibility on FIWARE; current users as well as future ones require clear information in this respect, since it will be an essential element to take the decision of using FIWARE as commercial platform for their applications and services. Of particular relevance are communications on the technology roadmap, availability of commercial providers (and their characterization) as well as prices/usage conditions.

With respect to the **collaboration with support actions**, we feel satisfied of having defined the objectives and interests of each initiative and having aligned them with the overall FIWARE ambitions. Collaboration has worked well so far and has already resulted in good achievements. **This should be intensified in the next period**. The FIWARE Mundus label should be reinforced through the collaboration with FI-LINKS, leading to a greater influence of FIWARE beyond Europe. If it was possible to replicate the experience of Mexico and Chile in other regions of the world, that would be a good achievement. Getting knowledge on other solutions developed, for ex. In USA and creating benchmarks could be useful to have a real basis of credibility for FIWARE.
Collaboration with I3H and ICT Labs as a whole is an important element for the coming years, especially with regard to education and training. FIWARE cannot afford sending GE developers to all training activities. Credible solutions to scale are needed; training of trainers is mandatory at this stage. It is expected that I3H will also foster entrepreneurship around FIWARE. Coordination between the new innovation hubs and existing accelerators should be encouraged to keep coherence and ensure exploitation of synergies. Some actors have presence in the several initiatives aforementioned and this should help to materialize this “wish list”.

Wider collaboration context (outside FI PPP)
While collaboration with other projects and initiatives was more active (we could also say more dispersed) in the first years of project implementation, the last year has been characterized by more focused efforts. The door to potential opportunities has always been opened, and all the initiatives with whom FIWARE established links in the beginning have been kept, becoming channels for dissemination and promotion of FIWARE achievements and for calling stakeholders to contribute (for example, to hackathons, challenges, open calls). Nevertheless more concrete relationships have emerged in some areas, where FIWARE aims at very concrete achievements: (1) IoT as one of the driving chapters of the overall platform (a good number of apps based on FIWARE use GE contained in this chapter), and (2) Smart Cities, as a market where FIWARE has been recognized as a solution that provides answers to real challenges.
While the first one has to do with the coherence of EU strategies regarding IoT (support for standards, protocols…technical alignment) and therefore addresses the core technological development in FIWARE, the second one focuses more on creating awareness on the solution and making evident the benefits for customers in order to foster the take up and adoption of FIWARE. In this context, two recommendations for the next cycle can be derived:

- **Creation of tools and mechanisms for an inclusive community of contributors**. We have seen in previous chapters that other communities are already working on IoT enablers and some of them may be incompatible with FIWARE or even use protocols

different to the ones FIWARE wants to standardize. Then, how to promote FIWARE as the firm candidate? Allowing potential contributors to FIWARE to take part in the process, get visibility and enhance their own assets and as a consequence enrich FIWARE is the way. It is expected that this will be solved with the creation of **the FIWARE Foundation**, which is part of the work planned for the next months. A good example of how important it is to take part in that development process has been showed by the CitySDK project, which has accelerated the take up and acceptance of FIWARE by many cities in Europe. This could be greatly replicated through the support of the most excellent projects that tackle any of the FIWARE technical chapters (or new ones that for sure may come in the future).

- **Set up of a demonstration center (it could be virtual) where FIWARE developments can be seen in real settings and where advantages can be understood by developers and by potential clients (smart cities).** This could be achieved through well-defined pilots, with a clear customer-orientation. In the end we could say that this would be an "instantiation" of the FIWARE Lab environment in concrete application settings. The next FIWARE cycle devotes resources to Live Demos that should fit into this challenge.

Others

FIWARE has created high expectations. It is not a toy anymore, especially now that hundreds of users are utilizing the technology. Thus, this is a critical moment in the life of FIWARE. Either we manage to convince a critical mass of users or we fail. FIWARE has many mechanisms at *its hands* to succeed: the accelerator programme that will bring more and more users and will provide examples of how to use FIWARE to create successful businesses, a good marketing strategy led by an experienced press office, industrial partners with resources and good positioning in the market and able to create winning alliances, etc.

Specific effort should be put, however in reinforcing the whole ecosystem, scaling, making the technical infrastructure stable and powerful to serve a huge base of users. Once again the magical word is "scalability", and it could be applied to almost all the elements involved in FIWARE.

Specific collaboration actions can be made in:

- **Increasing the collaboration with infrastructure providers** that can help in extending the network of nodes that provide access to FIWARE resources
- **Establishing agreements with data owners**, being them cities (as already done successfully in this period) or other kind of institutions (many EC organizations hold a lot of open data sources) in order to enrich the data offering and promoting business cases building on these data

From the point of view of either contributing to FIWARE (enriching the Open Platform for example through new GE) or adopting FIWARE ("selling" and "convincing" new developers and other types of users) many actions can be made, especially in the context of the emerging mechanism that should be up and running in few months, such as the FIWARE Foundation. But this is already a topic for the Collaboration strategy of the follow-up project, FI-Core.

8 Previously reported Collaboration activities

This section includes previously reported activities for your convenience. Go through it only if you are not aware of them.

FIWARE is the Technology Foundation of the Future Internet PPP. Thus, by nature it cannot run in an isolated way at all, being obvious that its most important success will be the adoption of the technology by the Use Case projects in a first stage and in a wider scope later on.

All of these instruments together give sense to a programme that should help Europe and all the companies involved in the projects to:

a) Increase innovation in the technology itself, helping to shape the future of the so called Future Internet (understanding this concept as a convergent view between different technological pillars that comprise networking aspects, but also Internet-of-Things, Data and context management, Cloud computing, Trust and Security and Internet of Services).

b) Increase the industrial competitiveness of business sectors in Europe whose impact in the economy is relevant enough so that we ensure that they do not lack behind other competitors, and furthermore that they go beyond them. The way the FI PPP Programme will contribute to that is by bringing the technology to its adoption in those sectors.

FIWARE, as derived from this, is a crucial piece in this puzzle, and the collaboration with all the other projects of the FI PPP in this phase and the next ones is as important as the construction of the technology foundation itself.

The largest amount of efforts in collaboration so far have been invested in cooperation with the projects within the FI-PPP in order to fine-tune the strategy towards exploitable platform components in actual scenarios in different domains such as environmental care, transportation logistics of goods and people, agrifood, smartcities, etc.

8.1 Collaboration Activities in 2013

This section summarizes the collaboration tasks happened along 2013. The most remarkable one is definitely the ‘Software Architects week’ celebrated in April 2013, that is described in section 1.4. Another key one is described in sections 1.5 and 1.6.3, that show the win-win results obtained by the means of a deep technical cooperation with the Outsmart phase I use-case project. The other sections focus on the sessions, exhibitions and collaboration tasks in the context of the FI-PPP and with external bodies, such as the IERC IoT cluster.

8.1.1 Safecity real-life trial in Madrid, relying on FIWARE enablers & testbed

Feb 2013 Proof of Concept trial of the SafeCity project was a remarkable culmination of a 2 year work. Further to the success of the 1st PoC in Stockholm, where they tested the appropriateness of their solutions in a disaster scenario in a railway tunnel, they embarked again on an exciting and challenging new test. This time, they once again decided to combine their technologies with FIWARE’s Core Platform to conduct an experiment that would assess the adequateness of both

to deal with scenarios involving the police using advanced tools to track down criminals, detect suspicious objects, stop intrusions or deal with loitering.

The test was a fun exercise of members of SafeCity moving around Madrid in freezing temperatures and braving the pouring rain to play the role of “criminals” under the surveillance of the police. This exercise involved the use of cameras, different levels of video processing, video analytics, 3D video engines and crowd behavior simulation.

The relevance of the two tests performed by SafeCity is certainly high for FIWARE and shows well the cooperation results within the FI-PPP, as long as it means a real life validation of the project in the area of Safety and Security. Also, the infrastructure of the FIWARE testbed performed flawlessly.

Equally relevant was the exploitation of FIWARE’s Generic Enablers in combination with the technologies brought in by SafeCity. Particularly, this was the case with the IaaS Data Center Resource Management, the Complex Event Processing and the Semantic Application Support.

There was an immediate impact on the local media and a myriad of mentions on Internet pages (for instance, on the news agency Europa Press).

8.1.2 The FI-PPP projects exhibition at MWC-2013

The Internet is definitely going mobile as the impressive figures of the recent Mobile World Congress of Barcelona reveal: more than 1.700 companies, 3.400 journalists and, on the whole, over 72.000 attendees from 200 different countries.

FIWARE, in its role of leader of the creation of a Future Internet services ecosystem in Europe, set up an exhibition booth together with the other FI-PPP projects and organized a workshop within the parallel event on Thursday 25th and Friday 28th .

During the exhibition at the MWC, several FI-PPP use-case projects demonstrated and explained to experts and interested people how FI services are to transform existing sectors such as logistics, safety, smartcities, agriculture, e-health and e-content industry. In our case, FIWARE showed how to materialize such ideas in a faster, easier and cost-effective way with its proposal of Future Internet core-platform of generic enablers.

We did not only provide information and get the pulse of experts on our architecture and implementations but we’ve got proposals for collaboration on specific technologies and exploitation areas. Additionally, some datacenters appeared to be interested on the concept of FIWARE instances to enrich their service portfolio.

8.1.3 The FI-PPP event & exhibition in Barcelona

In the same week of the Bacelona 2013 Mobile World Congress, CONCORD FI-PPP project organized a two-days event hosted in the “Fira de Barcelona” for all FI-PPP projects to share their current status and results as well as existing demonstrations. FIWARE actively participated with several presentations and one exhibition booth, similar to the one showed the days before in the MWC’2013. A presentation from Outsmart project in the second day explained the results of the cooperation tasks described later on in a following section.

More info is available here.

The agendas of both days are included below.

DAY 1 (FEB 28TH): FI-PPP CONFERENCE DAY

11:30 – 12:00	Welcome and registration / Coffee
12:00 – 13:30	**Welcome and Keynotes** **Mr. Manel Sanroma,** Director del Insitut Municipal de Informatica. Ayuntamiento de Barcelona **Mr. Mario Campolargo,** Director Net Futures, European Commission DG Connect **Prof. Wolfgang Wahlster,** Chairman of the FI-PPP Advisory Board, CEO of DFKI **Mr. Gines Alarcon,** Managing Director at Mobile World Capital **Mr. Carles Flamerich,** Director General Telecomunicacions i Societat de la Informacion, Generalitat de Catalunya
13:30 – 13:45	**FI-PPP in a nutshell (ph1, ph2 and ph3)** Peter Fatelnig, Deputy Head of Unit Net Innovation – DG Connect
13:45 – 14:40	**NETWORKING LUNCH in the DEMO AREA**
14:40 – 14:55	**FI-WARE** Mr. Juan Jose Hierro, FIWARE's chief architect. Telefonica
14:55 – 15:10	**INFINITY:** Infrastructures and opportunities for the Future Internet communities. Dr. Federico Alvarez, Universidad Politecnica de Madrid
15:10 – 16:40	**FI-PPP phase 1 results (part 1)** • **SMARTAGRIFOOD**: Smart Food and Agribusiness: Future Internet for Safe and Healthy Food from Farm to Fork. Mr. Krijn Poppe, Economist and Research Manager at LEI Wageningen UR • **ENVIROFI:** Mr. Jose Lorenzo, E&U Head of Market at Atos Research & Innovation • **FI-CONTENT:** Mr. George Wright, Head of the Internet Research & Future Services Team, BBC. • **FINEST**: Mr. Haluk Gokmen, Arcelik R&D
16:40 – 17:15	**COFFEE BREAK – NETWORKING**
17:15 – 18:45	**FI-PPP phase 1 results (part 2)** • **FINSENY:** Dr. Werner Mohr, Head of Research Alliances at Nokia Siemens Networks • **INSTANT MOBILITY**: Mr. Patrick Gatellier, Research Domain Director Thales Service • **OUTSMART**: Dr. Mirko Presser, Head of Research & Innovation at the Alexandra Institute • **SAFECITY**: Mr. Diego Gimenez, Ingeniera de Sistemas para la Defensa de España SA-ISDEFE

DAY 2 (MARCH 1ST): FI-PPP STAKEHOLDERS DAY / BUILDING THE FI-PPP COMMUNITY

	Welcome and registration
09:00 – 10:30	**FIWARE workshop:** FI-WARE: Building Blocks for Future Internet Applications: **FI-WARE and its enablers**. Technical Issues and constraints solved by FI-WARE. Juanjo Hierro (30') **The Middleware GE**: Efficiency as a key added-value of the core-platform (20') (KIARA initiative) **The FI-WARE Open Lab**. Carlos Ralli (20'). **How to take profit from FI-WARE Building Blocks**. Cristina Peña. Outsmart Use-case project (20')
10:30 – 11:00	**COFFEE BREAK / NETWORKING**
11:00 – 12:30	**INFINITY Workshop:** **Overview of INFINITY** (F. Alvarez, INFINITY Project Coordinator, UPM) **Presentation & demo of the XiPi portal and of the INFINITY analysis of infrastructures** (F. Facca, INFINITY Technical Manager, Create-Net)**Why is XiPi important to Europe?** (EC representative TBC)**Why is XiPi important to infrastructure owners?** • Introduction: INFINITY roadmap, the investment in experimental infrastructures (J. Magen, INFINITY Engagement and Communication Leader, InterInnov) • FutureCities – Testbed Infrastructure in Porto (Ana Aguiar, Faculty of Engineering of the University of Porto) • EXPERIMENTA / OFELIA facility (Albert Vico, FI Testbeds research line Leader, Distributed Applications and Networks Area, i2CAT Foundation) **Why is XiPi important to FI developers?** • XiPi and the WIPCONNECT developers' community (Thibaut Rouffineau, WIPCONNECT) • The example of an FI-PPP Use Case: Fiona Williams, Ericsson, FINESCE Project Coordinator) • Future Internet Capacity Building – XIFI: eXperimental Infrastructures for the Future Internet (Maurizio Cecchi, Telecom Italia)

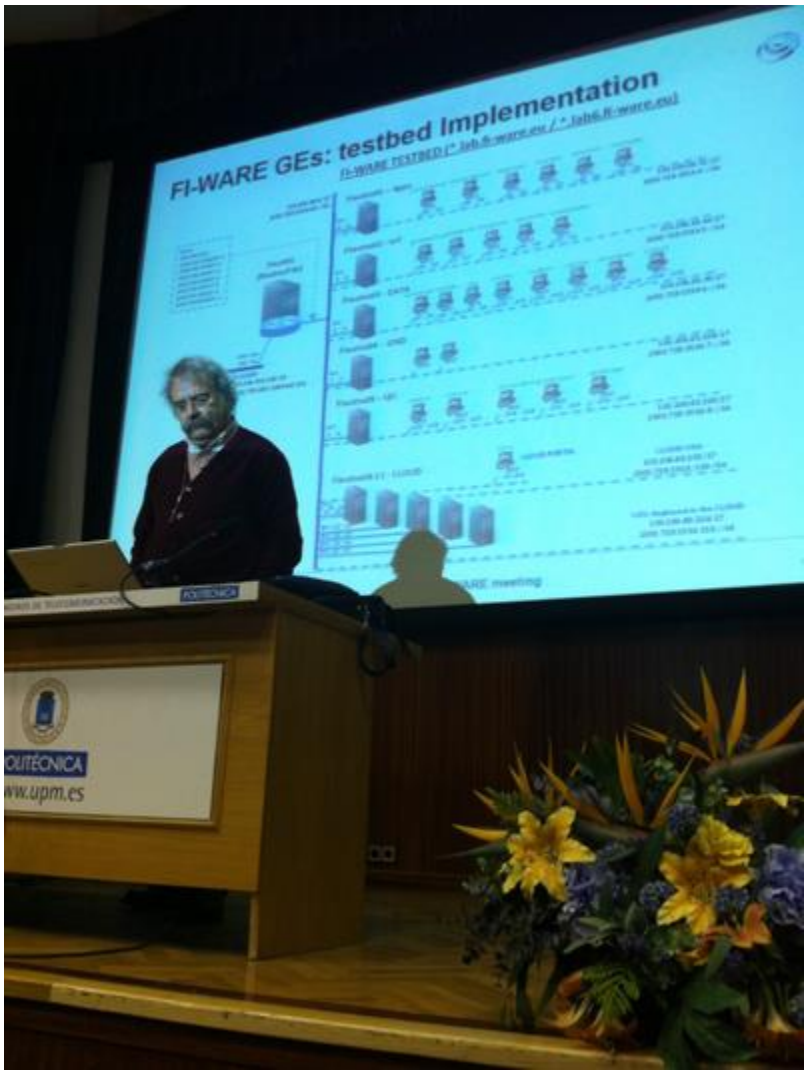
12:30 – 13:30	**FI-PPP engagement session (panel):** SME and FI-PPP users' views • Mr. Artur Serra, Deputy Director of the i2cat • Ms. Ines Garriga, Director of creativity and innovation, Barcelona city • Dr. Joachim Koehler, Fraunhofer IAIS, Internet content economics, FI-CONTENT 2 • Eloi Motcada, SmartAgriFood project, Bon Preu, Spain • Fernando Garcia, Head of Research and Innovation at Madrid City Council". Madrid: Safety, a need for smart cities", Safecity project • Mr. Jaime Martin, CEO eProsima, Middlware experts, FIWARE 1st Open Call
13:30 – 14:30	**NETWORKING LUNCH in the DEMO AREA**
14:30 – 15:30	**FI-PPP engagement session (panel):** Opportunities through ph2 and ph3 • Mr. George Wright, Head of the Internet Research & Future Services Team, BBC overview of FI-CONTENT2 objectives • Ms. Carmen Mac Williams from Grassroots Arts and Research (Overview of FI-CONTENT2 User Community Activation and Experimentation Sites) • Ms. Fiona Williams, Research Director at Ericsson: Overview of FINESCE (phase 2) and opportunities for engagement. • Haluk Gokmen from Arcelik R&D, Overview of cSpace (phase 2) and opportunities for engagement • Peter Fatelnig, Deputy Head of Unit Net Innovation – DG Connect opportunities in phase 3
15:30	**End of the event**

8.1.4 The FI-PPP Software Architects Week

This event was organized by FIWARE and hosted in April 2-5th 2013 in Madrid, at the Telecommunications Engineering School of the UPM.

The goal of the large meeting was to initiate the collaboration with the FI-PPP Phase II Use Case Trials from the very start (ever before their internal kick-offs) to ensure that we share a common view and the same objectives. FIWARE provided a holistic vision of the achievements and the methodology we use and the Use Cases gave us insights in their respective projects. The focus was mainly at architectural level but there was also room for organizational aspects. Overall, a lot of work for four whole days but we are pleased that we now understand each other rather well.

The meeting was attended by key members of cSpace, Finesce, FI-CONTENT II, FITMAN, FI-STAR and FIWARE projects.



8.1.5 Collaboration on joint exhibitions with OutSmart project

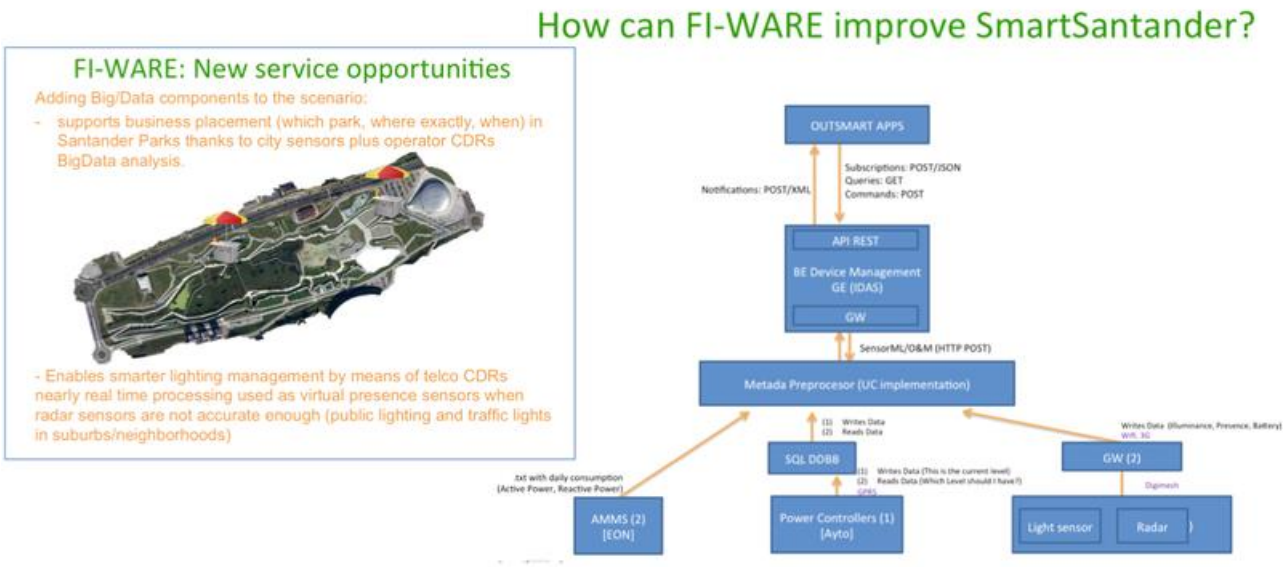
One of the key proposed values of FIWARE, beyond the Generic Enablers, is to expose them as a real ecosystem exploitable by the broad community of developers via the Open Innovation Lab (OIL) – as FIWARE Lab it was called at the time.

For this ambitious goal to become true, FIWARE needs to enrich this ecosystem beyond the technology components with real data, events and resources that make the whole offering an attractive setting for thousands of developers. One way to achieve such an exciting ecosystem is to involve Smartcities, connecting their sensors, actuators and other data/event resources to the FIWARE OIL so that developers can build disruptive apps over those cities. This idea may make also much more attractive the hackathons planned for the future as part of the FIWARE 3rd Open Call objectives.

Taking the above as a goal, the FIWARE IoT team has established a deep collaboration with the FI-PPP phase I Use-case project Outsmart, specifically with their “SmartSantander public

lighting PoC". This Proof-of-concept involves 15 sensor nodes collecting presence, temperature, lighting level and battery level observations and two energy sensors and actuators connected to the public lights of a park in Santander city ("Parque de las Llamas", Santander, Spain). This setting seems perfect for a first trial of FIWARE IoT GEs because of its size and because Outsmart was already using the core of the Backend Device Management GE. However, SmartSantander is today one of the most "sensorized" cities in Europe, as it hosts more than 4,000 sensors distributed all over the city, beyond the lighting Outsmart PoC. FIWARE IoT team is already exploring how to connect all city sensors and data beyond the PoC, once the first integration trials are validated.

This collaboration has concluded with as satisfactory OutSmart-FIWARE interconnected scenario that is depicted in the following picture and was shown in the recent Dublin FIA exhibition (see next section).



Additionally, this successful FIWARE IoT demonstration has been selected to complete the FIWARE overall demo ("Live demo") to be shown in the next project review (Brussels, June 2013) and forthcoming events.

8.1.6 Dublin FIA FIWARE Workshops & Demos

The FIWARE projects has organized a couple of sessions and an exhibition collaborating together with different FI-PPP projects in the context of the latest Future Internet Assembly (FIA) event held in Dublin (May 7-10th 2013). Additionally, our team had the opportunity to attend several other projects sessions both within and out of the FI-PPP ecosystem and organize meetings with relevant initiatives, such as the IERC IoT cluster as described in the following section.

8.1.6.1 *The FIWARE pre-FIA Workshop*

The following frame depicts the pre-FIA workshop detailed agenda.

Pre FIA Workshop Agenda (May 7th 2013)

14:30-14:40 Introduction and brief presentation of the workshop: Nuria de Lama (Atos)

14:40-15:00: The Open Innovation Lab: Stefano de Panfilis (Engineering)

15:00-15:30: FI-WARE Technical value: Juanjo Hierro (Telefónica)

15:30-15:45: Building FI-WARE (contributions from the Research community): representative from IERC cluster

Break & networking (30')

-> Real Experiences on how to use FI-WARE

16:15-16:35: Practical case 1: OUTSMART Project: Luis Sánchez

16:35-16:55: Practical case 2: FI-CONTENTII Project: Carmen Mac Williams

-> Engaging and extending the community:

16:55-17:10: Future Internet in the Manufacturing context: Sergio Gusmeroli (FITMAN)

17:10-17:25 Engaging developers and entrepreneurs: Carlos Ralli (Telefónica)

17:25-17:30 Conclusions and next steps

8.1.6.2 *The FI-PPP plenary session*

FIWARE representatives were in charge of organizing this one-hour workshop in the FIA plenary session of May 9th morning.

The FI-PPP was presented as a research and development initiative that takes FP7 research into innovation, notably in the need for strong cooperation among the participants and that it envisages results closer to the market. This way, today the Future internet PPP moves from the development into delivery model. The session itself was focused on the presentation of the current technology results: the Generic Enablers (GEs) and the Open Innovation Lab (OIL, old name of FIWARE Lab), a virtual place in the cloud where developers will be able to use the technology to build innovative services and apps. It is aiming as well to show how this technology can be applied in some usage areas such as energy efficiency, manufacturing to create smarter business processes and smarter cities.

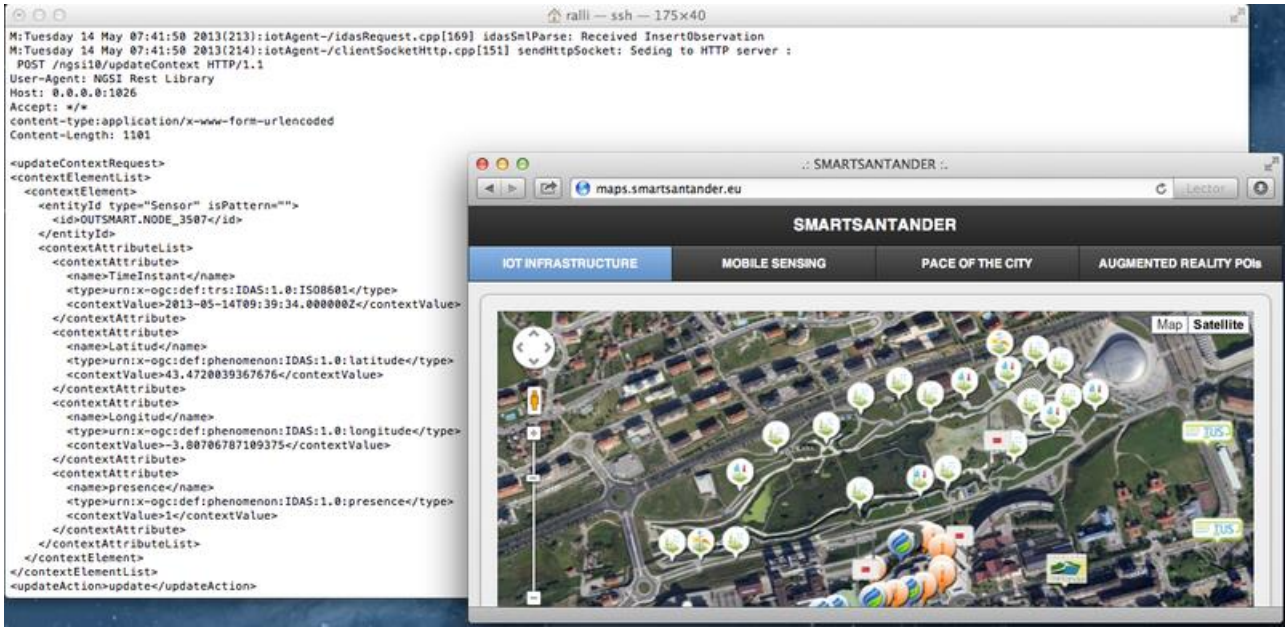
The session was carried out by the following participants:

- David Kennedy (Eurescom), CONCORD project
- Fiona Williams (Ericsson Research), FINESCE project
- Andreas Metger (University Duisburg-Essen) and Haluk Gökmen (Arcelik), FI-SPACE project
- Carmen Mac Williams (Grassroots-arts), FI-CONTENT 2 project
- Juanjo Hierro (Telefónica Digital), Future Internet PPP Chief Architect, FIWARE
- Stefano de Panfilis (Engineering), FIWARE
- Nuria de Lama (Atos Research), FIWARE

8.1.6.3 *The FIWARE exhibition together with Outsmart FI-PPP project*

Our recent exhibition in Dublin Future Internet Assembly (FIA, May 7-10th 2013) shows how FIWARE enablers truly expose open APIs & protocols embedding the technology complexity and, more important, real-time data and events of Smartcities.

The following picture shows this demo, based on the successful collaboration with the FI-PPP Phase I Outsmart project.



Outsmart SmartSantander public lighting scenario has built its services on top of DCA IDAS, the main asset in the FIWARE IoT Back-end Device management GE, that collects data of actual sensors in the "Parque de las LLamas" location.

Additionally, this FIWARE GE is translating sensor data into real-time OMA NGSI events, accessible to developers via the standard APIs of the Context Broker GE at the FIWARE Testbed in the cloud. In the terminal snapshot we observe the XML a developer receives whenever GPS-located presence sensors in the park are triggered. In this park there exist also lighting, temperature and public lights energy consumption sensors.

Developers will be also able to plug those NGSI events into other FIWARE enablers, and thus benefiting from other assets such as Bigdata, Complex Event Processing, Security APIs, etc. This way, FIWARE behaves like a kind of "Open Operating System of a Smartcity", ready for developers and entrepreneurs willing to make true totally new and creative Future Internet Apps exploiting Smartcities data and events.

8.1.7 Kicking off Collaboration with the IERC

At the recent Dublin FIA, the FIWARE IoT team had the opportunity to meet with the IERC IoT Cluster and discuss some collaboration tasks ahead.

The summary of the conclusions of this meeting are listed hereby: The FIWARE IoT chapter has implemented an architecture of enablers working today and suitable to be opened to a broad community of developers. Those developers will access this way data, events and resources to code new and disruptive apps. As good example is the integration of SmartSantander Outsmart scenario described in the previous section. The IERC has concluded a broad IoT architecture based on the IoT-A basics, some work might be needed to understand how FIWARE IoT elements map to such architecture. The following action points have been agreed:

- IERC to circulate links to the latest sources of their proposed architecture.
- FIWARE to create a collaboration space in the Wiki and include links to the most updated references of the IoT architecture.
- IERC team to analyze FIWARE architecture to understand which new elements might be added in the future providing key features.
- FIWARE to analyze the overall IERC architecture to agree on terminology and map elements in both descriptions.
- Both teams to meet again in the forthcoming IoT Week of Helsinki (June 16-20th 2013).

8.1.8 Meeting with IERC during IoT Week in Helsinki

At IoT Week in Helsinki we had a meeting between the FIWARE IoT team and the IERC Activity Chain on "Architecture". We discussed the mapping of the FIWARE architecture to the IoT-A Architectural Reference Model and found an initial mapping. At the meeting, we also discussed the next steps of interactions between IERC and FIWARE and also the whole PPP.

- There is now a stable version of FIWARE IoT GEs, so it is time to check whether there are additional assets from which FIWARE and the FI-PPP could benefit.

ACTION POINT: IERC projects need to check the FIWARE architecture and its mapping to the IoT-A ARM and evaluate whether there are assets not yet present that they could provide from which FIWARE could benefit. Please map to the IoT-A ARM for easier assessment. To be considered by FIWARE (or its follow-up) it is important that a GE based on such an asset could be provided also to external partners under FIWARE conditions, i.e. as open-source or under suitable commercial conditions.

- IERC Activity Chain on (Semantic) Interoperability was identified as a further area of collaboration.

ACTION POINT: FIWARE will nominate a representative for interaction with the activity chain, who will try to attend their next meeting. There is the possibility of joint testing events.

- The new FI-PPP application projects are relevant for the IERC Activity Chain on "Applications"
- The IoT-A Architectural Reference Model will be sustained and further developed by the IoT Forum (www.iot-forum.eu), which was formally founded during IoT Week. This will enable all

interested parties to contribute. The IoT Forum will also organize future IoT Weeks, the next one will be in London in June 2014.

8.1.9 FI-PPP Architecture Board Meetings

During this six months period, FIWARE chief architect, Juanjo Hierro has attended all the virtual and face-to-face Architecture Board meetings.

8.2 Previous Collaboration Activities

This section summarizes the collaboration activities happened before the period reported in the previous section (until Nov 2012).

It is remarkable the organization of two training weeks in different locations with the attendance of all Use-case projects. Use-case projects were also able to present their scenarios and clarify which FIWARE components are likely to be used first. We called these actions the 'FI-PPP Software Architects Weeks' (May 21st - 24th at ZHAW in Zurich & June 4th - 7th at ETSIT/UPM in Madrid).

Additionally, the project has ensured cooperation with key instruments within the programme such as Concord, with meetings in Madrid (Feb 20th 2012) and in Málaga (Agenda).

The following sections summarize the collaboration activities held until Nov 2012.

8.2.1 Collaboration with projects under the FI PPP umbrella

8.2.1.1 *Overview*

The collaboration with other projects under the FI PPP umbrella happens at two levels: strategic level and operational level.

- The **strategic level** uses the PPP **Steering Board** as collaboration instrument. The Steering Board counts on two representatives of each of the projects under the PPP umbrella and its organization is supported by the CONCORD project. FIWARE representatives in that body are Mr. José Jiménez, from Telefónica R&D and Ms. Nuria de Lama, from Atos.

  The kind of discussion topics that fall under this category are: joint dissemination efforts including the definition and agreement on strategic communication messages that affect the set of projects as a whole, support to organize and attend relevant events for the PPP, issues related to time synchronization between the projects or analysis of overall performance of the programme (even though this one is at early stage and will be emphasized in the coming months), to name a few.

- The **operational level** uses the PPP **Architecture Board** as collaboration instrument. The Architecture Board is composed of two representatives of each of the projects under the PPP umbrella and it's chaired by FIWARE. FIWARE representatives in that body are Mr. Juan José Hierro. from Telefónica R&D and Mr. Thomas Bonnert, from SAP. In this framework FIWARE informs other projects about the technical progress of the project as well as the tools available to support the continuous feedback among them. In the first period, for example, a complete environment to gather requirements from the Use Cases has been set up. This is based on a backlog that allows the tracking of each of the requirements pointed out by each of the Use Case projects. It is then a bilateral channel with a lot of potential to ensure that interests of the use case projects and FIWARE are well aligned. In the end, this will reflect the potential of FIWARE to satisfy their needs and make an impact at business level.

8.2.1.2 *FIWARE in the FI-PPP Steering Board (SB)*

FIWARE is participating at the **FI-PPP Steering Board (SB)**. This body shall:

- Act as the highest program-level decision making authority
- Be responsible for decisions regarding Programme level vision and roadmap alignment, priority setting, standardisation requirements, as well Use Case Scenario evaluations and required standardization, licensing, methodological and other support needs
- No escalate decisions, “must decide”, based on consensus
- Make recommendations for implementation in respective FI-PPP projects when required. If recommendations require changes of objectives and/or effort and budget allocation, a contract change has to be agreed and implemented together with the Commission

The Steering Board shall not be entitled to act or to make legally binding declarations on behalf of any Party

FI-PPP SB Meetings and agreements

Following is the list of face to face as well as virtual meetings hold by the FI-PPP SB

- **Initial f2f meeting May 19, 2011 in Budapest**
  Summary of main conclusions:
  - Constitution of SB
  - Creation of Dissemination WG

- **Intermediate virtual meetings**:
  - June 22
  - July 21
  - September 15

- **Second f2f meeting October 25, 2011 in Poznan**
  Summary of main conclusions:
  - Discussion on Advisory Board composition and functions
  - Future actions

8.2.1.3 *FIWARE in the FI-PPP Architecture Board (AB)*

The **FI-PPP Architecture Board (AB)** is the principal body for program-level coordination activities of all kinds of technical aspects and in between FIWARE, Use Case projects, CONCORD, INFINITY, and potentially further external stakeholders and communities covering a wider range of Usage Areas. This board meets on a monthly basis, either physically or virtually, and elaborates on issues related to program-level architectural and technological directions. The board is **chaired by the FIWARE Chief Architect** and each FI-PPP project is represented by two delegates. The overall mandate from a legal viewpoint is documented in the FI-PPP Program Agreement.

One major and immediate concern of the AB was to establish and maintain coordinated interactions between FIWARE, the Use Case projects, and other FIWARE-external stakeholders, including other projects in the same or different Usage Areas. In order to support such interactions in a sustainable and uniform manner two dedicated processes have been defined for:

- FIWARE General Support
- FIWARE Theme/Epic/Feature Requests

The first process, **"FIWARE General Support",** defines a concrete procedure for issuing any sort of technical request and how it will be processed by FIWARE. The tooling for this process was at the time integrated into the FIWARE collaboration platform FusionForge and is a combination of Tracker (ticketing support system) and a Task Manager.

In order to issue a **"FIWARE General Support Ticket"** any external user needs to register a FusionForge account and has to request access to the FIWARE meta project hosted on FusionForge. Once access is granted the user can proceed to the "FIWARE General Support" tracker and issue a ticket by filling the provided form with context information along various aspects, like basic issuer information, relation to FIWARE Chapters, Generic Enablers, and many other features. As soon as the request was issued a ticket is generated and the Chief Architect and his team is requested to perform an initial screening. If the information provided is consistent and complete the Chief Architect will assign the ticket to a respective handler (e.g. a Chapter Leader or Chapter Architect) and in addition, creates an associated task with a start and expected end date which is then assigned to the ticket and the ticket owner. Once the new ticket/task owner is informed about the assignment, she/he will decide about appropriate measures to be taken in order to process the request. This could be, for instance, in the form of setting up a workshop with the ticket issuer in order to discuss the technical details of the ticket. A more straightforward example would be a simple reply with a comprehensive answer with respect to the information requested. The actual handling of each and any ticket may require

several interactions and the system (tracker) supports this by different means that allow to document and track the interactions and measures taken. Even after the completion and closure of the final ticket / task the information will stay in the system's database and can be recovered at any later point in time. Obviously, this straightforward and unified approach provides a single point of access to any external stakeholder without heavy and uncoordinated interactions (e.g. by email and document exchanges via various channels). In addition, the system is configured such that a maximal level of transparency is maintained to all system users, that is FIWARE internal and external, which is considered by FIWARE as an important element for constructive, effective, and efficient collaboration.

The second major topic is related to the technical scope of FIWARE and individual projects in Usage Areas. **The mission of FIWARE is to develop a generic platform that is holistic and complete**. It should provide projects in Usage Areas with a basic Future Internet infrastructure and platform on top of which they can develop and operate domain specific applications and services. The FIWARE architecture should in addition provide support for domain specific extensions of any sort by projects in a given Usage Area. One obvious issue is therefore agreement on what features are "generic", that is what is in the scope of FIWARE and supported by FIWARE Generic Enablers, and what features are "domain specific" and thus out of the scope of FIWARE. Establishing common agreement on such discussions is one of the most central mandates of the AB. In order to support this mission a dedicated process was defined and implemented by respective support tooling. Here the Agile Development approach of FIWARE was adopted and extended as baseline methodology for the whole FI-PPP as it supports cross-team/-project collaboration along a synchronous roadmap. For this purpose a so-called Unclassified Features Backlog has been created in which projects linked to Usage Areas can insert their Features Requests towards FIWARE. Entries in this backlog are described in a commonly agreed format, the so-called FI-PPP Backlog Entry Format (see FIWARE Agile Development Methodology). Once the feature request is completely described and available in the Unclassified Feature Backlog, a similar procedure as for "FIWARE General Support" takes place. The requesting party submits a ticket by using the "FIWARE Theme/Epic/Feature Requests" tracker. Once the ticket is submitted, the FIWARE Chief Architect and his team is notified and requested to verify and validate the ticket. If the ticket is consistent and complete the Chief Architect will assign the ticket to a respective handler (e.g. a Chapter Leader or Chapter Architect) and in addition, may create an associated task with a start and expected end date which is then assigned to the ticket and the ticket owner. Once the new ticket/task owner is informed about the assignment, she/he will decide about appropriate measures to be taken in order to process the request. This could be, for instance, in the form of setting up a workshop with the ticket issuer in order to discuss the technical details of the Feature Request. A more straightforward example would be a simple reply with a comprehensive statement with respect to the nature of the feature requested, e.g. domain specific, generic, already covered by a FIWARE Generic Enabler, not yet covered by a FIWARE Generic Enabler but in consideration, or other states. The actual consensus establishment may require several interactions and the system (tracker) supports this by different means that allow to document and track the interactions and measures taken. At the very end there will be a decision about the nature of the requested feature. For the specific case that the requested feature will become part of the FIWARE

technical roadmap the respective FIWARE Chapter will be identified and the requested feature will be transferred into the respective FIWARE Chapter backlog.

Meanwhile **both processes and the respective tooling is operational**. In order to facilitate uptake and to lower entry barrier, a **comprehensive set of tutorials** and other supporting documents were written and are publicly available on the public FIWARE Wiki (http://wiki.FIWARE.eu):

- How to ask questions or providing feedback to the FIWARE team
- How to upload the full description of requested new Themes/Epics/Features to the Wiki
- How to request for the addition of new Themes/Epics/Features in the FIWARE Backlog

As mentioned previously, the AB meets on a monthly basis and is hosted on a rotating basis by AB member organizations. Following is the list of meetings celebrated so far:

AB Kick-Off Meeting, Co-located with the Future Internet Assembly, May 19 2011, Budapest, Hungary (Agenda)

- Major outcomes:
  - High-level introduction of the persons projects, and organizations involved in the AB
  - FIWARE Roadmap and Agile Approach introduced in great detail

AB Virtual Meeting, June 19 2011 (Agenda)

- Major outcomes:
  - Introduction of the FI-PPP Backlog Template (Agile Approach)
  - Discussion and identification of potential collaboration support tools (e.g. AgileFant, FusionForge, Trac, etc)
  - Discussion on methodologies for requirements engineering (processes, tools)

AB Meeting, July 11-12 2011, Madrid, Spain (Agenda)

- Major outcomes:
  - Agreement on the FI-PPP backlog template
  - Rules for on-demand expert invitation to AB
  - Collaborative tools for Agile discussed (AgileFant and FusionForge for Agile Development)

AB Virtual Meeting, August 25 2011 (Agenda)

- Major outcomes:
  - Process for "FIWARE General Support" presented and agreed
  - AgileFant dropped in favor of FusionForge/Tracker/Wiki

AB Meeting, Sept 21-22 2011, Paris, France (Agenda)

- Major outcomes:
  - FIWARE Product Vision presented and agreed
  - Collaboration space "FIWARE FusionForge" presented and accepted
  - FIWARE Tutorials for collaboration introduced

AB Meeting, Co-Located with Future Internet Assemply, Oct 2011, Poznan, Poland (Agenda)

- Major outcomes:
  - Status on INFINITY Capacities DB
  - FIWARE Apps/Services Framework presented to Usage Areas (follow-up requested)
  - FIWARE Feature Request Process and Unclassified Backlog introduced and accepted
  - Timeline towards 1st FIWARE OpenCall agreed

AB Meeting, January 18-19 2012, Nice, France

- Major outcomes:
  - General organizational & strategic agreements
  - Organization and communication of more general aspects of FIWARE's 1st Open Call
  - Triggered the start of a reflection process after which the expectations for the Capacity Building project will be better defined. INFINITY to lead a white paper to be produced in conjunction with FIWARE
  - Technical presentations and following discussions
    - Uncertainty & Trust in Data
    - 3D User Interfaces and Augmented Reality
    - Streaming

AB Virtual Meeting, February 16 2012

- Major outcomes:
  - Agreements to resynchronize deliverables between FIWARE & UC Projects
  - Agreement to produce Capacity Building White Paper in the context of the AB (INFINITY produces the initial draft but the result will come out of the AB)
  - General updates in several areas

AB Meeting, March 28-29 2012, Zurich, Switzerland

- Major outcomes:
  - General update on the status of individual PPP Projects
  - Discussion and finally better understanding of the needs for the Capacity Building Project

- Feedback for UCs to FIWARE
- Revision of UC requests to FIWARE

AB Virtual Meeting, April 12 2012

- Major outcomes:
  - Agreed schedule of Next steps regarding paper describing points to take into account in phase 2 and 3 of the FI-PPP program
  - Agreement to take measures for improving interaction with UC projects
  - More preparatory work towards the organization of the Education Sessions
  - FIWARE puts forwards a proposal for rescheduling

AB Meeting, Co-Located with Future Internet Symposium, May 29-30 2012, Espoo, Finland

- Major outcomes:
  - Update on status of individual PPP projects
  - Measures for improving interaction between UCs and FIWARE
  - Early feedback on the FIWARE Testbed
  - Briefing on the 1st Open Call & planning of the 2nd Open Call

AB Virtual Meeting, June 14 2012

- Major outcomes:
  - General coordination actions between PPP Projects
  - Advancements in the definition of the topics for the 2nd call
  - Communication of the Expectations for the Testbed
  - General review of the PPP status

8.2.1.4 *FIWARE and other WGs under the FI PPP umbrella*

While FIWARE will increase dissemination and communication activities around its own results in the next period of the project when first components are released, the first 6 months, however, have been a joint effort to provide a coherent message around the overall PPP. CONCORD has facilitated the understanding and agreement among the different parties.

FIWARE has used CONCORD to open many dissemination channels. These channels can be classified mainly into two types:

- **Dissemination media**, such as the website, where a description of FIWARE together with main contact data are reflected, as well as the newsletter (PPP snack), to name the most important ones. FIWARE has also provided a general presentation for overall communication purposes that can be used by CONCORD at any time to promote the project and let other

communities know about our activities. Further info under the newsletter section in **Communication activities**

- **Presence of FIWARE in Relevant Events**. Some examples are:
  - Future Internet European Summit (FIS 2011 in Lux)
  - The 3rd European Innovation Summit: official session held at The European Parliament (Brussels) on October 11th (”Future Internet - Smart Cities - Coming your way".)
  - OPEN DAYS 2011: side event to the official programme of the Open Days held at the Committee of the Regions (Brussels) on October 13th
  - etc

Check the complete list under Dissemination_activities

8.2.1.5 *FIWARE Technical cooperation with Use-case Projects: 'FI-PPP Software Architects Weeks*

The organization of the 'Fi-PPP Software Architects weeks' has meant a great effort within the FI-PPP to align architectural views, improve the mutual understanding on requirements and pave the way for a much more pragmatic and realistic exploitation plan. For the FIWARE project, the outcomes of these sessions are a truly reality-check in order to target components to the actual expectations of stakeholders in various Future Internet domains, including environmental care, transportation logistics of goods and people, agrifood and, citizens cooperation and smartcities. This is an obvious cornerstone for a project developing a core-platform to be exploited first by those agents and later on for any interested 3rd party beyond the FI-PPP umbrella.

The event was held in two different weeks and different locations in order to be able to target as most architects and developers of the use-case projects as possible. This way, the first edition was hosted by ZHAW in Zurich (May 21st - 24th) and ETSIT/UPM in Madrid (June 4th - 7th).

The agenda was organized in a simple way: mornings parallel sessions were devoted to describe FIWARE components while the afternoon sessions were booked for the Use-case projects to tell the FIWARE team (and other interested UCs) the details of their scenarios. From the FIWARE perspective the presentations of both weeks were identical so UCs attendees could easily choose one or the other. On the other hand, UCs presentations were spread among the two weeks.

A detailed agenda of the event and the list of attendees is accessible in the following Googledoc [1]

The material presented and referenced during the 1st week sessions is available in the following placeholder: FI-PPP Software Architects Week Presentations and References

The outcomes of all these meetings are an impressive number of action points for all participating projects that will be gradually implemented. From a holistic perspective, the FIWARE project has now evidence of which GEs will be used first and for what concrete scenarios and purposes. Requirements and constraints have been revised. On the other hand,

use-case projects have understood the scope, benefits, actual Open specifications and APIs of FIWARE GEs. There are many successful case where UCs came back with more FIWARE candidate GEs for the implementations. In some other cases, FIWARE GEs clarifications lead to higher doubts on usage and thus FIWARE is entitled to modify its strategy or keep its bet without that specific exploitation line.

The statistics on the events themselves are quite impressive and meant a real success to establish links among the projects in the face to face meetings and 'hall discussions'. Some relevant statistics are:

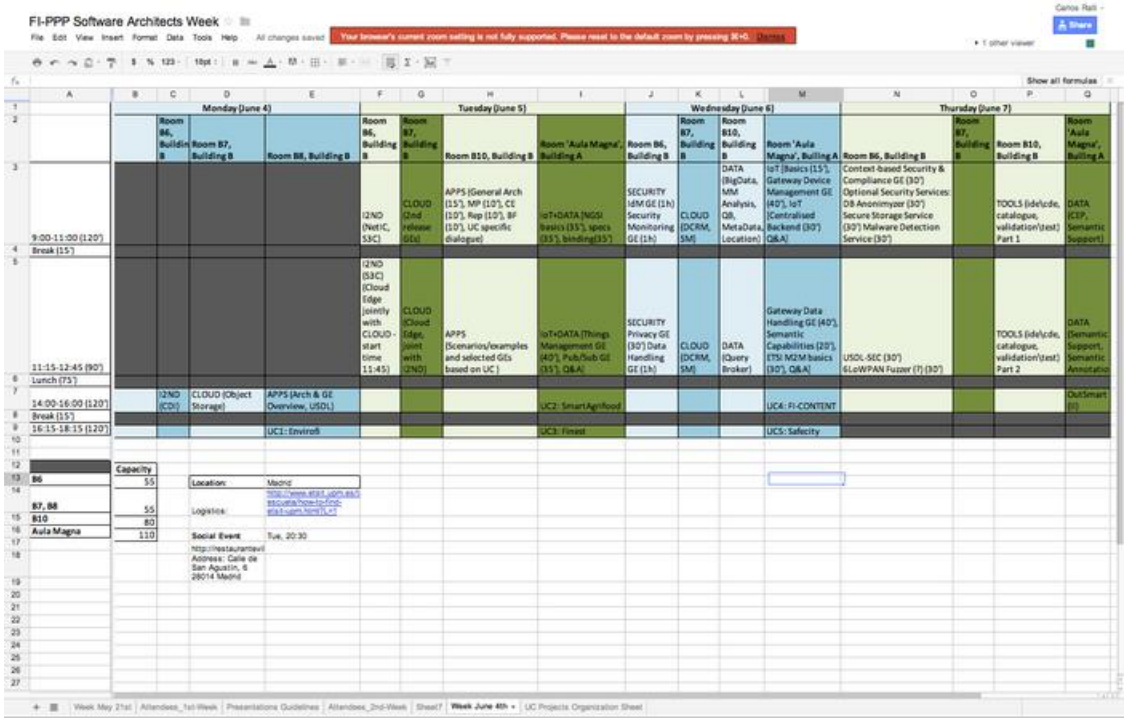
For the second edition: - 72 participants from the Use-case projects - 34 participants from FIWARE - 3 participants from Infinity

- Total: 109 participants

In the first edition: - 17 participants from the Use-case projects. - 38 participants from FIWARE

- Total: 55 participants

The snapshot below show the Agenda scheduled for the second week edition:



The following guidelines communicated to all FIWARE presenters to ensure homogeneous GEs presentations were:

- FIWARE chapters are expected to present to the UCs attendees the basic concepts and the specific GEs to ease their exploitation within UC scenarios.

- Each chapter will prioritize those GEs to be delivered in FIWARE first release and those with a higher rating score as provided by UCs at:

https://docs.google.com/spreadsheet/ccc?key=0AqGGeaQGro3fdC1zSUdlVjJ2WldESHZmZU13bTdjT3c#gid=0

- For the GEs presentations, the following structure is suggested:
- x) GE presentation (25-40')
- x.1) Overview and reference architecture (5')
- x.2) Basic concepts & Main Interactions (15-25')
- x.3) REST APIs & tools for developers (5-10')

For the UCs presentations, the following guidelines were communicated to all presenters:

- The overall idea is to present to the FIWARE team a number of selected scenarios (x) to understand the applicability of FIWARE GEs.
- The presentations can be as follows:
- 1 Description of Scenarios (x*20)
- 1.x.1 story-line (5')
- 1.x.2 High level description of the architecture (15')

- Diagram with all the components (provided by the UC or not) involved in the scenario. - Role of each component and basic interactions.

- 2 Individual components description (technical approach, expectations, constraints) (60')
- 2.1 For the components to be developed by the UC: why they are domain specific & functionality in detail.
- 2.2 For FIWARE components, expectations & constraints.

Considering a total of 3-5 scenarios. UCs should generally need 120-160 min."

The FIWARE project and the Use-case projects under the FI-PPP umbrella have agreed to strength their mutual knowledge and cooperation at the technical level by the means of an event where all them will fill in the gaps as identified by the other party.

FIWARE chapters will be describing the basic concepts, architecture and APIs of its Generic Enablers, prioritizing those that have been previously rated with a higher score by UCs.

UCs projects will present to members of all chapters in FIWARE a number of selected scenarios, including the story-line, services, architecture of components, FIWARE GEs already identified as exploitable and testbed requirements (to be able to deploy UCs trials at the FIWARE testbed).

Due to the number of people to involve in this event and the commitments and availability of all projects, these Workshops will be conducted in two separate weeks. The content of both weeks will be the same from the FIWARE perspective (all slots are repeated from one week to the other), while UCs presentations will NOT be repeated.

8.2.1.6 *Technical Meetings and Actions with Specific FI-PPP projects*

The following list depicts examples of technical interactions between FIWARE work packages & FI-PPP use case projects and is not considered complete.

FIWARE and INFINITY

INFINITY is the project in charge of the Capacity Building. This means that they are identifying all the infrastructures where Use Cases could be deployed in the second phase of the PPP. These experimental infrastructures will be characterized and evaluated for the purpose of maximizing their benefit for the PPP and Europe in general.

Even though INFINITY is present in the main governance bodies of the PPP (Architecture Board and Steering Board) some meetings have been organized by the project to discuss the specific needs of the different projects with respect to these infrastructures. This includes the deployment requirements of FIWARE. Physical meetings have been held in Brussels (June 2011) and Poznan (October 2011).

There was a meeting in March 2012 in Madrid to align thoughts and come to a common understanding in relation with a White Paper that would delve into the complexities of managing infrastructures and deployment strategies for the coming stages of the PPP Programme. FIWARE produces a draft that in turn was taken up by INFINITY as lead editors. A final version was produced in close collaboration between INFINITY and FIWARE and finally submitted to the Architecture Board for their review.

Our Technical Leader took part in the 2nd INFINITY concertation meeting in Zurich (March 27th 2012). The event delved into a variety of topics of common interest. More details can be found on 2nd Infinity ConcertationBoard Minutes(access restricted to PPP members & EC)

FIWARE and INFINITY have ensured continued communication and part of the team are members of both projects. This facilitates mutual understanding and a better grasp of each other's needs.

FIWARE organized a series of Infodays in October, 2012 to promote FIWARE's 2nd Open Call. We offered INFINITY the possibility of having a timeslot to promote their Call for Tender. They took it in all three events (Madrid, Paris and Trento) and had a dedicated timeslot. The agendas are available under FIWARE's 2nd Call infodays

FIWARE and FINSENY

FIWARE has conducted two meetings in Berlin (February 2012) and Madrid (March 2012) where requirements, roadmaps and architecture views have been exchanged and discussed. The experience gathered in those discussions paved the way to organize the Software architects' weeks with all the other UCs, including Finseny.

Additionally, FIWARE actively participated in the FINSENY external stakeholders meeting in Berlin (February 2012).

FIWARE and OUTSMART

Outsmart has participated in the virtual meetings on requirements for the synergic integration of PubSub, CEP and Bigdata GEs. As a result some pragmatic usage scenarios have been drafted

and Outsmart pushed those requirements via the FIWARE dedicated backlog. These activities are expected to have impact in the developments of those components for Release 2.

We have also conducted a series of joint actions to ensure communication and a mutual undestanding. The activity was kicked off back in July 2012 (minutes of meeting on [2]) and has been followed up on subsequent occasions (minutes of meeting of Sept 2012 on [3]).

FIWARE and FINEST

FIWARE Apps chapter and FINEST initiated a collaboration on

- How to utilize Linked-USDL in order to describe specifc logistics services
- Mapping the FIWARE GE (e.g. Repository, Marketplace) the FINEST architecture and use cases.

A couple of informal conference calls where conducted. The goal is to come up with sample domain specific service descriptions and a consolidated architecture showing potential use of FIWARE GE.

FIWARE and ENVIROFI

FIWARE Apps chapter and ENFIROFI initiated a collaboration on

- How to utilize Wirecloud in order to build a flexible Web UI dashboard for managing environmental observations

- UPM has edited a demo video showing the preliminary results of this collaboration is available through http://www.youtube.com/watch?v=yEXlLQYq7s4

- Entry in the Envirofi catalogue for the FIWARE-Envirofi Demo, with the participation of the Apps chapter: http://catalogue.envirofi.eu/news/envirofi-wirecloud-demo

- Paper accepted for presentation in "EnviroInfo 2013 (http://www.enviroinfo2013.org)" Conference with the participation of the Apps Chapter: D. Havlik, J. Soriano, S. E. Middleton, H. van der Schaaf, J. Pielorz, C. Granell, A. Berre, "Future Internet enablers for VGI applications", in Proceedings of the , Hamburg, September 2nd-4th 2013.

A couple of informal conference calls and a dedicated webinar on Wirecloud were conducted. There is also a dedicated mailing list. The goal is to come up with a live demonstrator showing potential use of FIWARE GEs.

8.2.2 Collaboration with other ICT projects and Initiatives

8.2.2.1 *Challenge 1 projects and the Future Internet Assembly*

FIWARE does not start from scratch, but capitalizes on many works done by other projects, funded both internally by partners in the consortium, but also by the European Commission. In

this last case, technologies related to FIWARE are mainly related to Challenge 1 of the ICT work programme. For those that are not familiar with this wording we can say that Challenge 1 integrates research in the domain of Pervasive and Trusted networks and service infrastructures. Basically, this agglutinates the following topics: networks, cloud computing, internet of services and advanced software engineering, internet connected objects, Trustworthy ICT, networked media and Future Internet Research and Experimentation.

In the first 6 months, FIWARE has mainly focused its attention on those projects that are relevant for the definition and consolidation of Generic Enablers. This involves a list of projects where many partners are working and that feed the technological base of FIWARE.

Besides those initiatives we have been keeping an eye on projects running in parallel to FIWARE. The main intention is to identify potential (additional) enablers and technologies that could be considered by FIWARE but also to coordinate efforts leading to a better result for Europe. For example, some projects are defining roadmapping exercises that could help FIWARE in the future Open Calls, or they may be suggesting communication protocols (to give an invented example) where FIWARE should be involved. Based on the current status of the project we are working in the phase of exploring, understanding and opening communication channels that allow us to collaborate further in the coming months.

One of the roots used for that is the participation in **FIA (Future Internet Assembly).** Partners in FIWARE have been active in the editions held so far in Budapest (May, 2011): [4] and Poznan (October, 2011): [5]. Check some of the presentations made by FIWARE in this context in the corresponding dissemination section.

FIWARE has also been present in the **Concertation and Collaboration meetings** organized by the projects in some of the relevant research areas of the project. Specific examples are the ones of:

- **Internet of Services 2011 Collaboration Meeting for FP7 projects** (28-29 September, Brussels) [6]

- **Future Networks 8th FP7 Concertation Meeting** (6-7 October 2011, Brussels) [7]

While in some cases the collaboration is really tigth reporting FIWARE results periodically and influencing when possible those projects (that could be the case of the **EFFECTS+** CSA, in the Security Area), in some other cases the collaboration is at its early stage and under analysis so that we can focus our resources on those ones that will really make an impact.

FIWARE will analyse the possibilities of concrete collaboration with projects represented there besides the ones already identified. For example, we have already started discussions with the CSA Project**SOFI** to make use of their dissemination activities and channels, as well as with the CSA project **HOLA**, both of them from the Software and Service Architectures and Infrastructures area. A different kind of collaboration could be triggered by **SEQUOIA**, which has defined a methodology for impact assessment. We are still at the point of checking if our impact indicators could be aligned with such methodology and, as soon as some of the GE are

released, this work will be revisited to evaluate the possible application of SEQUOIA in the framework of FIWARE.

Even though we have not proceeded with the deployment and testing phase, this will be crucial in future milestones of FIWARE and then we will intensify our relationship with the FIRE Community. Check below connections already made as first attempt to collaborate with this community.

For those interested in more concrete collaborations at technical level with some of the projects that are part of our baseline or detected as future source for collaboration you can visit the specific sections of the wiki created for each technical chapter of FIWARE or read some of the notes that we have compiled below for you:

Do you want to know about related Research projects? Go on reading...

- **Interface to the Network**: here we provide some additional initiatives to those that underlie FIWARE assets
  - webinos – Task 7.1 Connected Device Interfacing - http://webinos.org
  - ETICS – Task 7.4 Service Capability, Connectivity and Control - https://www.ict-etics.eu/
  - OFELIA - Task 7.3 Network Information and Control - http://www.fp7-ofelia.eu/
  - MEDIEVAL - Task 7.3 Network Information and Control - http://ict-medieval.eu/index.html

- In the case of the **Service marketplace**, we focus our attention on those projects that have been taken as starting point for the FIWARE assets.
  - *Asset:USDL*
    - The TEXO project within the THESEUS program initiated by the German Federal Ministry of Economics and Technology (BMWi)
    - German Federal Ministry of Education and Research projects (BMBF) Premium Services
    - EU European Commission, DG INFSO projects FAST, RESERVOIR, MASTER, SERVFACE, SHAPE, SLO@SOI, and SOA4ALL
    - The Australian Smart Services GRC.
  - *Asset: USDL Markteplace OS*: The marketplace was used and further developed in the projects
    - TEXO, Premium Services.
    - Internet of Services Marketplace
    - Premium Services Homepage
  - *Asset: Premium-Services Pricing Strategies Simulator*
    - PREMIUM Services homepage

- *Asset: Revenue Sharing System*
  - 4CAAST
  - BlueVia
- *Asset: Wirecloud Mashup Platform*: The Wirecloud Mashup Platform has been used and further developed in the following projects:
  - The EzWeb and Nuba projects within the Avanza I+D program initiated by the Spanish Ministry of Industry, Tourism and Trade.
  - The EC FP7 FAST, RESERVOIR, and 4CaaSt projects.
- *Asset: LighSemantic-enabled Design Time Semi-automatic Service composition*
  - Oryx Editor
  - SOA4All Advanced Prototype For Service Composition and Adaptation Environment

FIRE Projects

FIRE is the community associated to the topic 1.6 of the work programme, and stands for Future Internet Research and Experimentation ([8]). The main idea of the FIRE projects is to enable early experimentation and testing in large scale environments.

As you know, FIWARE will set up a testing infrastructure in the project that will be available for third parties to test our components. The test bed will contain an instance of all the GE implemented by the project. But FIWARE will go beyond that by setting up what we initially called the Open Innovation Lab and finally turned into **FIWARE Lab**. Besides that, Open Innovation methodologies and tools will facilitate that third parties (including SMEs) that are not so technically-skilled can make use of the FIWARE technology and build applications and services on top of the results of the project. FIWARE Lab will be available after the second year of the project, and, as you can realize, it will be a joint effort between different teams of the project, involving people working in the development environment, developers community, Open Innovation and exploitation or the testing infrastructure, to name the main teams.

This long term work will take advantage of the efforts of the FIRE community, where some partners of FIWARE are active members.

Some concrete steps have already been taken and are briefly illustrated below:

- **Liaison with existing IoT-related FIRE experimental testbeds**

FIWARE believes that it would be very relevant for the FIWARE testbed to connect to different IoT-related experimental testbeds, so that applications hosted on the FIWARE testbed can connect and gather data on sensors or act upon actuators that are deployed by these IoT-related experimental testbeds. For this to happen, discussions have already been initiated with **OpenLab**: [9]. Some of the OpenLab testbeds already under analysis are: [10] and [11]

- **Service experimentation**

Even though not explored yet, there are direct roots from FIWARE to the two main projects representing service experimentation and thus covering the different layers of IaaS and PaaS. These projects are**TEFIS**: [12] and **BONFIRE**: [13], coordinated by Thales and Atos respectively, both of them partners of the FIWARE consortium.

- **Other FIRE projects**

Other projects that may serve for the purpose of testing and experimentation that will be analysed as part of the collaboration roadmap of the project are **Experimedia**: [14], focused on experiments in live social and networked media experiences and **SmartSantander**: [15], which provides a relevant experimentation platform where IoT supports the concept of smart cities, in this case deployed in the Spanish city of Santander. Once again this bilateral channel should be easy to manage thanks to the presence and active participation of some common partners, such as Atos and Telefónica respectively. While in the case of OpenLab, TEFIS, BONFIRE there is a clear relationship with the experimentation of the technology of FIWARE, experimentation platforms like SmartSantander or Experimedia may be used for testing through Use Cases projects that fall under the relevant domains they represent (that could be the case of OutSmart and FI-Content). This is not clear yet to us and therefore this is an ongoing analysis that will be pursued later in the project.

8.2.2.2 *The FInES Cluster*

FInES ([16]) stands for **Future Internet Enterprise Systems**. This cluster was generated in the framework of RFID and Interoperability projects that were originally funded by the current topic 1.3 of the WP. Since recently it has been moved to the environment of Factories of the Future (FoF) projects (and specifically topic 7.3 of the WP). Wherever its position is in the set of projects funded by the European Commission the important issue is that it aims at enabling enterprises, including SMEs, by means of ICT, to exploit the full potential of the Future Internet. That falls directly under the main goal of FIWARE. Based on that, collaboration with them is for us mandatory.

From a technological viewpoint, FInES has a strong focus on cross-domain co-operation (web semantics, web content technologies, grids, collaborative environments, service oriented architectures, eGovernment, etc.), and it maintains natural links with standardisation bodies (CEN's eBIF, ICT Standardisation Study, ETSI, etc). Some partners have already made presentations of FIWARE in subsequent meetings (SAP, Atos...) even if contacts are managed through Engineering, which is an active member of the Community. This ended up in a fruitful participation of FIWARE in the **Samos 2011 Summit**: "Future Internet: The power to change society".

At this moment in the project, the main motivation behind the collaboration with FInES can be summarized as follows:

- Contribute to the **FInES Research Roadmap** by reflecting some of the technological challenges identified by FIWARE that will not be solved by the project in its current definition (it may be done through the Open Calls though)

- Maximize the use of the great **channel of FInES towards SMEs**. It is the intention of FIWARE to involve SMEs already in the Open Calls (25% of the budget expected to be asigned to this type of organizations, even if it is only an estimation). Besides that, SMEs will play a crucial role in the testing phase of the project regarding the validation and acceptance of the technology. Furthermore, the Open Innovation Lab has been conceived as a tool to promote Open Innovation on top of the APIs released by FIWARE, and here SMEs should be an integral part of this Open Innovation ecosystem.

- Finally, the impact of the FInES work in several audiences, such as the European Commission, makes this cluster a suitable vehicle for **policy contributions**

All these activities will be further explored in the coming months and will be extended according to their feasibility and potential impact. It is doubtless that FIWARE will also keep an eye on the works and publications not only of the integrating projects, but also of the FInES clusters (the complete list can be found in [17].

8.2.2.3 *The AAL (Ambient Assisted Living) Community*

It is not a secret that Ambient Assisted Living (AAL) is an interesting application domain that could greatly benefit FIWARE with respect to the process of gathering requirements. It impacts the Internet of Services field, but also comprises many aspects related to Trust and Security and undoubtedly it is the perfect showcase for technologies of the so called IoT (Internet of Things).

AAL is not part of the initial set of projects retained by the 1st Call for Proposals of the FI PPP programme as it not eHealth either. Both of them are considered by FIWARE a main source of requirements but also good deployment environments that could really make an impact in terms of FIWARE adoption.

From a technical point of view both of them have very strong requirements in terms of integration, IoT and security. This is complemented by the political and business relevance. While other sectors are fighting to remain competitive to their customers or "invent" new ones, AAL and eHealth do not have to find customers. The *Old Europe* is providing them for free, and growing continuously. That is the reason why the EC decided to set up **Active and Healthy Ageing** as the first pilot of the **EIP (European Innovation Partnership)** instrument.

FIWARE has looked for collaboration with both communities. With respect to AAL many discussions have taken place with the AAL Forum since FIA Budapest. Besides exchange of e-mails and phone calls more active collaboration has taken place, including physical meetings (October 2011) and joint participation in events with the goal of reaching a common understanding about the developments of both communities.

- The starting point was the presence of FIWARE and AAL in the **Third Usage Area Workshop organized by the CONCORD and EX-FI projects (June 2011, Brussels**). There FIWARE made two presentations (see dissemination section; speeches by Thierry Nagellen, Orange-FT and Nuria de Lama, FIWARE) and AAL contributed to the discussion trying to check the way both platforms -FIWARE and the one pushed by the AAL community- could be made interoperable.

- This interaction has a follow up these days in Amsterdam, thanks to the participation of FIWARE in the **"Workshop on Integration of AMI and AAL Platforms in the Future Internet Initiative"**(November 16, Amsterdam). This invitation by AAL brings FIWARE to the forefront of the discussions and one of the FIWARE representatives (Thierry Nagellen, from Orange-FT will present FIWARE GEs to the audience and will participate in the two panels: one of them focused on technical aspects while the other one will be more generic by addressing wider opportunities of collaboration between AAL and FI.

Check further information about this in the dissemination section of the wiki, where you can find links to the presentation and panels and in [18]

8.2.2.4 *The CELTIC Cluster*

FIWARE has established an special collaboration agreement with [CELTIC projects]. This collaboration is assured by the presence of several representatives at the PCC of FIWARE and at the CELTIC Steering Board.

This collaboration allows CELTIC projects to contribute effectively to the process of Materializing the FIWARE Vision due to direct access to the FIWARE log-book (process still under definition).

At present, the collaboration with the PISCES project is the first example, but it is expected new projects in the coming CELTIC call will extend the use of the FIWARE platform.

- **The PISCES Project: seed for CELTIC collaboration**

PISCES is a collaborative project aiming to Promote future Internet Solutions in health EnviromentS. It complements then other use cases funded by the PPP by bringing some requirements that are specific of this sector. It also adds to the collaboration already in place with the AAL community. The project has partners that represent different countries, such as Turkey, Spain, Germany, Slovenia and Hungary. Its main objectives can be summarized as follows:

- A comprehensive set of detailed technical functional and non functional specifications
- The identification of enablers and architectural requirements to deliver FI applications in the health domain
- Development of conceptual prototypes
- Drafting of a strategy towards contributing to standardization in the respective application fields defined by the project

As it can be seen, its results are expected to be relevant for the PPP in general and FIWARE in particular. The project was defined taking into consideration the collaboration process of FIWARE, the same milestones and the same kind of interactions. Collaboration should be eased by this, but it has not been effective till now because the consortium is still waiting for a response by the Turkish Administration. Meanwhile, FIWARE has provided some general information to them to keep PISCES in the loop.

8.2.2.5 *ETP (European Technology Platforms)*

Several actions have been taken so far with respect to European Technology Platfoms having two goals in mind:

- Collaboration in terms of technical development, it is to say, it is especially important that FIWARE uses the channel of the ETPs to synchronize research roadmaps and to get information about developments that could be interesting for FIWARE coming from the different initiatives. The other direction is also valid, since FIWARE results have to be promoted in those environments to:
- Motivate the use of the APIs created by the project (for business and validation)
- Get the interest of the development community to FIWARE (engaging new stakeholders and increasing the community around the project)
    - The last point is related to the motivation of third parties to participate in the Open Calls

ETPs have big communities behind them, and as such, they are powerful tools for dissemination and policy actions (for example, most of them have opportunities to talk in the Parliament and even to explain their ideas to the Commissioner for the Digital Agenda Mrs. Neelie Kroes).

FIWARE has specifically worked with **NESSI (European technology Platform on Software and Services), Net!Works (European Technology Platform for communications networks and services**, formerly called eMobility) and **ISI (the Integral SatCom Initiative)** .

While channels with the networking and services aspects are clear in FIWARE it is more difficult to establish the collaboration with the satellite community. So far it has been based on sending information and informing organizations about what FIWARE is about, its progress and the coming Open Call. Their main motivation is to get involved in Future Internet and we will analyse in the future if satellite communications are needed in this environment. At this very moment that is not envisaged and we believe different use cases should enter the game to make that sensible (such as disaster management, earth observation or applications such as ehealth or education in remote areas, where satellites could provide a more reliable infrastructure that could act as back up for mobile networks. An illustrative example of situation where this could be useful is the disaster happened in Fukushima, where communication infrastructures were seriously damaged because of the tsunami and the nuclear disaster).

See related presentations in the dissemination section of the wiki.

- **Net!Works General Assembly** (5 October, Brussels): presentation of FIWARE and its relation to the Usage Areas ([19])
- **4th ISI SatCom Day** (18-19 October, Brussels): presentation of FIWARE in the First Panel titled "ISI & Future Internet: Is there a role for Satellite in Future Internet?"

You can also stay tuned about FIWARE in the newsletters published by some of these initiatives: See for example last newsletter published by NESSI: [20]

8.2.2.6 *EnoLL (European Network of Living Labs)*

The collaboration with EnoLL is expected to happen mainly when first technical results of FIWARE are available (at least first release of the GE). EnoLL is once again, as described in some of the previous initiatives a good channel for several purposes:

- Increasing the audience and interest about FIWARE (therefore good for dissemination and wider adoption of the results)
- Involve and engage SMEs
- And finally, applying some of the experiences acquired by EnoLL regarding user involvement in the Innovation process.

Some discussions have already taken place in the context of the methodologies that could be applied in FIWARE to involve final users early enough in the process and therefore ensure the right validation of the technology and its adoption afterwards, which will clearly be based on the acceptance by the user. This knowledge will be applied to the definition and setting up of the **Open Innovation Lab**. FIWARE relies on CONCORD to define the collaboration agreement that makes possible *in an easy way* a further exchange of information with external communities. Even though most results are public, still a collaboration agreement regulates the responsibility and nature of the collaboration between companies, projects and initiatives. EnoLL is very experienced in this and we are confident that it will be a very valuable source of information for the coming project phase.

We may mention the following concrete interactions:

- Future Internet PPP: Opportunities for Smart Cities and SMEs
  - Description: we had a meeting with the Malaga Town Council to show the opportunities that the programme offers to cities and SMEs. Málaga became an ENoLL member in the ENoLL 5th wave (2011), as publically announced during the Future Internet Week in Budapest in May 2011
  - Date: March 20th 2012
  - Location: Malaga City Council, Innovation and New Technologies Department
  - Agenda: Málaga Town Council Agenda
  - Presentations: Malaga Town Council Presentations
  - Partners involved: TID,ATOS

8.2.2.7 *EIT ICT Labs*

EIT ICT Labs KIC ([21]) was designated as a Knowledge and Innovation Community by the EIT's Governing Board on 16 December 2009 in Budapest. The priority area which the ICT Labs KIC addresses is future information and communication society. The initiative focuses from an operational point of view on education, promotion of innovation, coordination of research and development actions and business. In order to open up this business ecosystem and the

developed technologies to organisations, notably SMEs, external to the FI-PPP initiative, some of the FI-PPP members decided to set-up a close collaboration between the EIT ICT Labs initiative and FIWARE. This collaboration will build on top of existing synergies between research and business innovation in the European ICT sector. The combination of the EIT ICT Labs and FI-PPP initiatives will support in an optimal way a concrete and broad adoption of the existing technological solutions by SMEs external to the FI-PPP programme. The outcomes of this approach aim at boosting the adoption of Future Internet technologies within SMEs, Public Administrations, and visionary individuals with the goal of creating new innovative businesses and new job opportunities.

The EIT ICT Labs - FI-PPP Liaison project is designed to provide the access and support the usage of FIWARE technologies within three phases:

- Phase 1: Adoption of the FIWARE technologies as a playground where to inject new technologies (notably service marketplace at large, cloud computing, security, interface to network devices) and build new services on top of those
- Phase 2: Instantiation of the FIWARE Testbed in specific territorial or living labs where to run real and highly impacting use cases.
- Phase 3: Organization of dedicated workshops with entrepreneurs, notably SMEs, researchers and other relevant ICT stakeholders

Goal

The EIT ICT Labs - FI-PPP Liaison project intends to establish mutually beneficial links between the FI-PPP and the EIT ICT Labs initiatives. The current version of the FIWARE Testbed focused predominantly on the “research related evaluation” of the FIWARE Technologies. The link with ICT Labs initiative will enable the establishment of a FIWARE Testbed that allows for a “business”-based evaluation of FIWARE Technologies within well focused domains, including “Cloud-Computing” and “Smart Cities” to form the EIT-Testbed. The project will open the EIT-Testbed to SME partners and allow a complete and realistic business integration of the FIWARE technologies into their business solutions so as to provide new Future Internet Applications or new Business Model Approaches within the given domains.

Promising ideas of how the FIWARE WP3 Application and Services Generic Enablers can be used in the cloud computing area already exist and may be evaluated by external project partners with special focus on suitability for mass adoption. A first demo scenario making use of SAPs service marketplace technologies was already defined and implemented prototypically.

8.2.2.8 *PanlabII Project*

PanlabII [[22]] addresses the need for large-scale testing facilities in the communications area by implementing an infrastructure for federating testbeds. The PanlabII project uses the concept of European innovation clusters and builds on the existing testbeds that are supporting scientific and technological endeavour within these clusters. The central objective of PanlabII is to create a testbed federation among these regional innovation clusters in Europe. This will enable

companies participating in these clusters to test new communication services and applications across Europe. The testbed federation includes four core innovation clusters and three satellite clusters.

The PanlabII tools might be a good infrastructure and environment to interconnect the several trial and test sites of FIWARE. Therefore it is not necessary to ship physical nodes to other locations of FIWARE partners and Use Case project partners. Especially it is necessary in “Interface to Network and Devices” to have such an environment because the implementations are done and will work on different partner locations.

Several meetings took place in spring 2012. The discussion is on-going and is not finalised.

Normal 0 false false false EN-US X-NONE X-NONE

8.2.2.9 *ETICS Project*

ETICS [23] aims at creating a new ecosystem of innovative QoS-enabled interconnection models between Network Service Providers allowing for a fair distribution of revenue shares among all the actors of the service delivery value-chain. The project will analyse, specify and implement new network control, management and service plane technologies for the automated end-to-end QoS-enabled service delivery across heterogeneous carrier networks. ETICS includes a large number of partners that, participating to several key projects, have matured strong expertise. ETICS prototypes on control, management, and service planes will also leverage an important background on implementations and performance assessment. They will allow demonstrating and testing the effectiveness of new business models as well as how agile network service creation, activation, monitoring and billing for interconnected fixed and mobile operators will improve time to market of new services and reduce operational costs and complexity.

In the framework of the cooperation, the FIWARE/I2ND-Team (especially the network control tasks) and the ETICS team have started a discussion. Goal is to get an understanding for the interfacing between different network service providers and to check the possibility to use implementation of ETICS in FIWARE.

The first round table discussion took place in Berlin, Germany, 22-26 October, 2012. The cooperation and discussions are ongoing.

8.2.2.10 *MEDIEVAL Project*

MEDIEVAL (Multi**MED**ia transport for mob**I**l**E** **V**ideo **A**pp**L**ications) is a 'Small or medium-scale focused research project' (STREP) of the 7th Framework Programme of the European Commission, addressing the core of the strategic objective "The Network of the Future". MEDIEVAL aims at evolving the Internet architecture for efficient video transport. To achieve this, a cross-layer design is followed. The project has started on 01.07.10 and will last 3 years.

Important means to enable efficient video transport over the Internet are network protocols suitable to make applications aware of the situation in a network, e.g. reachability or traffic load. In this context, the MEDIEVAL project actively contributes to the development and

standardization of the IETF ALTO protocol. The ALTO protocol provides guidance to applications that offer the choice among several application endpoints to trade resources with, on which endpoint to select.

Through the collaboration of FIWARE and MEDIEVAL, the development of interface functionalities in task 7.3 of FIWARE will benefit from work already performed on ALTO protocol client functionality within the MEDIEVAL project. On the other hand, MEDIEVAL will benefit from feedback on and improvements of the ALTO protocol client functionality gained in the course of the integration into the FIWARE Generic Enabler and from application tests performed in the FIWARE testbed.

8.2.2.11 *Webinos*

Webinos ([24]) is an FP7 Call 5 ICT Project which aims to deliver a platform for web applications across mobile, PC, home media (TV) and in-car (IVI) devices. It has over twenty partners, both industrial and academic. The project is due to conclude in August 2013.

Both Webinos and FIWARE's Connected Device Interface (CDI) Generic Enabler (GE) have overlapping goals. Both intend to bring a common platform for application developers to many device types. FIWARE and Webinos recognise the opportunities to collaborate, specifically that FIWARE can utilise the code and other deliverables provided by Webinos as a major building block for the FIWARE CDI GE.

As the CDI GE builds upon Webinos the CDI team will introduce new extensions, modifications, and changes to ensure that the resulting output meets all the use cases and requirements already laid out for the CDI team.

During this process the CDI team will learn more about Webinos, and identify areas in which Webinos could be extended. It is envisaged that this knowledge will be shared back with the Webinos team in the form of combination of informal verbal feedback, and more formal communication of suggested additional API, specifications, and code.

FIWARE / Webinos Engagement History

- **October 2011**: FIWARE made contact with Webinos and exploratory conversations took place.
- **December 2011**: The CDI team formally signalled to the I2ND task lead of the team's intention to introduce Webinos assets into the FIWARE project. The CDI team request and obtain consent from FIWARE project lead.
- **March 2012**: The CDI team provided Webinos with an updated version of the Webinos Contacts specification document which provided additional functionality.
- **May 2012**: Webinos provide the FIWARE team (CDI) with access to the Webinos source code repository
- **June 2012**: FIWARE attend official Webinos public release meeting (Ghent)

8.2.2.12 *MSEE (Manufacturing Service Ecosystems)*

The IP-Project "MSEE" (Manufacturing Service Ecosystems) [25] in the "Factories of the Future (FoF)" Call of the 7th Framework Programme / Objective 7.3 "Virtual Factories and Enterprises") works in the area of new Virtual Factory Industry Models and Future Internet Enterprise Systems and has been inspired by FINES Cluster activities. MSEE develops concepts, platforms, and technology for service ecosystems in the manufacturing domain. MSEE builds on the notion of a Future Internet Service Platform as developed by the FIWARE project.

We collaborate with MSEE by providing information on the relevant Generic Enablers which are relevant for re-use in the MSEE project. The idea is to evaluate if and how generic enablers (and their reference implementations) can be used in the MSEE project to realaize novel technologies on top of them with an added business value in the manufacturing context. In MSEE, USDL language and USDL-based tools were evaluated.

In the reporting period, the LinkedUSDL Editor was extended to allow imports of MSEE models for the generation of USDL service description skeletons. The usage of store and marketplace are planned in MSEE. Prior to that (reported in last quarter also), in this context, several tutorials on USDL technology (Linked USDL description language, USDL editor, and other related tools) have been given by the FIWARE team (FIWARE WP3 Apps and Services - SAP). MSEE requests for detailed information have been answered by the providers of the generic enablers of interest.

8.2.2.13 *Broker@Cloud (Enabling Continuous Quality Assurance and Optimization in Future Cloud Service Brokers)*

As enterprises increasingly adopt the model of cloud computing, their IT environments are transformed into a matrix of interwoven infrastructure, platform and application services delivered by multiple providers. To deal with the complexity of consuming large numbers of cloud services from diverse sources, enterprises will need assistance from specialised cloud service delivery intermediaries. These will need to offer an array of sophisticated brokerage services which will go far beyond the kinds of intermediation capabilities available today.

The challenge taken up by the FP7 project Broker@Cloud is to research and to develop solutions with respect to some of the most valuable and technically demanding types of brokerage capabilities foreseen for future enterprise cloud service brokers.

The brokerage framework, most of which will be released as Open Source Software, will comprise the following core building blocks:

- Capabilities for cloud service governance and quality control (lifecycle management, dependency tracking, policy compliance, SLA monitoring, certification testing)
- Capabilities for cloud service failure prevention and recovery (event monitoring, reactive and proactive failure detection, adaptation analysis and recommendation)
- Capabilities for continuous optimization of cloud services (optimization opportunity detection and analysis based on cost, quality, or functionality preferences)

- Interfaces and methods for platform-neutral description of enterprise cloud services (technical, operational and business aspects, static and dynamic views)

LinkedUSDL is considered as the favorite candidate for the main anchor interlinking different aspects of enterprise cloud services descriptions in a platform-neutral fashion. Service description aspects specific to Broker@Cloud framework and not already covered by Linked USDL specification will be addressed through extensions.

8.2.3 Joint efforts between Future Internet Initiatives at National and International Level

8.2.3.1 *TrustedCloud*

TrustedCloud is an initiative of the German Ministry of Economics to support secure and safe cloud computing for small and medium enterprises and public sector. Part of these initiatives are 14 projects tackling various aspects of secure cloud computing for SME. Five of the projects have a need for a unified service description language and components of a business platform. SAP (Dr. Torsten Leidig) presented USDL and FIWARE GE in a keynote at the TrustedCloud Standards Workshop on May 9th, 2012 at the Karlsruhe Institute of Technology (KIT). Part of the workshop was also a breakout session on standards for service description where the requirements and the potential use of USDL and FIWARE technology was discussed. Namely the projects Value4Cloud, goBerlin, SensorCloud, TRESOR expressed their interest in furter collaboration and contribution to linked-usdl.org and therefore working together with FIWARE WP3 (Applications and Services Ecosystem). A follow-up workshop took place on 29.08.2013, in which partners of the PeerEngergy-Cloud, TRESOR, CLOUDWerker, Value4Cloud and cloud4health projects as well as representatives form the German Ministry of Economics (BMWi) and Deutsche Luft und Raumfahrt (DLR) particpated to discussed aspects of extension and integration of dedicated vocabularies for Cloud Services into Linked USDL. Furthermore the FIWARE Open Innovation Lab was presented.

8.2.3.2 *German Software-Cluster*

The German Software-Cluster (http://www.software-cluster.com/en/) is based in the southwest of Germany. Numerous universities, companies and research institutions work closely together in and around the key software development centers within this region, which includes Darmstadt, Karlsruhe, Kaiserslautern, Saarbrücken and Walldorf. Together they develop trend-setting corporate software for the future. The Software-Cluster has already won an accolade in relation to the "Leading-Edge Cluster" competition initiated by the German Federal Government. One of the main objectives of the Software-Cluster projects is the enablement of small- and medium enterprises (SME) to play an essential role in business related software development. Here, especially, the development and distribution of innovative software services are in the focus. The projects within the Software-Cluster realized that USDL is very important for describing services in a comprehensive fashion, both for exploitation purposes but also for making the services comparable to each other. Based on requirements (coming from the software industry and the

logistics domain, in cooperation with representatives from a partner cluster) an cloud-based editor has been developed that fulfills the special needs of SMEs. The work here was accompanied by various activities, for instance common workshops of partners representing different expertise and domains (see http://www.linked-usdl.org/node/227 as an example) - such as logistics or software engineering. Furthermore technical mechanisms for (semantic) service discovery, service storage and service publication will be implemented in order to easen the exploitation capabilities of services. FIWARE contacts: WP3 (Applications and Services Ecosystem)

8.2.3.3 *es.Internet*

FIWARE has established a collaboration with the Spanish Platform es.internet whose objectives are

- Ensuring coherence of action and avoid fragmentation of efforts economies of scale to have a sound competitive position
- Promoting the collaboration between industry and academia ensuring better planning, with special focus on SMEs, who could benefit of the traction effect
- Guaranteeing continued funding from the public administration allow a long-term investment in R+D+i reducing the associated risks.
- Raising awareness of the importance of the development of Internet showing the applicability of the net in many social services which might greatly enhance their quality of life.
- Improving the regulatory framework, Ensuring interoperability of systems, terminals and networks facilitating the standardization work.
- Promoting internationalization of Spanish industry participation in international R&D programmes.

Particular attention is given to the promotion of PPP activities within Spain and try to assure the maximum impact of the results into the Spanish industrial landscape. A list of Spanish projects and actions related to the PPP has been produced[26]

This industrial platform was formed several months ago and already counts with a very important participation of Spanish Industry with more than 400 members.

The platform has recently held the IV General Assembly in a very significant event with presence of the highest representatives of the Spanish administration [27]. A central element of the event was the three presentations made by FIWARE [28], [29] [30] where the main objectives and current activities were summarized

8.2.3.4 *Latin American Platforms and Future Internet*

The last edition of FIA (Poznan) was quite useful for FIWARE to initiate further cooperations that were not initially considered in the project. That has happened for example around Future Internet Initiatives in Latin American countries. The EU-funded project FIRST ([31]) promotes the cooperation between Europe and Latin America in the field of Future Internet and ICT

components. Poznan gave us the opportunity to express our views in the second session of the FIRST meeting (Session 2: The European Perspective on the International Cooperation with Latin America; check further information in[32]).

This opens the following potential channels for FIWARE (even if they have to be explored to check the alignment with the FIWARE strategy):

- PLATA: The Argentine Future Internet Technology Platform ([33])
- MACHI: The Chilean Technology Platform of Future Internet ([34])
- RECIIF: The Colombian Future Internet Technology Platform ([35])
- BRA-FIP: The Brazilian Future Internet Technology Platform ([36])
- the Mexican Future Internet Technology Platform (still under definition)

8.2.3.5 *LoFIP - Logistics Future Internet Platform*

The German Hightech.NRW project "LoFIP - Logistics Future Internet Platform" has the goal of developing a software platform enabling an easy realization of software-based, federated control centers for operative logistics processes, based on innovative Future Internet technologies.

The FIWARE WP3 Application and Services Chapter is supporting LoFIP in adopting SAPs Marketplace Generic Enabler for a logistic-specific use case which demonstrates how challenges during daily tours of parcel collection at business customers can be better solved with the means of FI-enabled Control Centers, thus e.g. including the resolution of ad hoc transport needs through integration of access to spot markets for transport capabilities into the control center

Further information can be found under: http://www.lofip.de

8.2.3.6 *Other*

As it can be seen in the Dissemination section some presentations have been made at International level. FIWARE has not yet defined an strategy for International cooperation, has it has been mentioned in this document, but all the opportunities that are appearing make us believe that there could be a good business case there. So far we have accepted invitations to disseminate and promote the projects and its results so that we can keep the interest and the attention of the research community that could be -later on- contacted for the purpose of evaluation and validation of the FIWARE GE and APIs.

Brazil seems especially interesting for this (so far, besides the connection through the Latin American platforms our collaboration has been triggered by research in *Trust and Security*: see presentation made at the BIC Workshop in the IWT 2011). [37]

In the remaining part of 2011 there are plans to present our activities in the coming BIC workshops that will be held in South Africa ([38]) and India ([39]).

Other interesting topic that FIWARE has followed in the last months is the one of **Smart Cities**. We think that the technology and the platform provided by FIWARE will be a very relevant asset

for the development of Smart Cities applications. Furthermore, some of the technology pillars of FIWARE are the ones that people usually associate to this Smart City concept (ex. IoT). In the last months there have been events around a possible EIP on Smart Cities. This iniative as such is mainly run by DG Energy and DG TRANSPORT, even if DG INFSO is the third "leg" of the "animal". FIWARE will try to work at political level to make an impact on the current development of that concept and make it become a more generic one, where applications on energy efficiency and transport are complemented by egovernment services to citizens and public servants, services on education, tourism, safety and many other fields that take place in the context of cities and their citizens. Integration, interoperability and Interaction are words starting with "I" that make clear that another word starting with "I", ICT, should be the basis for all these developments. FIWARE will go on pushing these ideas in the future.