

**FI-ICT-2011-285135 FINSENY****D9.2 v1.0*****FINSENY Dissemination Report*****Contractual Date of Delivery to the CEC:** 30.04.2013 (*Month 24*)**Actual Date of Delivery to the CEC:** 02.05.2013 (*Month 25*)**Author(s):****Participant(s):** NSNF, NSNG1, Siemens, Telefonica, B.A.U.M., VDE/DKE**Work package:** *WP 9: Project Management***Estimated person months:** 3**Security:** PU (Public)**Nature:** R (Report)**Version:** 1.0**Total number of pages:****Abstract:**

This document describes the overall dissemination actions taken by the FINSENY project in the time frame 4/2011 – 4/2013 on project and FI-PPP level. In addition, the project contributed also to standardisation and regulatory bodies, which is also described in the document.

**Keyword list:**

Smart energy, requirement identification, architecture development, FI-PPP, dissemination, standardisation, regulation

**Disclaimer:**

Not applicable.

## Executive Summary

The FINSENY project as one of eight use case projects is part of Phase I of the Future Internet Public Private Partnership (FI-PPP) Programme of the EU Commission. The main objectives of the FI-PPP are to contribute to the development of solutions for societal challenges. In that context the project was dealing with the strategic area of Smart Energy. It was very timely in a phase, where Europe is starting to change and renew its approach to energy generation and consumption.

In order to disseminate the FINSENY project ideas, concepts, specifications and results the consortium employed a wide range of means to promote the awareness of its progress. The activities included publications and the presentations of papers, dissemination of research reports, organising workshops, and last but not least contributions to standardisation and regulatory bodies through project partners. The major results from the dissemination activities are presented in this document, including:

- **Public Website:** All public deliverables from the project are accessible via this website.
- **Press Releases:** The joint Press Release (English) and the local Press Releases in national languages were launched in Finland, France, Germany, Greece, Ireland, Italy and Spain.
- **Promotional material:** A Leaflet, a Flyer, several Posters, two roll-up Posters, and two videos were prepared and used in various events.
- **White Paper:** White Paper “FINSENY Vision, Mission and Strategy” was prepared to clearly position the project and its ideas with respect to Future Internet.
- **Publication of Papers:** A great number of papers and articles were released to enlarge the awareness of the technology and applications towards a wide community.
- **FINSENY Workshops:** Several workshops were organised with a group of industrial players (Smart Grid Stakeholder Group, SGSG) and in the context of conferences.
- **Contributions to Standardisation:** The links to standardisation activities on European level were an opportunity and of great interest for FINSENY, and vice versa.
- **Interactions with other FI-PPP projects:** FINSENY interacted with other FI-PPP projects via the FI-PPP Steering Board and Architecture Board, and in other events organised by the European Commission and by the CONCORD and FI-WARE projects.
- **Presentation slideset:** This slideset was a key document disseminated by the Consortium as a whole and by each Consortium partner. It was continuously updated during the project lifetime.
- **Final FINSENY Event:** The final dissemination event was organised in cooperation with the EIT ICT Labs (European Institute of Innovation and Technology) on 10<sup>th</sup> – 11<sup>th</sup> April, 2013, Berlin. The event presented the main outcomes of the FINSENY project, respective activities in EIT ICT Labs, and also the new activities that will be further developed in the FINESCE project during Phase II of the FI-PPP programme.

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## 1. Introduction

The FINSENY project as one of eight use case projects is part of Phase I of the Future Internet Public Private Partnership (FI-PPP) of the EU Commission. The main objectives of the FI-PPP are to contribute to the development of solutions for societal challenges such as climate change, energy, elderly society and transport and logistics. In that context the project has addressed the strategic area of Smart Energy. The FINSENY Mission has been to demonstrate how the open Future Internet Technologies can enable the European Energy systems to combine adaptive intelligence with reliability and cost-efficiency. It has analysed the specific scenarios on that area, identified the ICT requirements coming from the energy sector and developed the key building blocks of the architecture of the Smart Grid system.

The ICT challenge of the Smart Energy system is to exchange information across multiple domains with high reliability, availability and security, among devices and between subsystems of diverse complexity. In addition to interoperable communications between such elements, the future Smart Energy systems will rely on the availability of access and correct configuration of systems across the ownership and management boundaries (such as the boundaries between energy management systems, energy markets, electricity distribution with distributed resources and the boundaries between interactive customers with smart meters, smart appliances and electric vehicles).

Future Internet technologies for Smart Energy infrastructures will need to be built by the ICT industry, deployed by the energy industry and used by smart energy users (end customer side as well as energy utilities). In order to reach the maximum impact of the results, the FINSENY consortium has employed a range of means to promote the awareness of its progress. That has included publications and presentations of papers, dissemination of research reports, active contribution to research fora and last but not least to standardisation and regulatory bodies through project partners. This dissemination of knowledge has taken place in accordance with the procedures and terms of confidentiality and approval procedures defined in Grant Agreement, Annex II – General Conditions, and the Consortium Agreement.

## 2. Dissemination actions and their impact

This section presents the dissemination activities which were carried out in the FINSENY project.

### 2.1 Project Public Deliverables

The project public deliverables as defined in the Description of Work have been submitted by the Coordinator, accepted in the regular project reviews and made available to a large community via the project Web site (<http://www.fi-ppp-finseny.eu/deliverables/>). Those deliverables are listed in Table 1 below.

Deliverable No.	Deliverable name	Delivery date (project month)
D1.1	SGSG Workshop 1 results	M3
D1.2	Assessment summary of ongoing European projects and community activities (issue 1)	M6
D1.3	Assessment summary of ongoing European projects and community activities (issue 2)	M12
D1.4	SGSG Workshop 2 results	M12
D1.5	SGSG Workshop 3 results	M18
D1.11	Specification of needed security services for the scenarios	M24
D2.1	Distribution Network Scenario building blocks	M4
D2.3	Distribution Network Functional ICT Architecture description	M24
D3.1	Microgrid Scenario Building blocks	M4
D3.3	Microgrid Functional ICT Architecture description	M24
D4.1	Smart Buildings “scenario” definition	M4
D4.3	Smart Buildings Functional ICT Architecture description	M24
D5.1	Electric Mobility Scenario Building Blocks	M4
D5.3	Electric Mobility Functional ICT Architecture description	M24
D6.1	Electronic Marketplace for Energy building blocks	M4
D6.3	Electronic Marketplace for Energy Functional ICT Architecture description	M24
D7.1	First set of consolidated ICT requirements to the Architecture Board	M6
D7.2	ICT Requirements specifications	M15
D8.1	FINSENY Experimentation Lab	M12
D8.2	Experimentation results	M18
D8.3	Selected domain specific enablers specification	M24
D9.1	FINSENY project presentation and dissemination plan	M4
D9.2	FINSENY dissemination report	M25

**Table 1: Project public deliverables**

A few FINSENY deliverables are “Restricted” to participants in FI-PPP. With respect to the sustainability of FINSENY results for FI-PPP Phases II and III, the public and restricted deliverables will be available via the document server, which is provided by the CONCORD Coordination Action. All public deliverables will be available on the FINSENY web site: <http://www.fi-ppp-finseny.eu/deliverables/>

### 2.2 Public Website

A public project website is available at [www.fi-ppp-finseny.eu](http://www.fi-ppp-finseny.eu), to be used as a key vehicle of dissemination and interaction with the public who seeks information about the FINSENY Project and its areas of work. The website was opened in August 2011 and will be accessible until April 2015. It is also linked with the FI-PPP website at <http://www.fi-ppp.eu/>.

The website is structured into a few main pages showing the key items to be presented. They are somehow self-explanatory: Home, Consortium, Deliverables, Publications, News, Links, Contacts, Standardisation and SGSG (Smart Grid Stakeholder Group).

Besides giving information on the project, the website is also used as a key vehicle to make all the public deliverables available, as well as other public reports that the project produced.

### 2.3 Press Release

A Press Release, prepared by a group of partners within the consortium, was launched by the Project Coordinator in October 2011. This Press Release was also translated to local languages and launched by several partners in other countries. The local Press Releases were launched in Finland, France, Germany, Greece, Ireland, Italy and Spain (<http://www.fi-ppp-finseny.eu/news/press-releases/>).

With these Press Releases, the project made the first steps to its visibility, towards not only the FI-PPP community in particular but also the wider ICT community and vertical sectors in general.

### 2.4 Promotional Material and their Distribution

#### Leaflet and posters, videos

A project leaflet was published in the first months of the project (describing the project) to be distributed in events organised at the European and international level. The flyer consists of 6 pages extended from the FINSENY project presentation and dissemination plan (Deliverable D9.1) and provides details of the project, see Figure 1.

**FINSENY**  
Future INternet for Smart ENergyY

**FINSENY Vision:**  
A sustainable Smart Energy system in Europe, combining critical infrastructure reliability and security with adaptive intelligence, enabled by open Future Internet Technologies.

**FINSENY Mission:**  
Demonstrate by 2015, how Open Future Internet Technologies can enable the European energy system to combine adaptive intelligence with reliability and cost-efficiency to meet, sustainably, the demands of an increasingly complex and dynamic energy landscape.

**FINSENY Work Process:**

1. Specify smart energy use cases, with their associated ICT architecture and applications, in each of the five scenarios
2. Identify ICT requirements (both domain-specific and generic enablers) across all five scenarios
3. Define new solutions and standards (functional ICT architecture)
4. Test results in an experimentation facility as a preparation for a large scale trial

**FINSENY: Shaping Future Internet ICT Platforms for Smart Energy Systems**

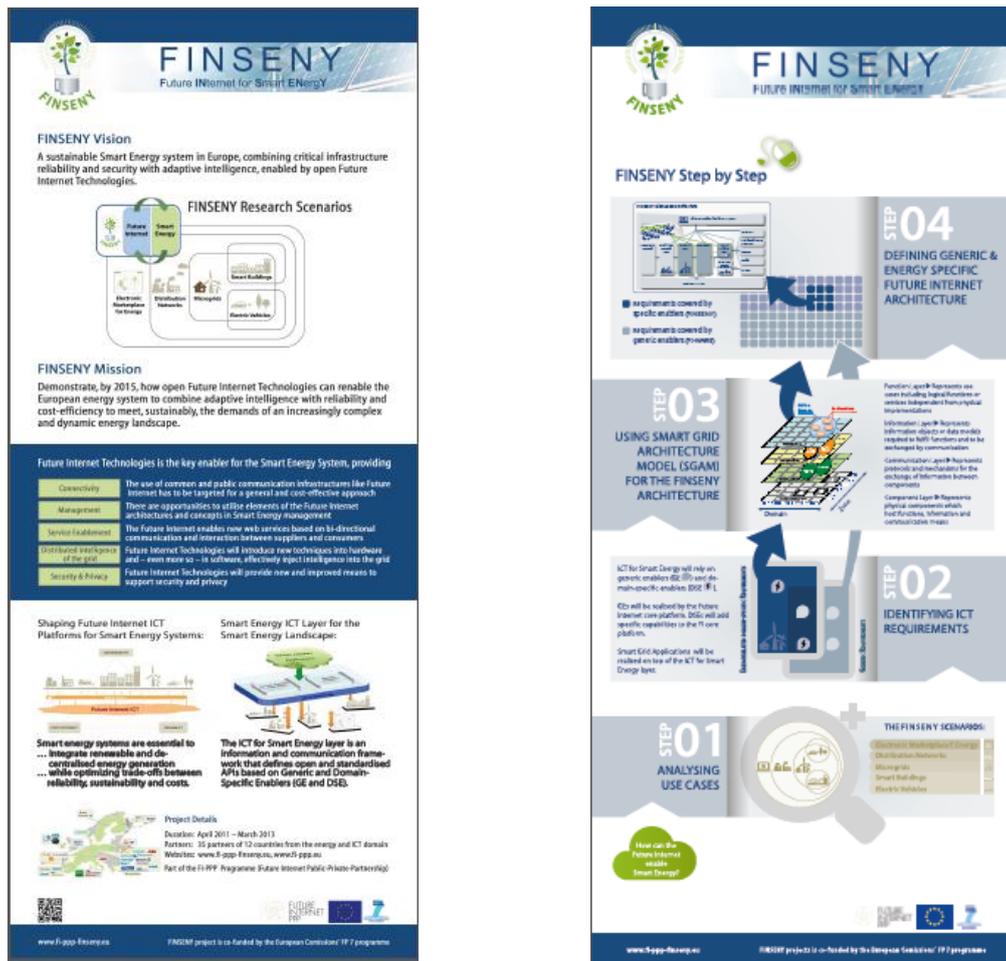
Smart energy systems are essential to

- integrate renewable and de-centralised energy generation
- while optimizing trade-offs between reliability, sustainability and costs

**FINSENY Research Covers Five Scenarios:**

- Distribution Networks:** Design a future ICT solution for Distribution System automation & control to increase energy quality, reliability, robustness and safety and to ease integration of Distributed Energy Resources
- Microgrids:** Design a reliable and cost-efficient Microgrid platform which ensures flexibility, scalability and robustness. The design will be modular and applications/services will be loosely coupled. Devices in or at the edge of the grid (e.g. DERs) will be easily integrated and control/communication networks will be managed to ensure the right level of QoS
- Smart Buildings:** Design of future comprehensive Building Energy Management Systems as flexible edge of the Smart Energy system and as key element for shared Future Internet platforms
- Electric Vehicles:** Design Smart Energy solutions so that electric vehicles will be an integrated part of the energy infrastructure, maximising their benefits to the energy infrastructure
- Electronic Marketplace for Energy:** Design ICT systems to extend web based energy information, demand shaping and energy trading services for the emerging energy market players





FINSENY roll-up posters for the FI-PPP large event at Barcelona, February 2013

Figure 2: Project posters

**Video**

To improve the dissemination of FINSENY final results, a video on the FINSENY project was prepared in Q4, 2012, and filmed and edited in Q1, 2013. The short video places the work and results of the FINSENY project in the context of Smart Energy challenges and highlights the implementation of FINSENY plans in the recently started FINESCE field trial project. The film described both deployed experimental and commercial infrastructure in the field as well as laboratory infrastructure available at the sites of academic partners in FINSENY. Filming for the video took place at the headquarters of ESB in Dublin and in several locations in the city, highlighting the extensive investment that ESB has made in infrastructure for electric mobility and in the use of renewable energy sources to charge vehicles. Film material shot at RWTH in 2012 was incorporated into the video during the editing, highlighting the experimental lab facilities available to FINSENY partners.

Both versions of the video are available on the FINSENY Web site:

<http://www.fi-ppp-finseny.eu/wp-content/uploads/2012/08/FINSENY-WMV-960x540-1207121.wmv>

<http://www.fi-ppp-finseny.eu/wp-content/uploads/2013/04/FINSENY-Final-Cut-video.mp4>

**2.5 FINSENY Vision White Paper**

As a response to the first project review in October 2011 the FINSENY consortium published the White Paper “FINSENY Vision, Mission and Strategy” to clearly position the project and its ideas with respect to Future Internet. The White Paper was published in April 2012 and presented on the Hannover Fair 2012. It is available on the FINSENY website:

[http://www.fi-ppp-finseny.eu/wp-content/uploads/2012/05/FINSENY\\_VisionMissionStrategy\\_April\\_2012\\_newLogo.pdf](http://www.fi-ppp-finseny.eu/wp-content/uploads/2012/05/FINSENY_VisionMissionStrategy_April_2012_newLogo.pdf)

It will also be available via the document server, which is provided by the CONCORD Coordination Action.

This White Paper presents the main guiding principles that are governing the FINSENY project approach. It introduces the scope and strategy of the project that seeks to define and test advanced ICT solutions for the Smart Energy within the Future Internet Public-Private Partnership (FI-PPP) Programme. The paper sets out the motivation, vision, mission, strategy and scenario descriptions for the FINSENY project.

The White Paper has been disseminated and published in different media as FI-PPP Snack May 2012, Telefonica collective employee's blog "*La Cofa*", SAP internal community and SAP community network and presented in conferences and workshops (cf. Section 2.10).

## 2.6 Publication of Papers in Conferences and Journals

The intent of publications in selected journals, newspapers, scientific or targeted publications was to enlarge the awareness of the technology, architecture concepts and applications being investigated and experimented, to a wide community and to increase the number of interested people in new solutions. The publications released in this context are listed in Table 2.

No.	Title	Main author	Title of the periodical or the series	Publisher	Place of publication	Year of publication
1	ICT Enablers for Smart Energy	J. Riedl, K. Eger, W. Mohr, L. Karg	ServiceWave 2011	Springer LNCS	Poznan, Poland	2011
2	FINSENY: Future Internet for Smart Energy	Jonas Fluhr, Fiona Williams	Unternehmen der Zukunft		Germany	2011
3	Middleware for Energy Aware Appliances	Theodore Zahariadis, Menelaos Perdikeas, Fotis Chatzipapadopoulos, (Synelixis); Javier Lucio Ruiz-Andino, Maria Angeles Barba (Telefonica)			2 <sup>nd</sup> Workshop on Energy Efficient Buildings (eeBuildings) Data Models, Sophia-Antipolis	2011
4	Future Internet Requirements for Microgrid Development	Kolja Eger, Jürgen Götz, Rainer Sauerwein, Roberto del Olmo Arce, Sebastian Kosslers	Future Networks & Mobile Summit 2012		Berlin, Germany	2012
5	Designprinzipien und Anforderungen an die IKT für intelligente Energiesysteme der Zukunft	Kolja Eger, Werner Mohr	VDE Kongress 2012		Stuttgart, Germany	2012
6	"How ICT will shape Smart Grids"	Orange, Gilles Privat	Smart Grids, N. Hadjsaid & J.C. Sabonnadière Editors	Hermes Science Publishing/IS TE		2012
7	Future Internet for Smart Grid	Yvonne-Anne Pignolet, Holger Elias, Timo Kyntaja, Ignacio Martin Diaz de Cerio, Fiona Williams	Future Network & Mobile Summit 2012		Presented paper	2012
8	Future Internet for Smart Distribution Grids	Yvonne-Anne Pignolet, Holger Elias, Timo Kyntaja, Ignacio Martin Diaz de Cerio, Jürgen Heiles	Future Network & Mobile Summit 2012		Presented paper	2012
9	Smart Building Energy Management : A "Future Internet" Perspective	Gilles Privat, M Perdikeas	Future networks and Mobile summit 2012		Berlin, Germany	2012
10	Future Internet for Electric Mobility in the Smart Grid	Jesse Kielthy, Miguel Ponce de León, Fiona Williams, Jonas Fluhr, Matthias Sund	Future Network & Mobile Summit 2012		Presented paper	2012
11	Security Considerations for the Electric Vehicle	Steffen Fries, Rainer Falk	Internet 2012	IARIA	Venice, Italy	2012

	Charging Infrastructure					
12	Ricercatori di tutta Europa in sinergia per lo sviluppo di soluzioni smart per l'energia		Press Release Quotidiano Energia Data Manager Corriere delle Comunicazioni		Italy	2012
13	Extending the Internet of Things	G. Privat	Communications & Strategies	Digiworld/ID ATE	Montpellier, France	2012
14	Representation and Self-Configuration of Physical Entities in Extended Smart Grid Perimeter"	Z. Hu, G. Privat	IEEE PES Innovative Smart Grid Technologies (ISGT) Conference		Berlin	2012
15	Future Internet for Smart Distribution Systems	Yvonne-Anne Pignolet, Holger Elias, Timo Kyntaja, Ignacio Martin Diaz de Cerio and Jürgen Heiles	IEEE PES Innovative Smart Grid Technologies (ISGT) Conference		Berlin	2012
16	A Marketplace-Based Approach to Demand-Side Management in the Smart Grid	Luigi Briguglio, Massimiliano Nigrelli, Frank Eichinger, Javier Lucio and Valter Bella	ERCIM news	ERCIM	Biot, France; <a href="http://ercim-news.ercim.eu/en92">http://ercim-news.ercim.eu/en92</a>	2013
17	Information System Architecture for the Interaction of Electric Vehicles with the Power Grid	Jonas Fluhr, Günter Schuh, Martin Birkmeier, Matthias Sund	9th IEEE International Conference on Networking, Sensing and Control	ICNSC	Accepted paper	2013
18	DSM of Electric Vehicle using Future Internet	Jesse Kielthy, Anthony Kiely, Cathal O'Connor, Miguel Ponce de Leon, Mark Daly, John Howard, Jonas Fluhr, Matthias Sund	2 <sup>nd</sup> International Conference on Smart Systems, Devices and Technologies	SMART13	Accepted paper Rome, Italy	2013
19	FINSENY contributions to the use of XiPi	Jesse Kielthy, Fiona Williams, Werner Mohr	INFINITY XiPi leaflet			2012
20	Data Analysis Challenges in the Future Energy Domain	Frank Eichinger	Computational Intelligent Data Analysis for Sustainable Development	Chapman and Hall/CRC	Boca Raton, USA; <a href="http://digbib.ubka.uni-karlsruhe.de/volltexte/1000034312">http://digbib.ubka.uni-karlsruhe.de/volltexte/1000034312</a>	2013
21	Future Internet in Smart Energy Systems: An Experimentation	Mohsen Ferdowsi, Marija Stevic, Bettina Schäfer, Antonello Monti	IEEE Transactions on Smart Grid, Special Issue on Control Theory and Technology in Smart Grid	IEEE	Submitted paper	April 2013
22	Securely connecting Electric Vehicles to the Smart Grid	Steffen Fries, Rainer Falk	IARIA Journal on Advances in Security	IARIA	<a href="http://www.iariajournals.org/security/index.html">http://www.iariajournals.org/security/index.html</a>	2013
23	Marketplaces for Energy Demand Side Management based on Future Internet Technology	Luigi Briguglio, Frank Eichinger, Massimiliano Nigrelli and Javier Lucio Ruiz- Andino	Computing Research Repository (CoRR)	ArXiv.org – Cornell University	Ithaca, USA: <a href="http://arxiv.org/abs/1304.5346">http://arxiv.org/abs/1304.5346</a>	2013

Table 2: Project publications

## 2.7 FINSENY Workshops and Presentations

### Smart Grid Stakeholder Group (SGSG)

A main joint dissemination activity of the FINSENY consortium took place via the group of industrial players, the **Smart Grid Stakeholder Group (SGSG)**, which is addressing organisations beyond the FINSENY consortium and event beyond FI-PPP. Formed in June 2010 ahead of project start in April 2011, the 'Smart Grid Stakeholder Group' (SGSG) is an open group of industrial players interested in the

Smart Energy area. The number of participating organisations has grown to over 60. Further developing the SGSG and organising the information exchange between the SGSG and the project is a major activity in FINSENY. A close link with the SGSG has been established to foster the information exchange between the whole European Energy and ICT community and to receive feedback on the project results and concepts.

FINSENY organised the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> SGSG workshop to present project results and other Smart Grid activities in order to maximise exposure and participation in the smart energy community as well as to receive feedback. All information from these workshops were recorded in the deliverables D1.1, D1.2 and D1.3 (SGSG Workshop results), which are available at the project website. Industrial market players (manufacturers, service providers, etc.) from Europe and beyond were invited to these events, to get detailed information on achieved and planned project results and to provide the project with their inputs (visions, alternative solutions). An attendance of about 50 – 60 targeted delegates were participating to the events. The first workshop organised by FINSENY took place on 13.07.2011 in Munich, the second one on 1.2.2012 in Berlin and the third one on 24.9.2012 in Munich.

The main tasks of the SGSG are:

- Foster information, knowledge exchange and networking between the Smart Grid, energy production, distribution and consumption, and the ICT industry. Act as a forum for information exchange between experts and champions in the related areas of interest that comprise the Smart Grid.
- Identify business & research cooperation opportunities in European and national programs and coordinate participation in the funding programs wherever appropriate.
- Stay in contact with relevant players, communities, the relevant European project activities (FP7, national projects, FIA, FiArch, ...) and assure a high awareness of their results and open issues.

The following points provide a short summary how these tasks are fulfilled by the FINSENY project:

- Present, discuss and improve intermediate results of the FINSENY project, e.g. with a focus on the scenario evaluation, the ICT requirements and architecture plus trial candidates in the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> SGSG Workshop, respectively.
- Collect detailed feedback by SGSG members in and before the workshops, e.g. by parallel sessions on dedicated topics, web-based evaluation questionnaires and review of recommendations by SGSG in follow-up workshops.
- Align with European standardisation activities, e.g. with presentations by VDE on the CEN/CENELEC/ETSI Smart Grid-Coordination Group.
- Exchange information and align with other on-going research and industry projects in the Smart Grid arena, e.g. GRID+, ISGAN, RegModHarz, OpenNode and ESB.
- Inform SGSG on the FI-PPP Programme as a whole, e.g. with presentations from INFINITY and FI-WARE.
- Provide a platform to present new research opportunities or views by new members of the SGSG, e.g. with presentations by TNO and Tecnalía.

The Smart Grid Stakeholder Group has improved the mutual understanding between the energy and ICT industries over the last three years. The conversion of the energy system is a long-term project. Thus, the need to share new technological, marketing, business and regulatory/standardisation information is on-going and it is planned to continue the SGSG beyond the lifetime of the FINSENY project. The 8<sup>th</sup> SGSG workshop will take place on May 13, 2013, in Salzburg.

### **Other workshops and presentations**

Many project presentations were given in different conferences and events, which have produced a high impact in the community. FINSENY has been invited to present its vision, perspectives and outcomes in several conferences and events. The FINSENY participation in workshops, conferences and events has been more extensive than planned. This demonstrates the importance of the smart energy domain for our societies and countries with respect to necessary changes in energy generation and consumption due to the impact of CO<sub>2</sub> emissions and climate change.

The impact of FINSENY contributions can be summarised as follows:

- Further publication of results in different media after an event: Like in the ICT for sustainable homes workshop in Nice in 2011.
- Contribution to the Future Internet community: As the participation in FIA workshops, 2011 and 2012, and other FI-PPP events as the Instant Mobility workshop or the project participation in MWC 2013 and FI-PPP Large-Scale Event in Barcelona in 2013. A Pre-FIA FINSENY workshop will be organised also in the context of FIA 2013 in May even after the project finishes its technical work. This workshop will consist of two sessions, 90 min each. The first session will focus on the FINSENY results and hand over to FINESCE (FI-PPP Phase II follow-up project), and a presentation from INFINITY. The second session with a Panel discussion will focus on FINESCE “what will be the next big thing in Smart Energy?”
- Contributions to standardisation bodies: As the participation in the use case workshop (VDE/DKE) of the SG-CG (Smart Grid Coordination Group) Sustainable Processes WG, or the ZigBee Home Automation interoperability events, contribution on ETSI M2M workshops or the presentation of several papers to IEEE standardisation.
- Influence on the energy industry partners about how the Future Internet technologies can provide solutions for them: E-energy congress, E-World, BMVIT strategy workshop, Hannover fair, Future Networks & Mobile Summit 2011 and 2012, Key Energy Fair, VDE and VDI congresses, New Century Cities Zaragoza 2012, Green eMotion Stakeholder group meeting or the Mobile World Congress 2013.
- Influence on the public sector and regulators about how Future Internet technologies can provide solutions and the related regulation issues: Hannover fair, Future Networks & Mobile Summit 2011 and 2012 and the Smart Grid Coordination Group.
- Influence outside Europe with FINSENY participation: As in our participation in EuroAfrica-ICT, UTC Latin America conference and Canada-Italy Smart grid workshop.
- Building networking on interest about the Future Internet and Smart Grid: With FINSENY participation in every of these events.
- Influence on decision-makers with responsibilities for telecoms: FINSENY participation in the Canadian Utility Telecom Conference or EUTC conferences.

The complete list of FINSENY participation in workshops, conferences and events is listed in Table 3 below.

NO.	Workshop/Conference Name	Title of contribution	Date	Place	Type of audience <sup>1</sup>	Size of audience
1	Fourth Future Internet Cluster Workshop on “ICT and Sustainability”	Smart Energy need Smart Information Technology – Smart Information Technology needs the Future Internet	16/05/2011	Budapest, Hungary	Experts from the Future Internet community	50
2	Future Internet Summit, FI-PPP session, Luxembourg	Panel presentation EU FP7 FI PPP FINSENY (Future INternet for Smart ENergy) – Smart Energy needs Smart Information Technology / Smart Information Technology needs a Future Internet	06/06/2011	Luxembourg	Experts from the Future Internet community	80
3	Usage Area Workshop on the EXFI project	Coordination of the workshop	28/06/2011	Brussels	Scientific community & Industry	
4	BMBF Future Internet conference	Participation and networking	5-6/07/2011	Berlin	Experts from the Future Internet community	
5	Future Networks & Mobile Summit	Panel presentation Future Internet:	17/07/2011	Warsaw, Poland	Experts from the ICT and	100

<sup>1</sup> Scientific Community, Industry, Civil Society, Policy maker, Media

		Stairway To Heaven? Future Internet Usage in Other Sectors: Example from an FI PPP Use Case EU FP7 FI PPP FINSENY (Future Internet for Smart Energy)			Future Internet community	
6	5 <sup>th</sup> Smart Grid Stakeholder Group meeting	All FINSENY scenarios	13/07/2011	Munich	Industry	42
7	EuroView 2011	With the Future Internet towards a Smart Grid	02/08/2011	Würzburg, Germany	Scientific community & Industry	Ca. 60
8	Presentation of the electric mobility scenarios at the Bitkom Smart Grid Working Group meeting.	Electric Mobility Scenarios	26/08/2011	Berlin	ICT and Energy sector actor representative s	About 20
9	Presentation of initial plans for field trials to BMWi	Initial Plans for field trials	21/09/2011	Berlin	German Ministry of economics senior representative s	2
10	"ITG Fokusgruppe Energieinformationsnetze Arbeitsgruppe Energiedaten" (ITG focus group energy information networks WG energy data)	FINSENY – Future Internet for Smart Energy	23/09/2011	Munich, Germany	Scientific community & Industry	5
11	ISAP 2011	FINSENY – Future Internet for Smart Energy	26/09/2011	Crete, Greece	Scientific community & Industry	
12	IEEE Workshop on "Intelligent Smart Grid Applications and Systems", 16th International Conference on Intelligent System Application to Power Systems	ICT Enablers for Smart Energy	25- 28/09/2011	Hersonissos, Crete, Greece	Experts from the smart energy community	-
13	Münchener Kreis conference on smart energy	Participation and networking	29/09/2011	Berlin	ICT and Energy sector actor representative s	
14	BMWi AG Intelligente Netze und Zähler, Berlin,	Presentation to show the practical relevance of the theoretical use case methodology	12/10/2011	Germany, Berlin	Scientific community & Industry	
15	ICT4SH	FINSENY 1 <sup>st</sup> Workshop	25/10/2011	Nice, France	Scientific community & Other EU projects	
16	ICT for Sustainable Homes	The « Smart Home Grid” as a prototype Smart Grid”	25/10/2011	Nice, France	Industry	250
17	ServiceWave 2011 conference	ICT Enablers for Smart Energy	25- 26/10/2011	Poznan, Poland		120
18	Future Internet Assembly	Future Internet Architectures – EU FP7 FI-PPP FINSENY (Future Internet for Smart Energy)	26/10/2011	Poznan, Poland	Experts from the Future Internet community	150
19	2 <sup>nd</sup> Workshop on Energy Efficient Buildings (eeBuildings)	Organising the session “Middleware for EupP (Energy using or producing Products), White goods, HVAC, Storage and Micro Renewables	26- 28/10/2011	Sophia Antipolis, France	Experts from the energy community	
20	2 <sup>nd</sup> Workshop on Energy Efficient Buildings	Middleware For Energy Aware	27/10/2011	Nice, France	Academic- Industry	50

	(eeBuildings) Data Models,	Appliances				
21	ETSI M2M Workshop	M2M data management (presentation linked to standards contribution)	27/10/2011	Sophia-Antipolis, France	Industry	500
22	ZigFest: ZigBee Home Automation interoperability event	FINSENY WP4 scenarios/use cases specification went through the test of interconnectivity at application layer	29/11/2011	Torino, Italy	Scientific community & Industry	
23	IEEE PES ISGT 2011 Europe. Panel session on "Energy Services for local communities"	Future Internet for Smart Energy	07/12/2011	Manchester, UK	Scientific community & Industry	Ca. 40
24	Smart Grids for flexible management of energy demand.	FINSENY presentation	12/12/2011	Milano, Italy	Scientific community & Industry	
25	Future Network and Mobile Summit 2011	Papers on the FINSENY scenarios	12/2011	Berlin	Public	unknown
26	Utilities Telecom Workshop of EC	Comments on critical infrastructure	11/01/2012	Brussels	EC, Telecoms, Utilities	App. 25
27	Use Case Workshop (VDE/VKE)	Report Use Case Collection, Management, Repository, Analysis and Harmonisation from SG-CG	26/01/2012	Frankfurt, Germany	Industry	
28	6 <sup>th</sup> Smart Grid Stakeholder Group Meeting	FINSENY – Challenging ICT Requirements for a Smart Grid	01/02/2012	Berlin, Germany	Industry, Smart Grid community	40
29	"E-Energy beschleunigt die Energiewende" (acatech)	Discussions with related projects	02-03/02/2012	Berlin	Scientific community & Industry	
30	E-World	E-Energy – ICT-based energy system of the future	07-09/02/2012	Essen, Germany	Scientific community & Industry	
31	BMVIT Strategy Workshop	findings from FINSENY	27/02/2012	Vienna	Scientific community & Industry	
32	EuroAfrica-ICT	FINSENY and the role of EUTC in Europe	27-28/02/2012	Johannesburg	Industry	
33	4 <sup>th</sup> JADE workshop Exchange	FINSENY presentation	08/03/2012	Grenoble, France	Industry	
34	UTC Latin America Conference	Outline of the FINSENY project	22-23/3/2012	Rio, Brazil	Industry	
35	Application for Future Network and Mobile Summit 2012	Poster session	Application submission March 2012	Berlin	Public	unknown
36	Hannover Fair: booth presence	Booth dissemination	23-26/04/2012	Hannover	Public	
37	Hannover Fair: E-Energy Corner	Smart Energy and the Future Internet presentations	23-26/04/2012	Hannover	Public	
38	Future Internet Assembly 2012	FINSENY strategy	09/05/2012	Aalborg, Denmark	Scientific community	
39	IARIA conference Internet 2012	FINSENY security for the connection of EV to the charging infrastructure	24-29/06/2012	Venice, Italy	Scientific community & Industry	
40	Future Networks & Mobile Summit 2012	Defining the Opportunities for ICT in Smart Energy	05/07/2012	Berlin	Communication networks community, regulators	40
41	Canadian Utility Telecom Conference	European perspectives, including FINSENY overview	10/09/2012	Vancouver, Canada	Utilities, ICT vendors, service providers, policy makers and consultants	100 (of 200 delegates)
42	7 <sup>th</sup> Smart Grid Stakeholder	Status of different	24/09/2012	Munich,	Industry,	15

	Group Meeting	Smart Grid activities in Europe including OpenNode, ESB activities, RegModHarz and FINSENY		Germany	Smart Grid community	
43	IFIP conference on Sustainable Internet and ICT for Sustainability	Keynote speech on: "Smart Consumption: the Energy@home approach" <a href="http://cnd.iit.cnr.it/sustainit2012/">http://cnd.iit.cnr.it/sustainit2012/</a>	04-05/10/2012	Pisa, Italy	Scientific Community, Industry	200-300
44	IEEE ISGT Conference	Representation and Self-Configuration of Physical Entities in Extended Smart Grid Perimeter	14-17/10/2012	Berlin, Germany		
45	Instant Mobility workshop	FINSENY presentation	21/10/2012	Vienna		
46	The European Utilities Telecom Council	FINSENY: How the Future Internet can enable Smart Energy	25/10/2012	Warsaw		
47	VDE Event	FINSENY: requirements for the ICT for Future Smart Energy	05-06/11/2012	Stuttgart, Germany		
48	Key Energy 2012 Fair	FINSENY booth	07-10/11/2012	Rimini, Italy		
49	New Century Cities Zaragoza 2012	FINSENY: vision about how Future Internet can enable the Smart Energy	08-10/11/2012	Zaragoza, Spain		
50	Canada-Italy smart grid & B2B	Exchange of information on smart grid activities	12/11/2012	Milano, Italy		
51	Green eMotion External Stakeholders Forum	FINSENY: electric mobility	28/11/2012	Stuttgart, Germany		
52	VDI event	FINSENY: electric mobility	10-14/12/2012	Karlsruhe, Germany		
53	Mobile World Congress 2013	FINSENY presentations in FI-PPP booth	25-28/02/2013	Barcelona, Spain	Industry	
54	FI-PPP large event	FINSENY presentation	28/02/2013 – 01/03/2013	Barcelona, Spain	Scientific Community, Industry	
55	NetSoc – 4 <sup>th</sup> Usage Areas Workshop	FINSENY presentation in the session: "Experiences and opportunities"	20/03/2013	Brussels, Belgium	Experts from the Future Internet community, Scientific Community, Industry	36
56	Final FINSENY workshop	FINSENY presentations	10-11/04/2013	Berlin	Scientific Community, Industry, SGSG	
57	PRE-FIA workshop	Presentation of the major results of the FI-PPP Phase I projects FINSENY and INFINITY and their impact on FI-PPP Phase II	7/05/2013	Dublin	Experts from the Future Internet community, Scientific Community, Industry	

**Table 3: FINSENY in workshops, conferences and events**

**Mobile World Congress 2013**

FINSENY has participated in the last Mobile World Congress (MWC) 2013 in Barcelona on February 25 to 28, 2013.

All the Future Internet PPP Phase I projects were present at the Mobile World Congress 2013 and through the results achieved in Phase I shared in presentations, videos, conceptual and real and interactive demos,

the FI-PPP outlined the value proposition of engaging in such an ecosystem based on open interfaces to enable third party services and applications to emerge and develop into new markets enhancing the future competitiveness of Europe’s scientific and technology base on ICT.

FINSENY participation has been focused in participating in the specialised sessions organised by CONCORD in the FI-PPP booth. Several demos and specific presentations were organised during the congress according the following agenda:

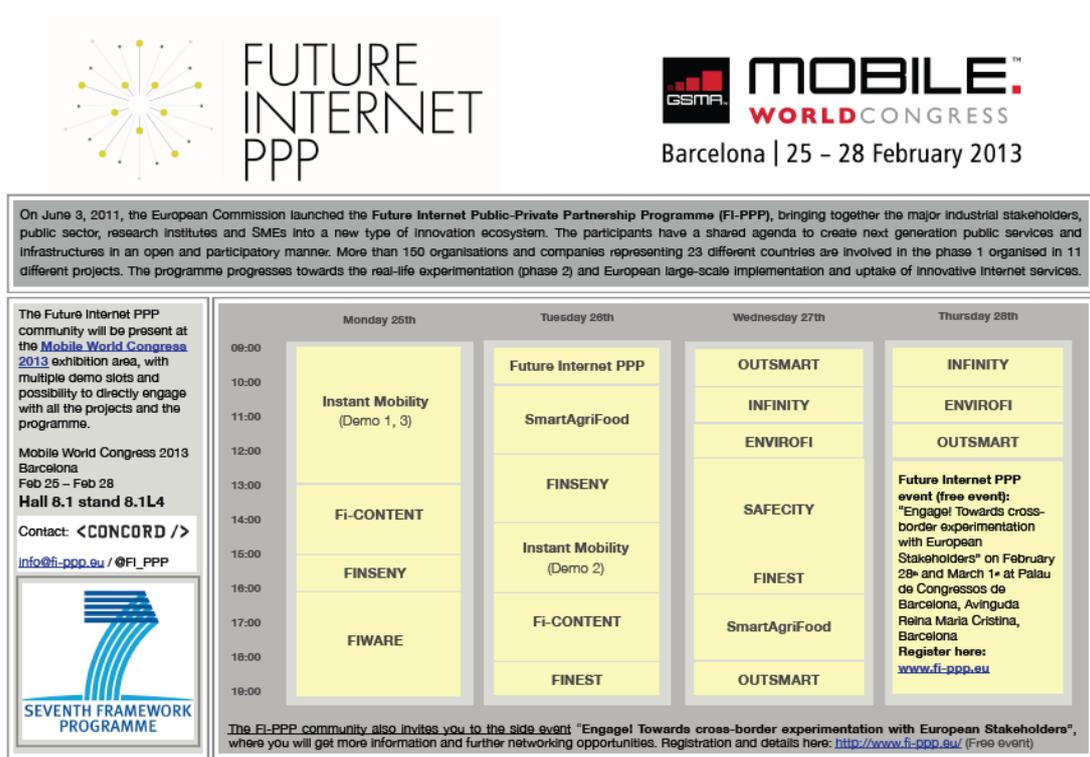


Figure 3: FI-PPP booth programme in MWC 2013

FINSENY presented the official project video (<http://www.fi-ppp-finseny.eu/wp-content/uploads/2012/08/FINSENY-WMV-960x540-1207121.wmv>) in the booth screens available and explained the project to everyone interested on it during the assigned sessions. Several people from industry and institutional sectors were interested in the project.



Figure 4: FINSENY video at FI-PPP booth in MWC 2013

**FI-PPP Large event**

The FI-PPP community and multiple stakeholders representing cities, regions, SMEs and research met at the Palau the Congressos de Barcelona on Feb 28th and Mar 1st in a 2-day event, with the objectives of celebrating and communicating Phase I results, engaging stakeholders towards Phase II and Phase III,

developing the FI-PPP community, and providing detailed information about the technological foundations of the programme (FI-WARE) and the Future Internet Infrastructures (INFINITY).

Mario Campolargo (Director Net Futures, European Commission DG Connect), Prof. Wolfgang Wahlster (Chairman of the FI-PPP Advisory Board), Mr. Manel Sanroma (Director del Institut Municipal de Informatica. Ayuntamiento de Barcelona) and Mr. Carles Flamerich (Director General Telecomunicacions i Societat de la Informacion. Generalitat de Catalunya) opened the event with a series of Keynotes that covered the broader European Picture where the FI-PPP has a role to play, provided insights of what the PPP is doing, and offered the city and regional view of the Future of the Internet. Peter Fatelnig (Deputy Head of Unit Net Innovation – DG Connect) provided details of the more concrete elements of the FI-PPP, covering different aspects of Phase I and the upcoming Phase II and Phase III.

FINSENY presented the project achievements during this first phase of the programme.

The second day of the FI-PPP event was organised in two interesting workshops (FI-WARE workshop and INFINITY workshop), a panel with users of the FI-PPP and it was closed with a engagement session very much focused on the opportunities on Phase II and Phase III.

All the videos and photos of the FI-PPP presence at MWC 2013 and the FI-PPP event are available at: <http://www.fi-ppp.eu/future-internet-ppp-event-and-the-mobile-world-congress-2013-media-files/>

### FINSENY Final Event

FINSENY has organised a final dissemination event in cooperation with the EIT ICT Labs (European Institute of Innovation and Technology) on 10<sup>th</sup> – 11<sup>th</sup> April, 2013, in their labs in Berlin. That event was attended by more than 70 participants representing a wider community beyond the consortium and the FI-PPP.

This large event and workshop entitled “Smart Energy enabled by Future Internet” contained several keynote presentations from:

- the EU Commission,
- the German Federal Ministry of Economics,
- EIT ICT Labs, and
- industry representatives from the energy utility, energy manufacturing and ICT domain.

It included also several round tables where both the Future Internet Community and the Energy Community shared the issues on the Smart Energy paradigm and Future Internet technologies:

- Regulation, Standardisation, Security and Market trends
- New challenges on the smart grid architecture
- Electric mobility
- Smart Building/Smart Market.

The workshop presented the main outcomes of the FINSENY project and also the new activities that will be developed in the FINESCE project during the Phase II of the FI-PPP programme as well as respective activities in EIT ICT Labs. The agenda of this final event was as follows:

### Agenda

Day 1: Wednesday, 10th April, 2013

13:00-13:30	<p><b>Welcome session</b></p> <p>Udo Bub, EIT ICT Labs</p> <p>Werner Mohr, FINSENY</p>
13:30-15:00	<p><b>Key notes session 1</b></p> <p><b>Chaired by Werner Mohr (Nokia Siemens Networks)</b></p> <ul style="list-style-type: none"> <li>• "FI-PPP – Status and future activities". Jesus Villasante (European Commission)</li> <li>• Andreas Goerdeler (Federal Ministry of Economics and Technology)</li> <li>• "EIT ICT Labs Today". Martti Mäntylä (Chief Strategy Officer EIT ICT Labs)</li> </ul>
15:00-15:30	<b>Coffee break</b>
15:30-17:30	<b>Regulation, Standardisation, Security and Market trends</b>

**Chaired by Ludwig Karg (B.A.U.M. Consult GmbH)**

- "Regulating the Smart Energy Future: Key Issues". Roger Duck (EUTC)
- "Smart Grid Standardisation". Johannes Stein (VDE/DKE)
- "Securing the Smart Grid – A bird's eye view on Standardisation". Steffen Fries (Siemens AG)
- "Perspectives of the Smart Energy Market enabled by Future Internet". Alexander von Jagwitz (B.A.U.M. Consult GmbH)
- Q&A Session

Day 2: Thursday, 11th April, 2013

09:00-10:00	<p><b>Key notes session 2</b></p> <p><b>Chaired by Kolja Eger (Siemens AG)</b></p> <ul style="list-style-type: none"> <li>• "Smart Communication – the Enabler for Smart Grids". Guido Helbich (Siemens AG)</li> <li>• "The Utility perspective: Iberdrola Smart Grid deployment". Ignacio Martin Diaz de Cerio (Iberdrola S.A.)</li> </ul>
10:00-10:30	<b>Coffee break</b>
10:30-12:00	<p><b>New challenges to the grid architecture</b></p> <p><b>Chaired by Ariane Sutor (Siemens AG)</b></p> <ul style="list-style-type: none"> <li>• "Future Internet enabling Smart Distribution Systems". Timo Kyntaja (VTT)</li> <li>• "Experiencing New Smart Grid Players - The EIT ICT Smart Energy Experience Labs". Bernhard Schätz (Fortiss)</li> <li>• "How to build a Microgrid platform with Future Internet Technologies". Kolja Eger (Siemens AG)</li> <li>• Q&amp;A session</li> </ul>
12:00-13:00	<b>Lunch</b>
13:00-14:15	<p><b>Electric mobility</b></p> <p><b>Chaired by Fiona Williams (Ericsson GmbH)</b></p> <ul style="list-style-type: none"> <li>• "Enabling ICT for Electric Mobility". Matthias Sund (Alcatel Lucent Deutschland AG)</li> <li>• "Mobility as a Service - going beyond electric car fleets". Christian Müller (DFKI)</li> <li>• "All Signals Green as Ireland's ecar Programme Moves up a Gear". Mark Daly (Electricity Supply Board)</li> <li>• Q&amp;A session</li> </ul>
14:15-14:35	<b>Coffee break</b>
14:35-15:50	<p><b>Smart Building/Smart Market</b></p> <p><b>Chaired by Javier Lucio Ruiz-Andino (Telefonica I+D S.A.)</b></p> <ul style="list-style-type: none"> <li>• "The Future Internet perspective for smart buildings". Gilles Privat (Orange Labs)</li> <li>• "European Virtual Smart Grid Laboratory". Kai Strunz (TU Berlin)</li> <li>• "Energy@home: an eco-system for the energy-aware Smart Home". Fabio Bellifemine (Telecom Italia S.p.A.)</li> <li>• "The Real Time Energy Market Place: an effective way for promoting and sustaining innovation in Next Generation Smart Energy Systems". Massimo Bertocini (Engineering)</li> <li>• Q&amp;A session</li> </ul>
15:50-16:30	<p><b>Outlook next phase</b></p> <ul style="list-style-type: none"> <li>• "Future Activities of EIT ICT Lab". Ariane Sutor (Siemens AG)</li> <li>• "FINESCE - Energy trials showing Future Internet and ICT in action enabling new business opportunities". Fiona Williams (Ericsson GmbH)</li> </ul>

**Pre-FIA Workshop on May 7, 2013 in Dublin**

The FINSENY project applied for a Pre-FIA Workshop on May 7, 2013 in Dublin together with the FI-PPP projects INFINITY (Phase I) and FINESCE (Phase II). This workshop takes place after the end of the project lifetime, which is 30th April 2013.

The workshop will present the major results of the FI-PPP Phase I projects FINSENY and INFINITY and their impact on FI-PPP Phase II. The FINSENY presentations will focus in particular on electric mobility and the impact of balancing the grid, where practical trials are planned in Phase II in Ireland. In addition, the trial presentation from the Phase II FINESCE project will extend to European trials in order to demonstrate the use of developed solutions across Europe. The Phase I Coordination Action INFINITY is providing detailed information on potential trial sites, which are relevant for Phase III of the FI-PPP program. The workshop will help to offer technology transfer between program phases and provides networking opportunities.

The workshop targets decision makers from different stakeholders in the smart energy domain in order to make them aware about new opportunities of the technical approach by means of a core platform using Generic Enablers in combination with a limited set of Domain Specific Enablers to provide economic solutions. In addition, the FI-PPP participants involved in Phase II, and those interested organisations, who intend to be part of Phase III, are addressed.

The workshop agenda is as follows:

"Enabling European trials in the Smart Energy Domain"	
14:00-15:30	<p><b>Session 1</b></p> <ul style="list-style-type: none"> <li>• "ICT enabling the increased use of renewable energy in the Electricity Grid – Results from the FINSENY project". Werner Mohr, NSN</li> <li>• " Practical implementation of electric mobility in Ireland - All Signals Green as Irelands eCar Programme Moves up a Gear". Mark Daly, ESB</li> <li>• "Electric Mobility providing options for balancing the electricity grid to energy network operators - Field trial planning results of the FINSENY project". Fiona Williams, Ericsson</li> <li>• "Forget Blind Dates when looking for Phase III partners – find the infrastructure owners you need in XiPi!". Jacques Magen, ITERINNOV</li> </ul>
15:30-16:00	<b>Coffee break</b>
16:00-17:30	<p><b>Session 2</b></p> <ul style="list-style-type: none"> <li>• "Implementing European field trials of ICT enabled Smart Energy concepts in the FINESCE trial". Fiona Williams, Ericsson</li> <li>• "ICT enabling Smart Energy in trials in Ireland". Fergal Ward, InTune Networks</li> <li>• Panel Session: "What will be the next big thing in Smart Energy?" All speakers</li> </ul>

## 2.8 Interaction with other projects

### 2.8.1 FI-PPP Steering Board

Members of the FI-PPP Steering Board are the coordinators of all active FI-PPP projects. In addition, a second representative in particular from the use case projects is also member of the Steering Board and is representing the respective use case sector. According to the Collaboration Agreement the Steering Board has the following main tasks in the FI-PPP level to:

- ensure and monitor the alignment and synchronisation of FI-PPP Program activities and continuously monitor the progress of the FI-PPP Program in order to initiate early actions;
- derive, propose, and agree on FII Program level milestones which shall be aligned with the Commission and monitored with support of the Programme Facilitation and Support Action;
- analyse the reports of the Architecture Board and the Commission reviewers' and observers' comments on an operative level and initiate appropriate actions;
- maintain within the FII Program awareness and a strategic overview of standardisation programs of standardisation bodies relevant to the work of the FI\_PPP Projects as well as looking for opportunities to support standards submissions;
- review the proposals of FI-PPP Projects for potential candidates for the Advisory Board and agree unanimously on representatives on the Advisory Board and cooperate with the Advisory Board;
- decide on the establishment, composition and tasks of a Working Group and approve the results thereof;
- agree unanimously upon making proposals to the Parties for the review and/ or amendment of the terms of this Collaboration Agreement;

- handle and assist upon request in the amicable resolution of inter-project conflicts;
- contribute to:
  - a) solving serious critical situations for the overall success of the FI-PPP Program;
  - b) coherence of the overall FII Program results in the light of the FI-PPP Program objectives;
  - c) plans for the remaining phases of the FI-PPP of the European Union.

Based on these conditions the FI-PPP Steering Board organised its work by monthly meetings (either physical meetings or conference calls).

It supported in the beginning of the FI-PPP in 2011 the finalisation of the FI-PPP Collaboration Agreement and the selection of candidates for the Advisory Group. The means for cooperation between FI-PPP projects were established and continuously improved as well as towards a wider community. The launch of Working Groups, like on Dissemination, Standardisation, Exploitation and Policy and Regulation in 2011 and 2012, are means for improved cooperation.

With respect to the responsibility to monitor the progress of work in FI-PPP the Steering Board started regular status updates of projects and received reports from the Architecture Board.

As a response to the recommendations by the Advisory Board and a mid-term assessment report of the FI-PPP CONCORD in cooperation with Steering Board and Architecture Board representatives developed a FI-PPP vision document, which was finally released in March 2013.

Initiated by the Advisory Board and the mid-term assessment report the Steering Board was involved in discussions to improve the overall PPP governance. A task force of industry members, which was initiated after a meeting between the Commission (Deputy Director General Mr. Stancic) and industry representatives on July 3, 2012, developed recommendations to improve the governance model starting with Phase II of the program. During the Phase II contract negotiations a new Executive Industry Board was established to improve the industry support and participation in FI-PPP. As part of these activities Commissioner Kroes invited in December 2012 in particular industry partners for a CEO meeting on March 11, 2013 in Brussels to discuss a better take-up of results and industry support for FI-PPP. Steering Board members including FINSENY supported the preparation of this meeting.

The Steering Board was involved in 2012 in the development of a MoU between FI-PPP and EIT ICT Labs, which was signed by all partners in FI-PPP. The major dissemination event, which was prepared by the Dissemination Working Group and supported by the Steering Board was the FI-PPP booth at Mobile World Congress 2013 in Barcelona on February 25 to 28 and the following FI-PPP Large-Scale Event in Barcelona on February 28/March 1, 2013. FINSENY participated with a booth and a presentation. On recommendation of the Steering Board each FI-PPP project supported this joint activity by a financial contribution to cover the cost.

In preparation of the second Call for Proposals for Phase II the Steering Board discussed strategies for the structure of the set of Phase II use case proposals and supported the smooth handover between Phase I and Phase II projects by inviting the coordinators of new Phase II projects since February 2013 to Steering Board meetings.

FI-PPP is a new approach of several cooperating projects and comprising more than 160 partner organisations. Therefore, it had to be expected that means for cooperation had to be gained and initial difficulties needed to be overcome. In summary, the FI-PPP bodies managed after a learning curve to set-up a successful cooperation, which is producing useful results.

## **2.8.2 FI-PPP Architecture Board**

The FI-PPP Architecture Board (AB) consists of the technical managers from all FI-PPP projects. The responsibilities of the board include the technical and architectural discussions in the FI-PPP which affect more than one FI-PPP project. It should facilitate the cooperation between the FI-PPP projects on technical matters. The FI-PPP Architecture Board meets monthly, alternating between face-to-face and virtual meetings.

Important tasks of the FI-PPP AB are to derive a common understanding of generic and domain-specific enablers, to define processes and tools to handle requests to FI-WARE, to ensure the information exchange between the projects on architecture, specification, testbed and roadmap and to define the scope of the FI-WARE Open Calls.

The FI-PPP Architecture Board supported the FI-PPP SW Architects Weeks in summer 2012 and the Webinars on Generic Enablers (GEs). This included a FINSENY session at the FI-PPP SW Architects Week in Zurich. All FINSENY scenarios were presented based on their interim results on the functional architecture, and the first ideas on the intended use of FI-WARE GEs were provided to the FI-WARE

project to intensify the interaction between both projects. Furthermore, first tests were run with the FI-WARE testbed to get a better understanding of the functions and performance of each GE. The integration with the Domain-specific Enablers (DSE) is planned for Phase II.

### 2.8.3 Other Interactions

Intensive cooperation at all levels with the other related projects has taken place during the FINSENY project. Apart from the projects in the FI-PPP Programme, other interactions with European funded projects (like ADDRESS, BeAware, BeyWatch, FENIX, PREMIO, SAVE ENERGY, Web2Energy, etc.), national programs (like E-Energy in Germany, Energy@Home in Italy, SG Model Regions in Austria, etc.), and further industrial initiatives have been done.

For this purpose all projects and initiatives were collected in the FINSENY database and reported in deliverable D1.2 and D1.3: “Assessment summary of ongoing European projects and community activities” (Issues 1 and 2) [1], [2]. A reduced set of “Top-runners” projects that are most relevant to FINSENY were selected and reported in these deliverables.

A special statement has to be made with respect to the interactions between FINSENY and other projects that have been selected in Work Package 8 (Domain Specific Enabler and Experimentation) for using their existing capabilities, experience and results for the experimentation of FINSENY DSEs during Phase I. Examples:

- BeyWatch (<http://www.beywatch.eu>): The BeyWatch experimentation lab results have been used in Work Package 8 for the experimentation of the domain specific enabler “Demand Side Manager” defined in Work Package 6.
- The Energy@home project (<http://www.energy-home.it>): The Energy@home project’s infrastructures have been used in Work Package 8 for the experimentation of the domain specific enabler “Supervisory Control as Enabler” defined in Work Package 4 and for the experimentation of the domain specific enabler “Demand Side Manager” defined in Work Package 6.

FINSENY has also interacted with other projects that co-presented with FINSENY in several workshops as Green eMotion project (<http://www.greenemotion-project.eu/>). Both projects have interacted for sharing findings and ideas of the e-mobility aspects in the Future Internet.

The FINSENY project has had several contacts and interactions with other projects and initiatives in order to analyse possible trial candidates for Phases II and III of the FI-PPP Programme.

- ADDRESS (<http://www.addressfp7.org/>): Distribution System Operator (DSO) control system.
- INTEGRAL (<http://www.integral-eu.com/>): Fault Location Isolation and Restoration (FLIR) with Decentralised Energy Resources Participation (including Smart Building interaction – EV HEV –  $\mu$ grid areas).
- REG MOD HARZ as part of the German E-Energy program (<http://www.e-energy.de/en/>). Regenerative model region of Harz: Climate Protection and Energy Efficiency by Modern ICT and Innovative Operation Strategies. The project was also presented in the 7<sup>th</sup> Smart Grid Stakeholder Group meeting organised by FINSENY.
- OpenNode (<http://www.opennode.eu/>): Focused on the electrical distribution grid operation and explores on how to improve the distribution grid monitoring to cope with volatile states in the grid, how to integrate the “smart” substation automation devices to increase the efficiency of the distribution grid, and how to interoperate with the different roles e.g. operation of the smart meters, power and grid operation.
- GRID4EU (<http://www.grid4eu.eu/>): Large-scale demonstration of advanced smart grid solutions with wide replication and scalability potential for Europe.

## 2.9 Standardisation Activities

The standardised interfaces and ICT enablers are major prerequisites for the wide scale and cost-effective introduction of the Smart Grids and provide interoperability between solutions from various vendors. For these reasons standardisation was paid attention to from the very beginning of the project lifetime. Since VDE/DKE as a FINSENY partner is the German mirror body for Smart Grid standardisation in IEC and CENELEC, and because ETSI through its secretariat was presented in the SGSG, the direct link to the Smart Energy standardisation was ensured for FINSENY in addition to partner internal standardisation activities.

In spite of the high number of newly established standardisation groups dealing with smart grids, already a lot of standards are available and are the basis for further developments. Especially the IEC standards from the technical committees 57 “Power systems management and associated information exchange” and 13 “Electrical energy measurement, tariff- and load control” are providing important standards series for the smart grid which are worldwide considered and recognised. On the other hand it has to be ensured that standardisation develops continuously in parallel to the research projects in order to provide necessary new standards as early as possible – especially in this dynamic market.

FINSENY established already at a very early stage its relations to Smart Grid standards, especially to the EU Smart Grid related standardisation mandates. FINSENY used the existing standards as a base and developed new ideas for modification and extension of those existing standards series like IEC 61850 or CIM. FINSENY Work Packages were also interested to support new standardisation fields which were addressed within the FINSENY project like for Microgrids, E-Mobility and Smart Buildings. So the FINSENY research results were contributed to European and International Smart Grid standardisation activities.

Especially the links to the standardisation activities on European level were an opportunity and of great interest for FINSENY, and vice versa. One of the deliverables of the SG-CG (Smart Grid Co-ordination Group) under the standardisation mandate M/490 was the collection and analysis of use cases and the installation of a use case management system. As the definition of use cases was a main objective of FINSENY as well and both projects were initiated from the EU Commission, an early interlink of work did indeed have a high synergy potential as expected. About 100 FINSENY use cases contributed to the M/490 Working Group Sustainable Processes (WG SP) had a strong impact on their deliverable and is also expected to further impact the IEC TC8 use case activities. The interaction on fine tuning of the use case management between FINSENY and WG-SP enhanced the work of both parties. WG SP received feedback from the user side and FINSENY used intensively the use case tools, like templates defined by WG SP. Also the support of other activities of the SG-CG regarding the definition of a European reference architecture as well as the work on the so-called “First set of standards” was beneficial for both sides. The SGAM Model defined by the Working Group Reference Architecture and the existing Smart Grid standards identified by the Working Group First Set of Standards was the base for nearly all FINSENY Work Packages.

FINSENY not only delivered input to M/490 Smart Grid Mandate but also to M/468 for electric vehicle charging, M2M standardisation in ETSI/One M2M and Smart Building related standardisation in Zigbee and HGI. Also the start-up of the next phase of M/490 was tracked.

During the development of Use Cases or Building Blocks, the relation to existing standards was already created, mainly to CLC and IEC but also to other international standards like IEEE. For future developments and a possible second phase the relationships to CLC and IEC standards should be intensified. The more detail is put into the trails the more important will be the input and feedback to such classical standards like IEC 61850.

For more details on the FINSENY interaction with standardisation activities and a list of specific standardisation contributions, please see section 6 in the FINSENY Deliverable D1.6 [3]. Table 4 shows the FINSENY contributions to international standardisation.

<b>Title</b>	<b>Authors</b>	<b>Standardisation Body</b>	<b>Date and Place</b>	<b>Partners</b>	<b>Status<sup>2</sup></b>
ZigBee Interoperability Event	C. Borean, F. Bellifemine.	ZigBee Alliance – Home Automation Profile	17/04/2012 – 19/04/2012	Telecom Italia	Accepted
Contribution to Home Automation Specification and Test Cases	C. Borean	ZigBee Alliance – Home Automation Profile	06/06/2012	Telecom Italia	Accepted
Contributions to the SG-CG SGIS report	Steffen Fries	SG-CG		Siemens	Accepted
Contributions to the SG-CG RA report	Fabio Bellifemine	SG-CG		Telecom Italia	Accepted
Contributions to the SG-CG FSS report	Jürgen Heiles	SG-CG		Siemens	Accepted

<sup>2</sup> Submitted, Presented, Accepted

Contributions to the SG-CG SP report	Alexander von Jagwitz	SG-CG		BAUM	Accepted
Comment resolution of Energy@home related features	C. Borean, A. Ranalli	ZigBee Alliance – Home Automation Profile	15/08/2012	Telecom Italia	Accepted
E@H Test list merged with Home Automation test list;  Home Automation specification refined after testing	C. Borean, P. Castrogiovanni	ZigBee Alliance – Home Automation Profile	From 17/09/2012 to 21/09/2012	Telecom Italia	Accepted
“Definition of physical and virtual entity layers as shared M2M data abstraction layers”	Gilles Privat	ETSI M2M	10/9/2012, Sophia Antipolis	France Telecom / Orange	Contribution number ETSI/M2M((12)21_098  tp://docbox.etsi.org/M2M/M2M/05-CONTRIBUTIONS/2012/M2M(12)21_098_entities-def-for-abstraction.docx
Semantic related M2M definitions & additional-text-for-TR101584	Gilles Privat et al	ETSI M2M	10/9/2012, Sophia Antipolis	France Telecom/Orange	Contributions ETSI M2M (12)22_077 & ETSI M2M (12)22_079 (September 2012)
“Definition of physical and virtual entity layers as shared M2M data abstraction layers”	Gilles Privat	ETSI M2M	Sophia Antipolis,	France Telecom	Contribution number ETSI/M2M((12)21_098  tp://docbox.etsi.org/M2M/M2M/05-CONTRIBUTIONS/2012/M2M(12)21_098_entities-def-for-abstraction.docx
Contributions to “Smart Charging document v0.4”	WP5	CEN/CENELEC Smart Charging WG		WP5	Accepted
2012 #278 rev 0, Home Automation Working Group, Energy@home test lists	C. Borean, A. Ranalli	ZigBee Alliance – Home Automation Profile	Submitted to ZigBee Alliance on Nov. 2012	Telecom Italia	Accepted
2012 #208 rev 1, Home Automation Working Group, HA Protocol implementation conformance pics proforma revision-for 06-4237-10	C. Borean, A. Ranalli	ZigBee Alliance – Home Automation Profile	Submitted to ZigBee Alliance on Nov. 2012	Telecom Italia	Accepted
2012 #204 rev 16, Home Automation Working Group, home-automation-profile-testspecification-revision-for-07-5340-13	C. Borean, A. Ranalli	ZigBee Alliance – Home Automation Profile	Submitted to ZigBee Alliance on Nov. 2012	Telecom Italia	Accepted

**Table 4: List of FINSENY standards contributions**

## 2.10 Other Dissemination Activities

### European Union Dissemination Mechanisms

FINSENY pursued knowledge dissemination and networking with other ongoing related activities by making maximum use of the European Union supported dissemination mechanisms, such as publication of project information on public web sites.

In the following the main EU dissemination mechanisms in the FI domain are summarised.

The project participated in Future Internet Assembly (FIA) events in

- Budapest, May 2011, presentation in a cluster workshop
- Poznan, October 2011, participation in a panel session
- Aalborg, May 2012, presentation is a FI-PPP information day and participation in a panel session
- Dublin, May 2013, organisation of a Pre-FIA workshop on May 7, 2013 (cf. Section 2.7).

FINSENY also organised a workshop at Future Networks & Mobile Summit in July 2012 in Berlin to present results and concepts.

European Technology Platforms in the ICT domain like Net!Works and the Smart Grid ETP were contacted e.g. on the FI-PPP Large-Scale Event in Barcelona in 2013.

In April 2013 FINSENY organised its final event in cooperation with EIT ICT Labs and external speakers from government agencies and other research activities.

These events were used to make the external community aware of FINSENY results on identified ICT requirements, developed architecture concepts and to seek for adoption of concepts in standardisation bodies. In particular in the SG-CG FINSENY impacted the use case definition significantly.

The cooperation between stakeholders from different communities in FINSENY, in FI-PPP and beyond from the energy utility, energy manufacturing, communication service provider, ICT manufacturer, R&D center and university domains enabled a better mutual understanding of opportunities on technical solutions, which can be exploited in system deployment towards a more efficient use of energy, the better integration is distributed renewable energy sources and new business opportunities.

### European Union Conferences & Cluster meetings

FINSENY participated to European Union Conferences and the clustering meetings organised per thematic area. Particularly in what concerns project's technological/scientific dissemination to the annual events organised under the auspices of the European Union, such as the ICT conferences. Apart from paper presentations, the project gave presentations of its results also in exhibition areas.

### FI-PPP snack

FINSENY has contributed to several issues of the newsletter 'FI-PPP snack' as its role to disseminate project outcomes inside the Future Internet community:

- February 2012: publication of two articles, one with the FINSENY vision, and the other with the report on the SGSG meeting in Berlin on 1<sup>st</sup> February 2012, in addition the editorial for this issues was provided by FINSENY,
- May 2012: publication of the report about FINSENY participation in the Hannover Fair 2012 and FINSENY participation in the Future Internet Assembly,
- June 2012: publication of the report about FINSENY general assembly in Grenoble,
- November 2012: publication of the report about the SGSG meeting in Munich on 24<sup>th</sup> September 2012 and publication of the results on FINSENY participation in the VDE Congress on Smart Grids in Stuttgart on 5<sup>th</sup> and 5<sup>th</sup> November 2012.

Moreover, the FI-PPP snack newsletter reports the last News from the FINSENY web site in the "Picks" column of its web page: <http://www.fi-ppp.eu/snack/>

### On-line publications

Several publications have been published online in Telefonica and SAP community networks and blogs having a better dissemination impact inside the companies:

- RCyS Telefonica Blog: Sustainability and Corporate responsibility Telefonica blog report about Telefonica participating in FINSENY project to promote the smart energy.

<http://www.rcysostenibilidad.telefonica.com/blogs/2012/04/30/telefonica-participa-en-el-proyecto-europeo-finseny-para-promover-la-energia-inteligente/>.

- La Cofa Telefonica Blog: FINSENY vision, mission and strategy (parts I and II)  
<http://www.lacofa.es/index.php/general/english-finseny-future-internet-technologies-for-the-smart-energy-ii?lang=en>.
- SAP internal community and SAP community network: FINSENY vision, mission and strategy.
- SAP internal community and SAP community network: FINSENY: How to sustain Energy Supply for the coming decades.

## 2.11 Presentation Slideset

A presentation slide set was prepared introducing the FINSENY vision on Smart Energy, the key developments undertaken in the project, and the reasons why these developments are strategic. This slideset was a key document disseminated by the Consortium as a whole and by each Consortium partner. It was used for overview presentations at different events. The slideset can be downloaded from the FINSENY web page:

[http://www.fi-ppp-finseny.eu/wp-content/uploads/2013/04/FINSENY-results-overview\\_2013.pptx](http://www.fi-ppp-finseny.eu/wp-content/uploads/2013/04/FINSENY-results-overview_2013.pptx)

### 3. Conclusions

The FINSENY project was part of the FP7 FI-PPP Phase I Programme of the EU Commission. It was one of the eight use case projects, which was dealing with the Smart Energy domain. Its main objectives were to

- identify the ICT use cases and requirements from the energy sector perspective for the Future Internet,
- develop the ICT architectures for the different usage scenarios of the smart energy systems,
- contribute to international standardisation, and to
- contribute to the preparation of larger trials in Phase II of the FI-PPP Programme.

FINSENY was cooperating with the other FI-PPP projects in order to identify the generic requirements for the overall ICT platform and to develop the domain specific enablers for the smart energy sector. The project contributed to the core platform project FI-WARE for ensuring that the requirements for the Future Internet from the perspective of the energy domain are taken into account.

The project disseminated its results widely and through a great number of channels in order to initiate and fuel discussions between the energy and ICT communities, and to contribute to the standardisation and regulatory bodies. By investigating the requirements and solutions on several technical and business areas of the Smart Energy, the project contributed to the identification of the new components needed in the Future Internet. They will pave the way to the new era, where the Future Internet is the platform for the economic deployment of distributed and renewable energy resources, and for a more efficient consumption of energy.

## **4. References**

- [1] FINSENY Deliverable D1.2: Assessment summary of ongoing European projects and community activities (Issue 1)
- [2] FINSENY Deliverable D1.3: Assessment summary of ongoing European projects and community activities (Issue 2)
- [3] FINSENY Deliverable D1.6: Report on Standardisation Strategies