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SGSG Workshop 1 Results

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Abstract:
The Smart Grid Stakeholder Group (SGSG) has been established to create a liaison between all the industry organisations involved in the evolution and roll out of the Smart Grid. The Group is open to all industry organisations who have or who intend to have an involvement in the Energy or ICT/Future Internet arena. On 13th July 2011 the 5th SGSG Workshop has been organized by FINSENY. The discussions of this workshop are summarized in the document at hand.

Keyword list:

Smart Grid Stakeholder Group, Smart Energy, Smart Grid.

Executive Summary

Formed in June 2010, the so-called 'Smart Grid Stakeholder Group' (SGSG) is an open group of industrial players interested in the Smart Energy arena. Four meetings of the group were organised since it has been founded, and the number of participating organisations has grown to over 50 organisations. 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.

The main objectives of this fifth SGSG meeting on 13th July 2011 in Munich were to

- share the intermediate FINSENY results with the SGSG and receive their feedback for further consideration, and to
- discuss about further relevant topics for the community: the introduction of the project INFINITY describing how the SGSG members can contribute, the proposal to setup a SGSG Interoperability Working Group, and the introduction of new SGSG members.

Several actions have been agreed on during the meeting. These are:

Action 1
Intensify the interaction between SGSG, FINSENY and INFINITY to benefit from synergies of each others activities, e.g. when performing assessments of ongoing activities and setting up databases.

Action 2
Reflect the comments and contributions from the SGSG on the intermediate results of the scenario evaluation and incorporate them into the FINSENY deliverables.

Action 3
Further evaluate the proposal on establishing a SGSG Interoperability WG and come to a decision latest until next SGSG meeting.

Action 4
Publish information to be presented and discussed at the next SGSG meeting some reasonable time before the meeting, so that the audience has a chance to scan the material beforehand.

The next SGSG meeting will take place in the January/February 2012 time frame.

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Table of Contents

List of Figures

1. Introduction

The main objectives of this fifth SGSG meeting on 13th July 2011 in Munich were to

- share the intermediate FINSENY results with the SGSG and receive their feedback for further consideration, and to
- discuss about further relevant topics for the community: the introduction of the project INFINITY describing how the SGSG members can contribute, the proposal to setup a SGSG Interoperability Working Group, and the introduction of new SGSG members.

To achieve these objectives, the agenda has been setup as described in Section 1.1. To collect the views of the audience on the work done so far within the FINSENY scenario work packages, the participants have been asked for their feedback addressing the questions:

a) Do you agree on the borderline of the respective scenario?

b) Are you missing scenario use cases with significant ICT relevance?

c) Do you know about relevant (European) activities addressing the respective scenario as well, which should be taken into account?

1.1 Agenda

10:00 – 10:15	Introduction & agenda review (Johannes Riedl, Siemens AG)
10:15 – 10:30	Methodology for Smart Energy "Scenario Evaluation" in FINSENY WP2-6 (Kolja Eger, Siemens AG)
10:30 – 11:00	Current status in assessment of on-going European projects & community activities (Ludwig Karg, BAUM Consult)
11:00 - 11:30	Status FINSENY WP2 - Distribution Network scenario (Holger Elias, Nokia Siemens Networks) & Discussion
11:30 – 12:00	Status FINSENY WP3 - Microgrid scenario (Kolja Eger, Siemens AG) & Discussion
12:00 – 12:30	Status FINSENY WP4 - Smart Building scenario (Gilles Privat, France Telecom) & Discussion
12:30 – 13:30	Lunch break
13:30 – 14:00	Status FINSENY WP5 - Electric Mobility scenario (Fiona Williams, Ericsson) & Discussion
14:00 – 14:30	Status FINSENY WP6- Electronic Market Place for Energy scenario (Giusi Caruso, Engineering) & Discussion
14:30 – 14:45	Organization of the SGSG-FINSENY interaction (Kolja Eger, Siemens AG)
14:45 – 15:15	Coffee break
15:15 – 15:30	FI-PPP project INFINITY – An Overview (Christopher Foley, FI PPP INFINITY)
15:30 – 16:00	Interoperability WG (Stephen Pattenden, TAHI)
16:00 – 16:15	Smart Grid @ Tecnalia (Iraide Unanue Calvo, Tecnalia)
16:15 – 17:00	AOB, Wrap-up & Next meeting (Kolja Eger, Johannes Riedl; Siemens AG)

1.2 List of Participants

Name	Organization	FINSENY partner
Ballek, Michaela	BAUM Consult	X
Baumeister, Josef	Bosch Siemens Hausgeräte	
Begaße, Simon	Power PLUS Communications AG	
Bellifemine, Fabio Luigi	Telecom Italia	X
Benze, Jörg	T-Systems	
Caruso, Giusi	Engineering	X
Dillinger, Markus	Huawei	
Eger, Kolja	Siemens	X
Eigenmann, Robert	Huawei	
Elias, Holger	Nokia Siemens Networks	X
Foley, Christopher	TSSG (FI-PPP INFINITY)	X
Fries, Steffen	Siemens	X
Furch, Andreas	Siemens	X
Heiles, Juergen	Nokia Siemens Networks	X
Heldt, Nils	Nokia Siemens Networks	X
Honecker, Hans	Bundesamt für Sicherheit in der Informationstechnik (BSI)	
Huitema, George	TNO	
von Jagwitz, Alexander	BAUM Consult	X
Karg, Ludwig	BAUM Consult	X
Karls, Ingolf	Intel	
kok, jan	Nokia Siemens Networks	X
Liuyalin, Yalin	Huawei	
Mohr, Werner	Nokia Siemens Networks	X
Mohsen, Amjad	Siemens	X
Molto, Asier	Red Electrica Espanola	
Monti, Antonello	RWTH Aachen (FI-PPP FINSENY)	X
Pattenden, Stephen	TAHI	
Plaza, Pierre	Telefonica	X
Privat, Gilles	France Telecom	X
Riedl, Johannes	Siemens	X
Sauerwein, Rainer	Siemens	X
Schitkow, Igor	Busch-Jäger, ABB	X
Schreyer, Oliver	Philips	
Schulz, Egon	Huawei	
Smolka, Thomas	STAWAG	X
Unanue Calvo, Iraide	Tecnalia	
Vierheilig, Norbert	Siemens	X
Vucic, Nikola	Huawei	
Walewski, Joachim	Siemens	X
Williams, Fiona	Ericsson	X
Winter, Christoph	Fronius	
Zahariadis, Theodore	Synelixis	X

2. Presentations and discussion

In this section a detailed summary will be given on the presentations hold during the 5th SGSG meeting and the discussions which came along. This is done by showing some selected slides from the presentations and providing further explanations and background information.

2.1 Methodology for Smart Energy "Scenario Evaluation" in FINSENY

Kolja Eger, Siemens AG.

At first, the setup of the Future Internet Public Private Partnership (FI-PPP) program has been explained. There, the project FINSENY (Future INternet for Smart ENergY) has been mentioned as the usage area project which takes care of selected Smart Energy scenarios (compare Figure 1).

Before going into the details of the first FINSENY results, the methodological approach for evaluating the five selected scenarios "Distribution Network", "Microgrid", "Smart Building", "Electric Mobility" and "Electronic Market Place for Energy" have been presented. This included the description of the different tasks in the FINSENY scenario work packages as shown in Figure 2 and Figure 3: starting with the scenario evaluation in terms of use case collection and description, identifying the ICT requirements, developing a functional ICT architecture for the respective scenario and proposing trial candidates.

Moreover, a step by step approach has been presented (Figure 4) how to identify, select and detail relevant use cases in a most efficient way. There have been already quite a lot of national, European and international project activities addressing similar aspects. To avoid duplicating work and to be able to finish in time, a consequent reuse of results being achieved in such other projects is key.

For a consistent description of use cases throughout the project a use case template has been agreed on. Several templates have been developed in numerous other project activities whereas many of them are very similar. Thus the decision was taken not to invent something new but to take the use case template applied in the Intelligrid project, which is described in detail in IEC/PAS 62559 (Figure 5).

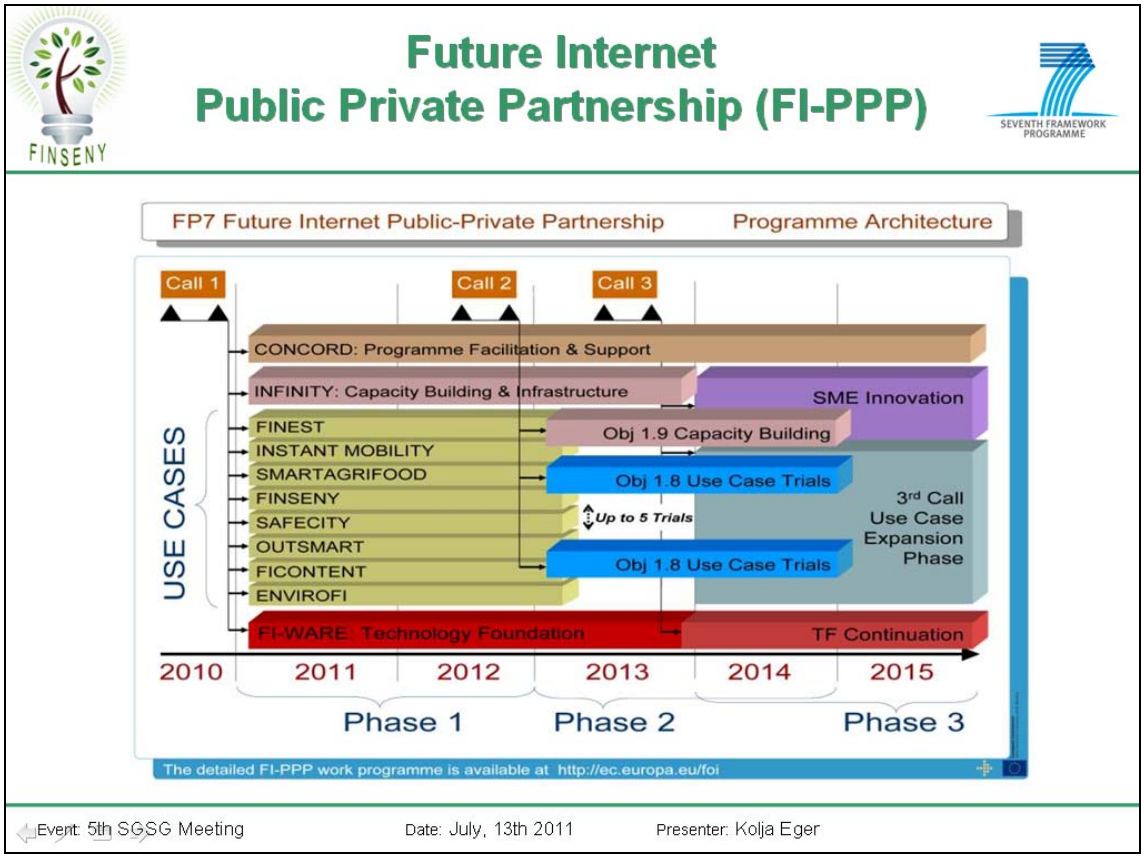


Figure 1: FI-PPP program

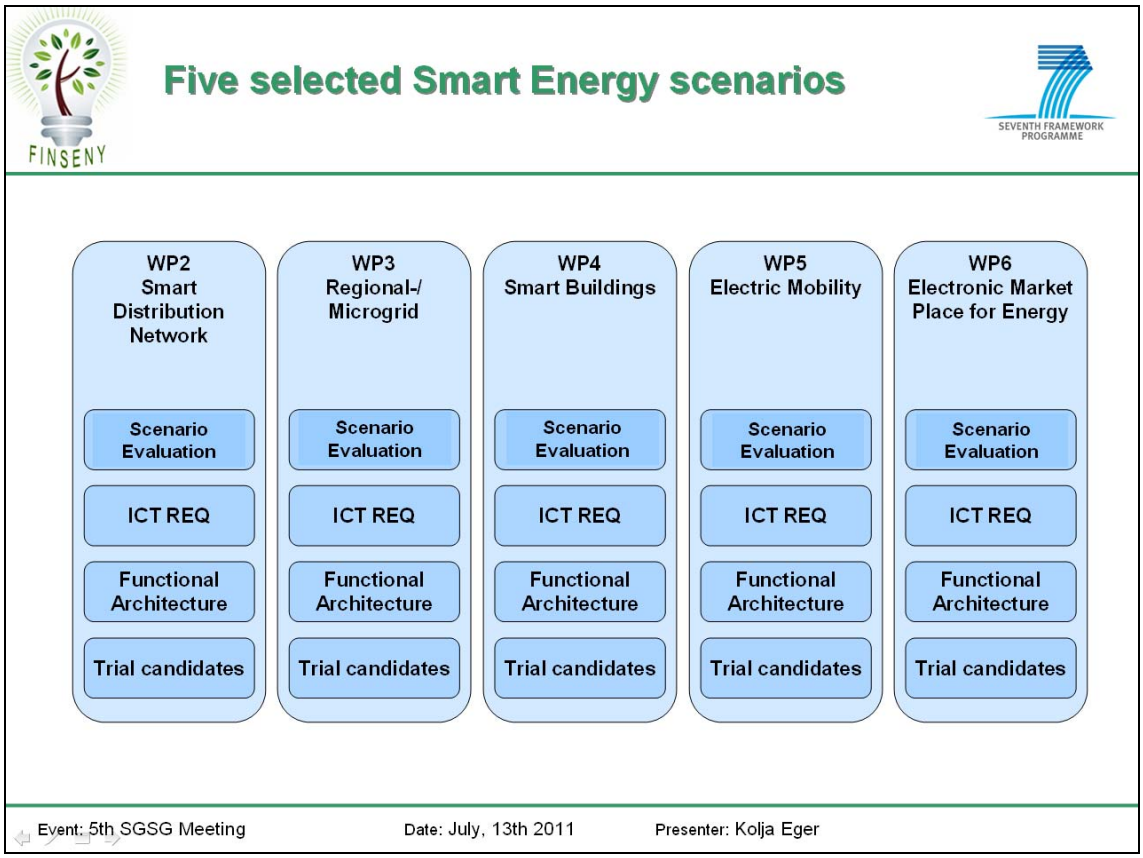


Figure 2: FINSENY Scenario Work packages

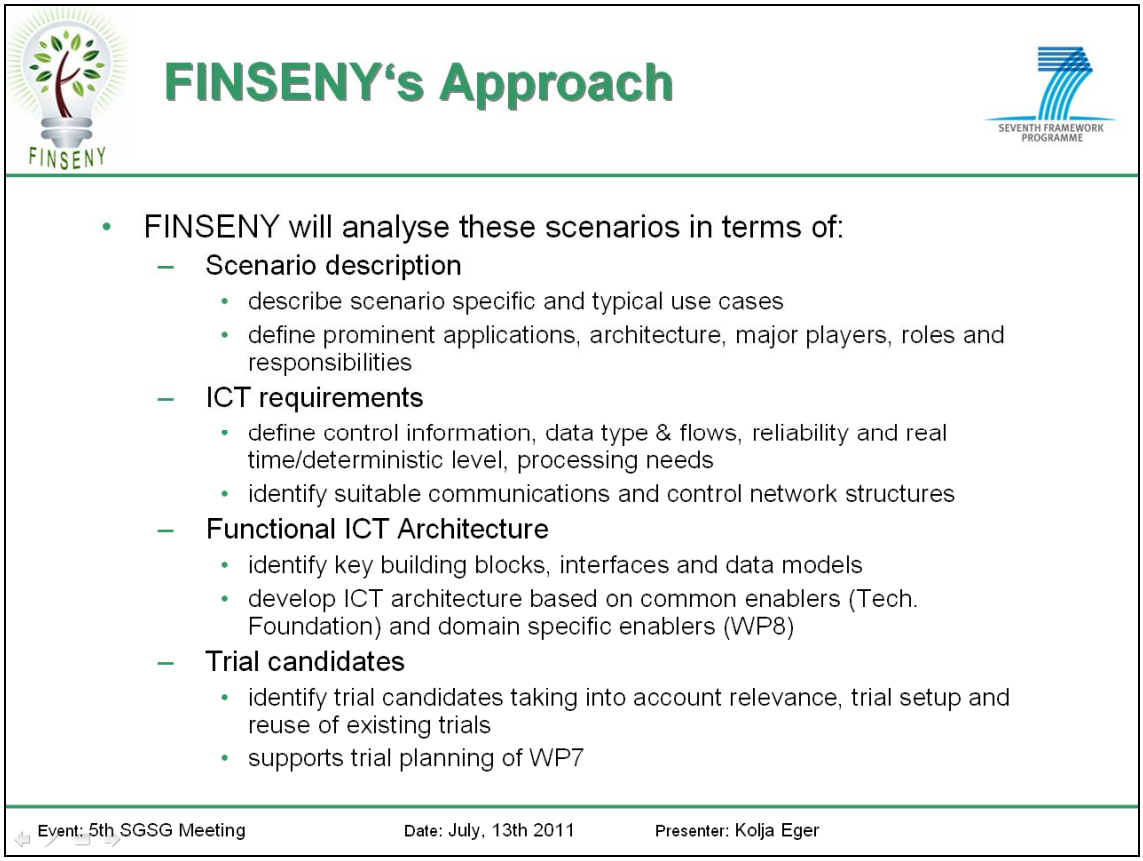


Figure 3: Tasks of the FINSENY Scenario Work Packages

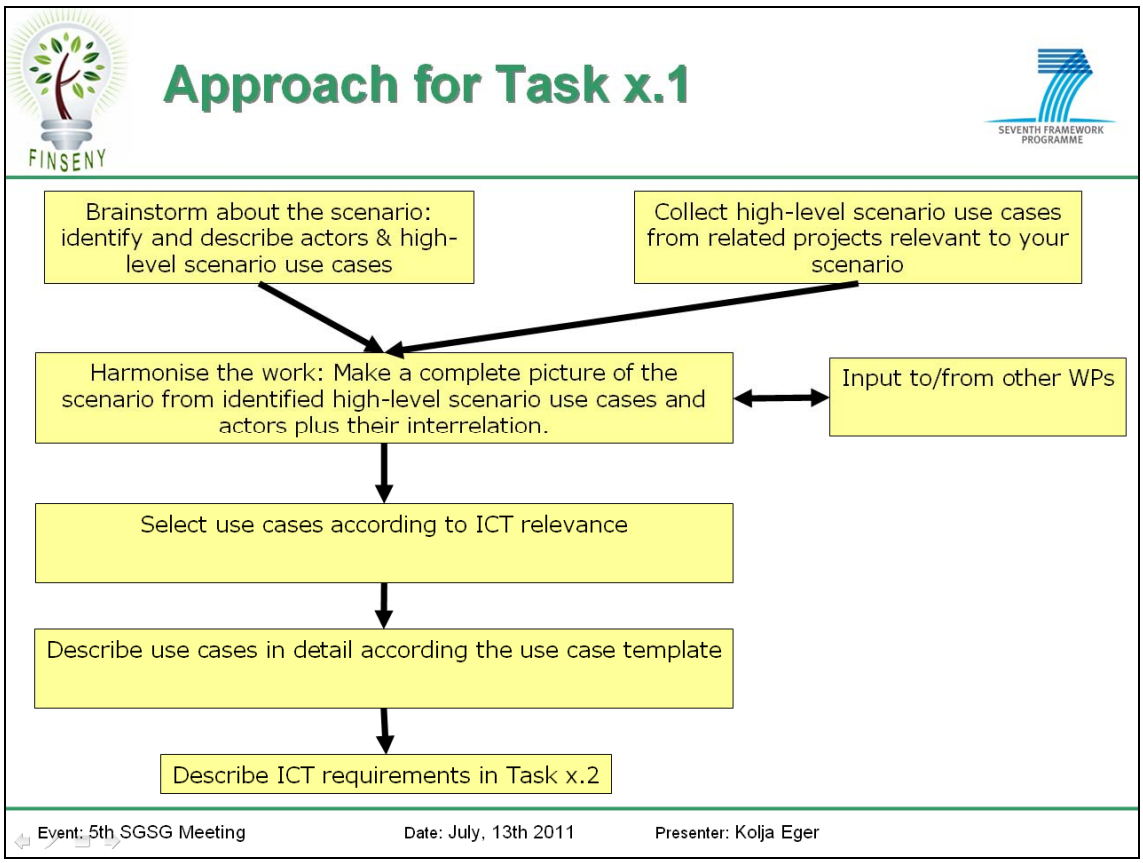


Figure 4: Scenario evaluation approach

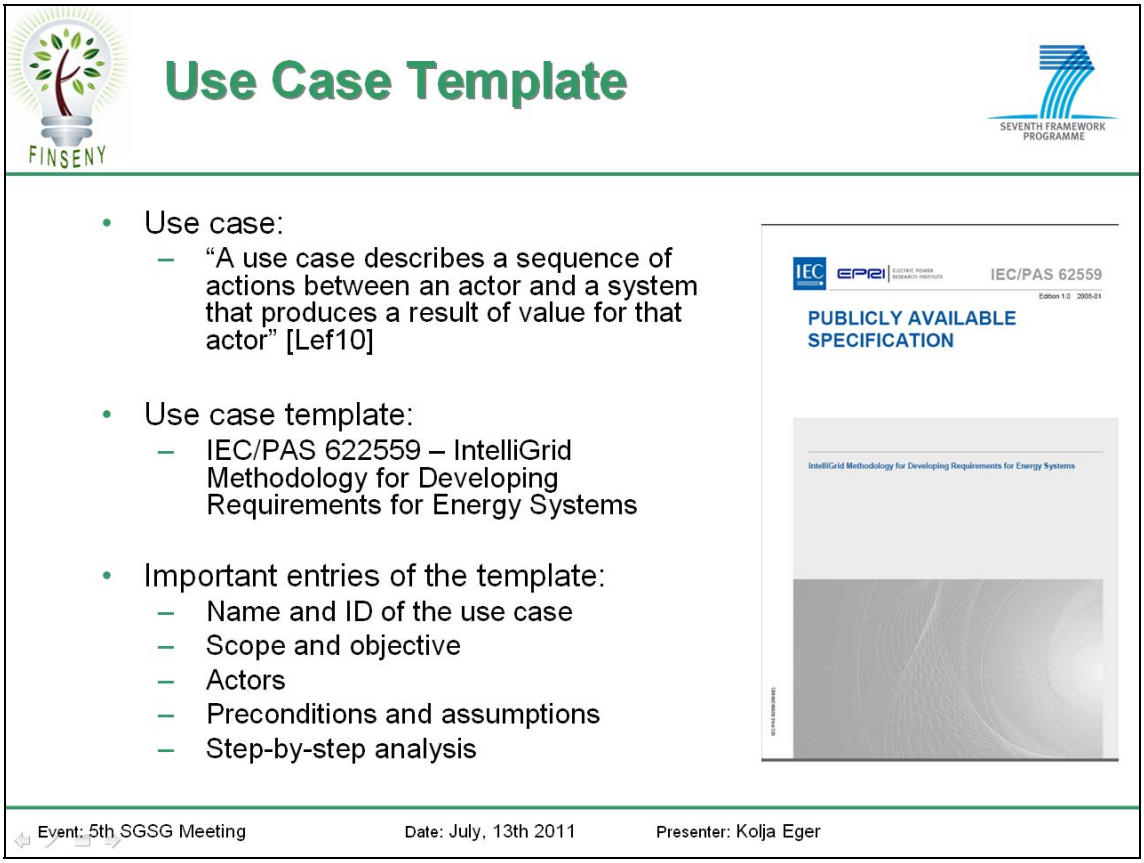


Figure 5: Use Case template

2.2 Current status in assessment of on-going European projects & community activities

Ludwig Karg, BAUM Consult.

As already mentioned before, taking into account the results of related projects in the FINSENY tasks is of very high importance. Therefore a specific task has been installed in the FINSENY project to identify other relevant projects, to collect their results and feed them into the FINSENY processes. Therefore a project database has been developed to systematically collect such other project information and results which also allows for an efficient search engine (see Figure 6).

Today, about 800 projects have been put into the database for which the project data and major results need to be entered next. But this is also the major difficulty, since such in-depth information on the projects is not easy to get or simply not public available. Thus any input for the database is highly welcome, especially from the SGSG members. Therefore the SGSG members have read-only access to the database and can get extended access rights on request by Michaela Ballek, BAUM Consult. The look-and-feel of that database is shown in Figure 7. During the SGSG meeting the database has also been shown in live operation to demonstrate its handling.

In any case the next activity in this task is to fill the database with content. But obviously trying to put all project information into the database does not help either, but focusing on the FINSENY relevant data is required: findings in terms of ICT requirements, demo activities with a high potential to be used in FINSENY trials. This selection is a major challenge. The most FINSENY-relevant projects from today's viewpoint are mentioned in Figure 8.

In the second part of the presentation further important activities which have already started or which are just about to start have been presented: GRID+ will be an FP7 project of about ten project partners which will engage in major coordination activities and which has a very close link to the EEGI. The Cooperation platform EEGI – which has been initiated through the SET Plan – proposes a 9-year implementation plan in terms of so-called "functional projects" which describe the areas of major interest (Figure 9). A process has been installed to evolve from the quite abstract functional projects to real European projects: after building a cooperation structure a screen will happen on the twelve identified functional projects to end up in an overall understanding how the ongoing projects address these functional projects. After a gap analysis has been done, recommendations will be developed for programs on national and European level to close these gaps. In this context BAUM Consult is going to lead the project "Smart Consumer – Smart Customer" (FP7 ENERGY.2012.7.1.3) which will in fact address not only technical topics but also new approaches to the energy market. It came up in the discussion that the UK has done already a lot of work in terms of Smart Metering use cases which could be an important input for this project.

Another cooperation platform which has to be mentioned is ISGAN (International Smart Grid Action Network). The main activities and objectives are mentioned in Figure 10. Currently four large projects have been setup and started in that context: Global Smart Grid Inventory, Smart Grid Case Studies, Benefit/Cost Methodologies, and Synthesis of Insights for High-Level Decision Makers. Generally speaking ISGAN is moving fast ahead and is especially addressing aspects of regulation for the Smart Grid.

This also issued a discussion at the SGSG meeting about the influence of the regulation in general on the Smart Grid evolution: today, some regulations are hindering the realization of innovative Smart Gid concepts (like e.g. the microgrid). But the discussion has shown that the regulatory bodies seem to be open for technical advice – it is not long ago that regulations have been considered as unchangeable, but there the mind set seems to have changed significantly: at least this was the feeling of most people in the audience. There came up even the comment that regulation is expecting and waiting for output from the different projects and further proposals on regulatory movements based on the technical insights.

Finally, when looking for cooperation opportunities on Smart Grid relevant topics, the activities and calls in the area of Smart Cities should be looked at as well. A summary of upcoming FP7 opportunities has been presented as shown in Figure 11.

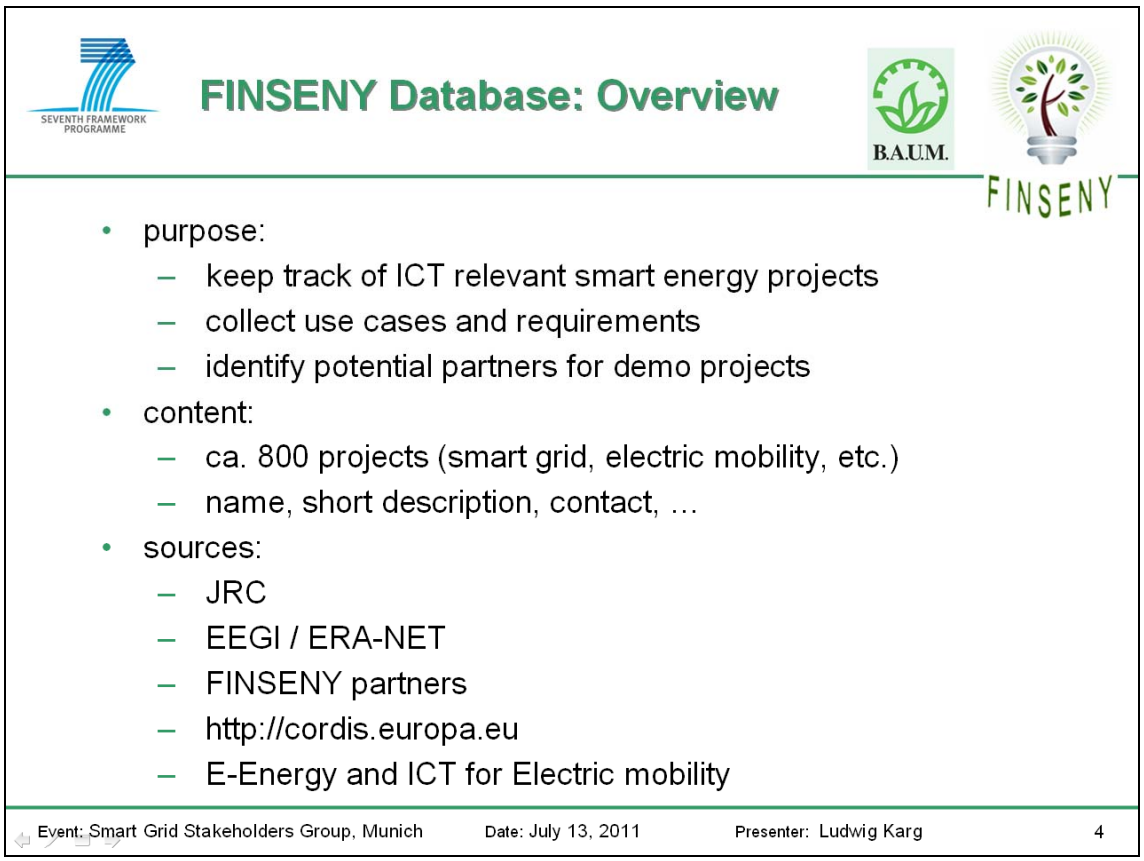


Figure 6: FINSENY project database – background

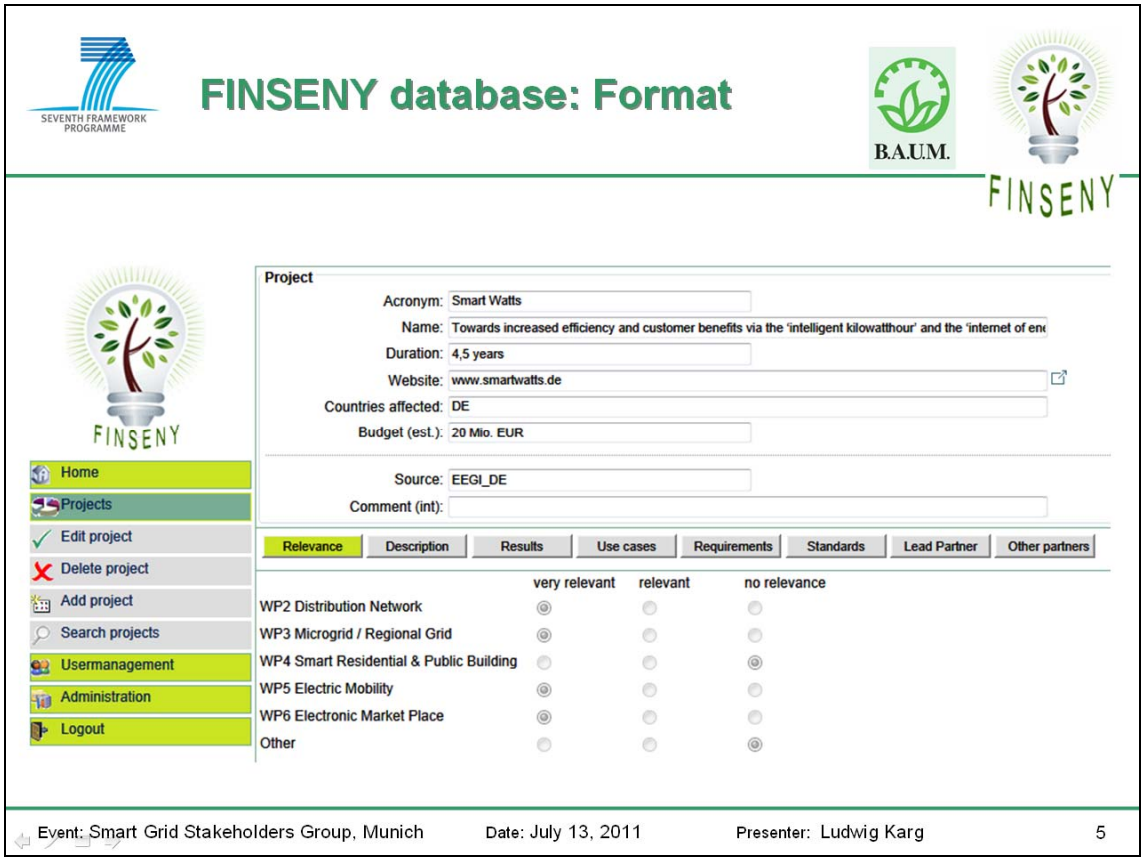


Figure 7: FINSENY project database – screenshot

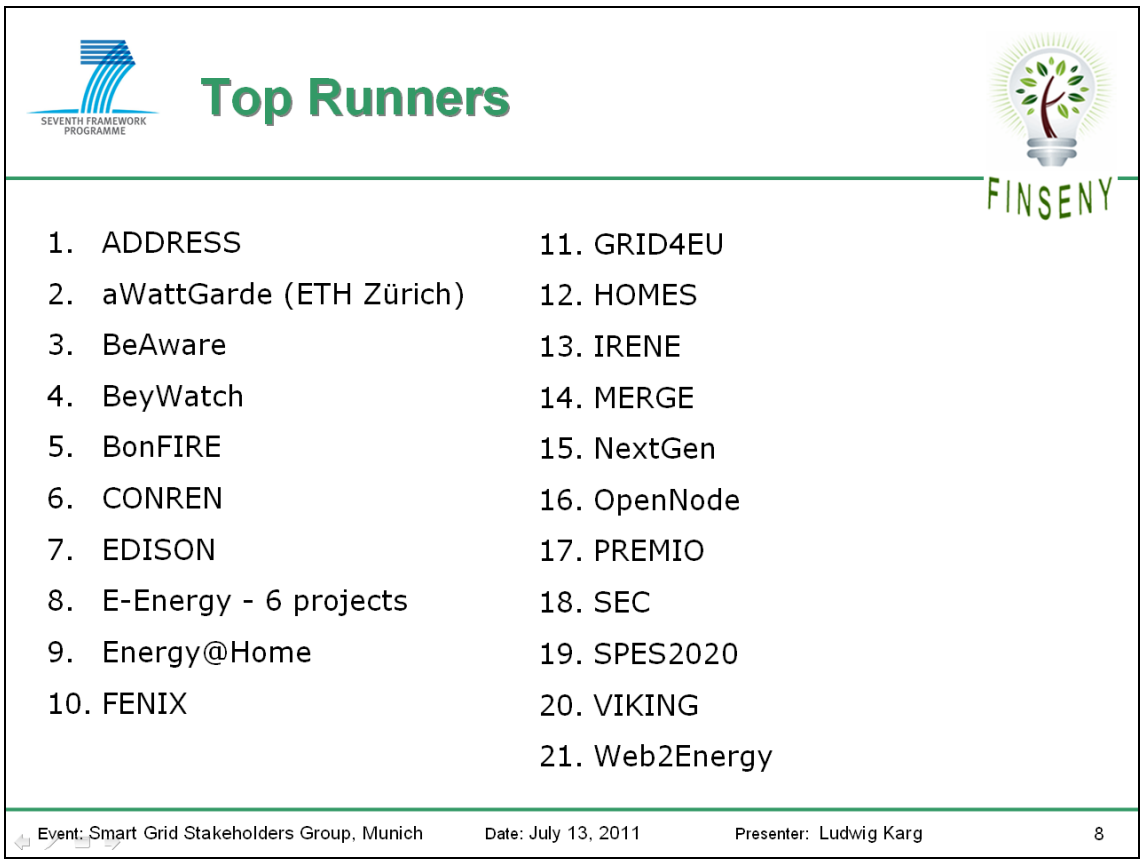


Figure 8: Top Runner projects

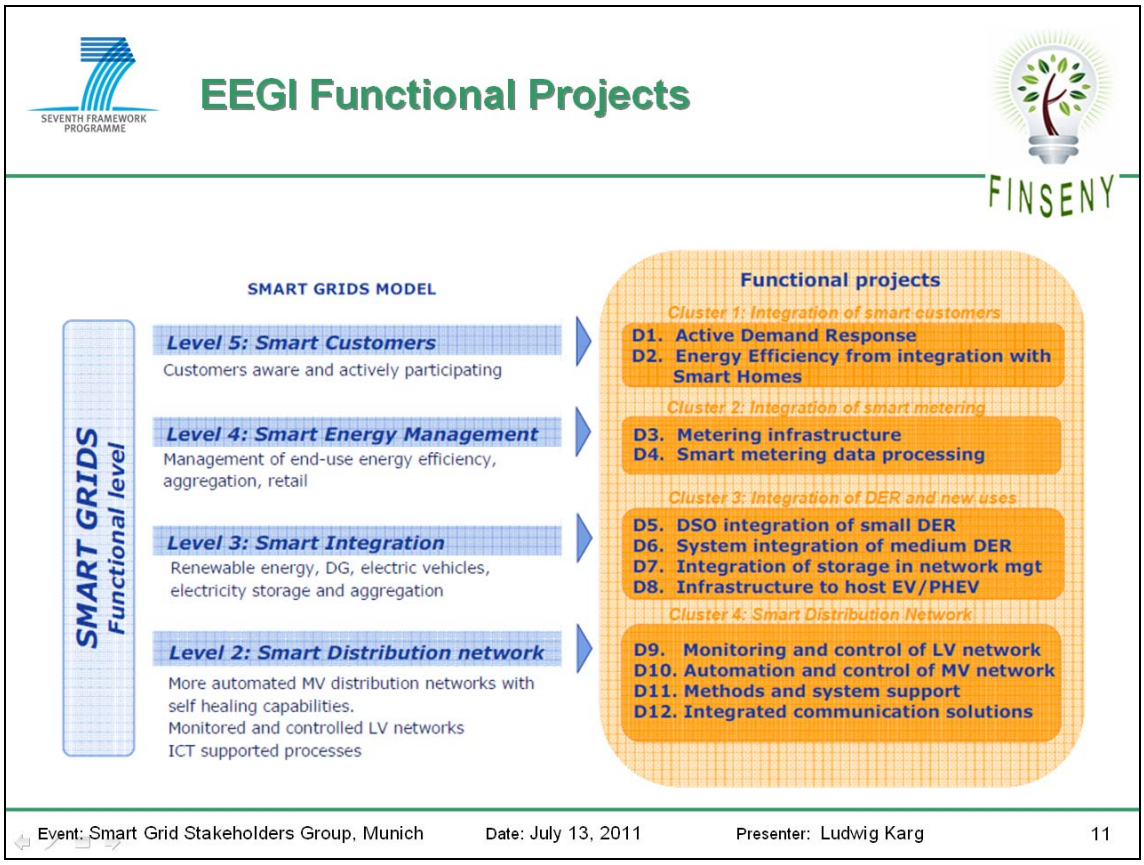


Figure 9: EEGI Functional Projects

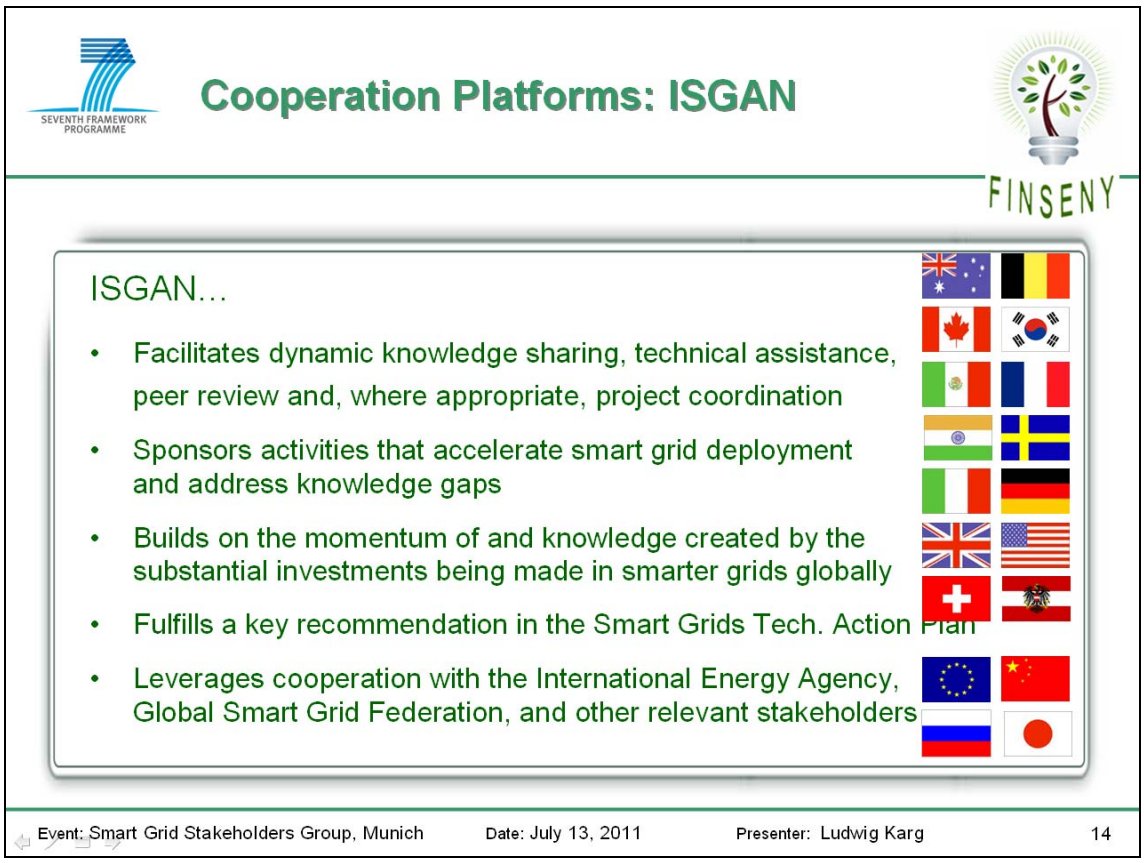


Figure 10: ISGAN

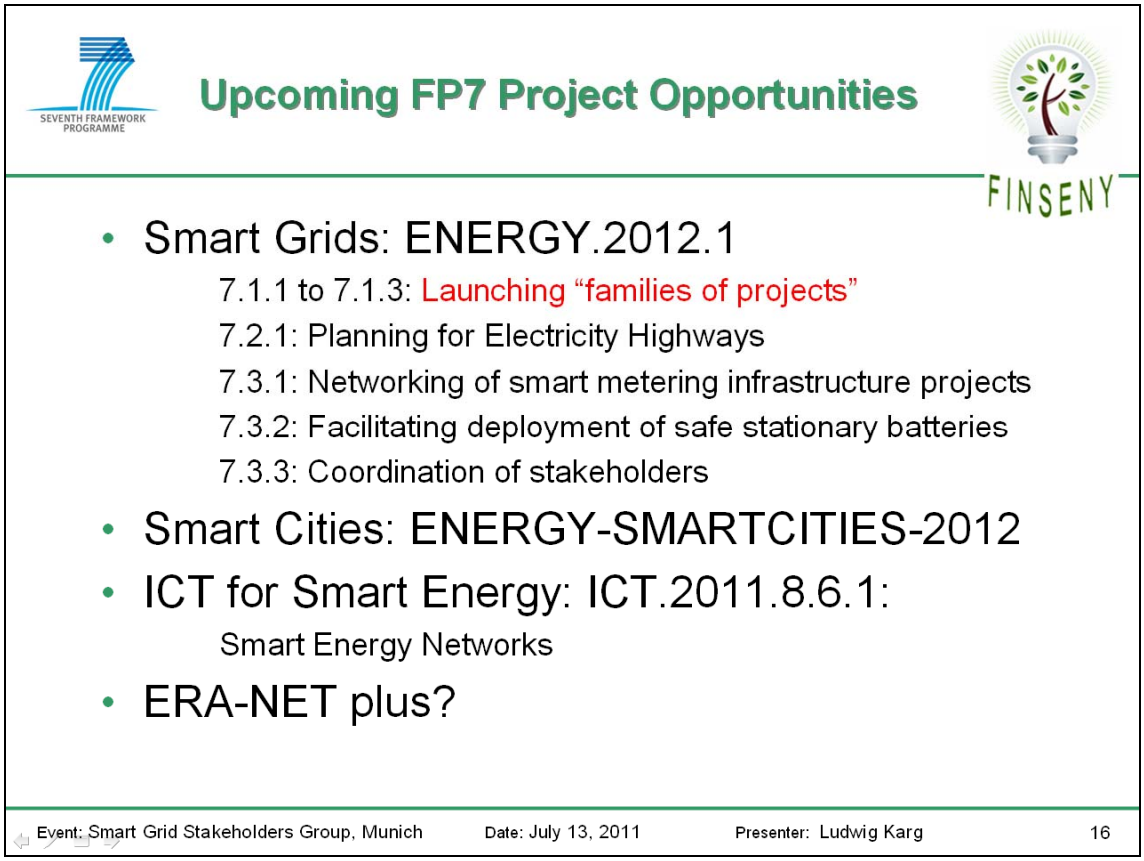


Figure 11: Upcoming FP7 Project Opportunities

2.3 Status FINSENY WP2 - Distribution Network scenario & Discussion

Holger Elias, Nokia Siemens Networks.

In the following five sessions the FINSENY scenario work package leaders presented their status on the respective scenario evaluation which typically was a detailed description of the most relevant use cases in the respective scenario.

As an introduction a definition and positioning has been provided for the scenario "Distribution Network" (Figure 12). It has been explained that three main new actors need to be considered to investigate use cases beyond state of the art: the aggregators, the metering operators and the distributed energy resources. Moreover the actors' interactions have been discussed in detail (Figure 13 and Figure 14). For a detailed scenario evaluation, the high level services identified by the EU Task Force Smart Grid have been analysed. The following major use cases have been identified: Medium Voltage Data Acquisition and Control from utility control centre, Fault Location, Isolation and Service Restoration, Dynamic Control of Active Components, Smart Grid Energy Control of Power Inverter, and Mobile Work Force Management (further details are given in Figure 15). Finally the first results on identified ICT requirements have been presented.

During the discussion it was correctly mentioned that electricity is not the only mode of energy which should be considered, but also gas, heat/cooling needs to be addressed in addition. In general there was an agreement on this, but it was also clarified that FINSENY explicitly decided to focus on energy transport based on electricity only to not broaden its focus too much. But there are other projects that take care e.g. of gas distribution which should be taken into account.

Another point of discussion was the question whether the technical interactions of the evolving Distribution Network have been shown correctly, since there was no direct link between the aggregators and the TSOs shown. On this remark it has been explained that the FINSENY group was well aware of this link and that it would be realized by an interaction through the DSOs such that the DSO would be transparent in this case.

The question to which extend DC grids are addressed as well has been answered by saying that the Distribution Network analysis did not focus on an AC or DC distribution technology. Thus no DC specifics have been considered.

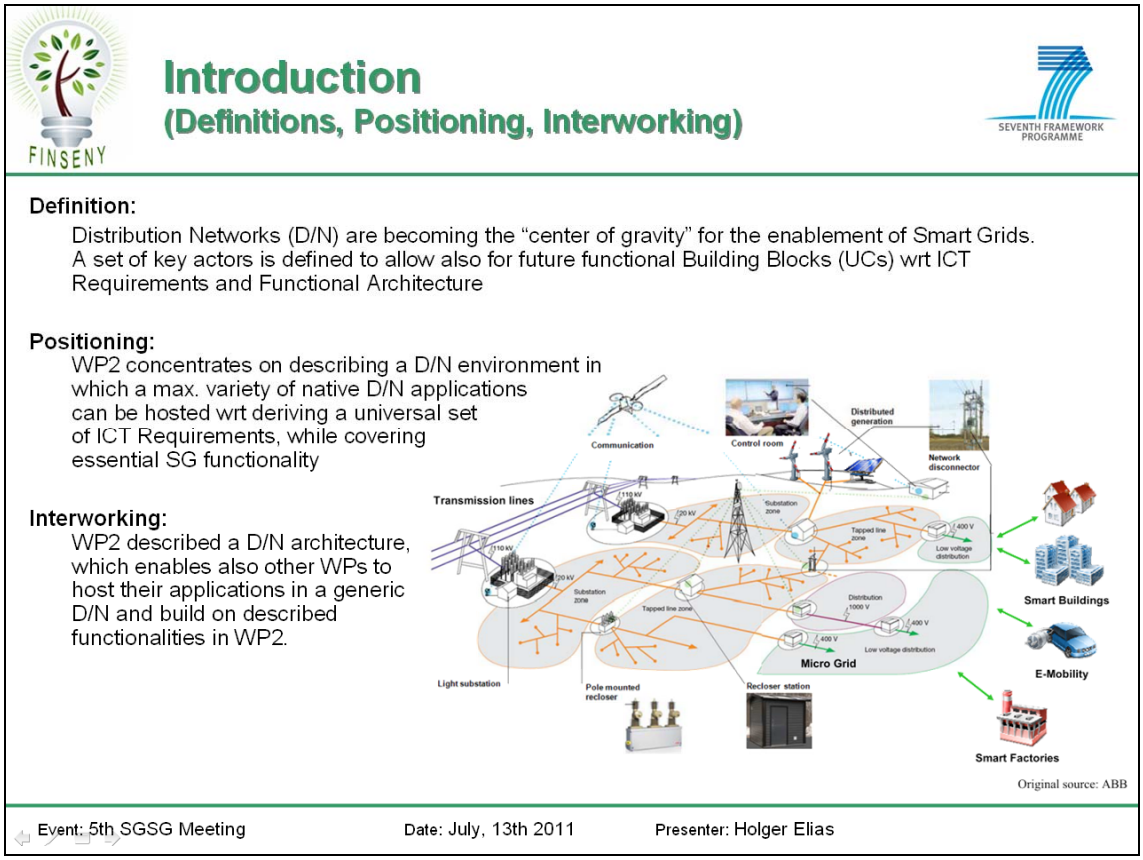


Figure 12: Scenario Overview: Distribution Networks

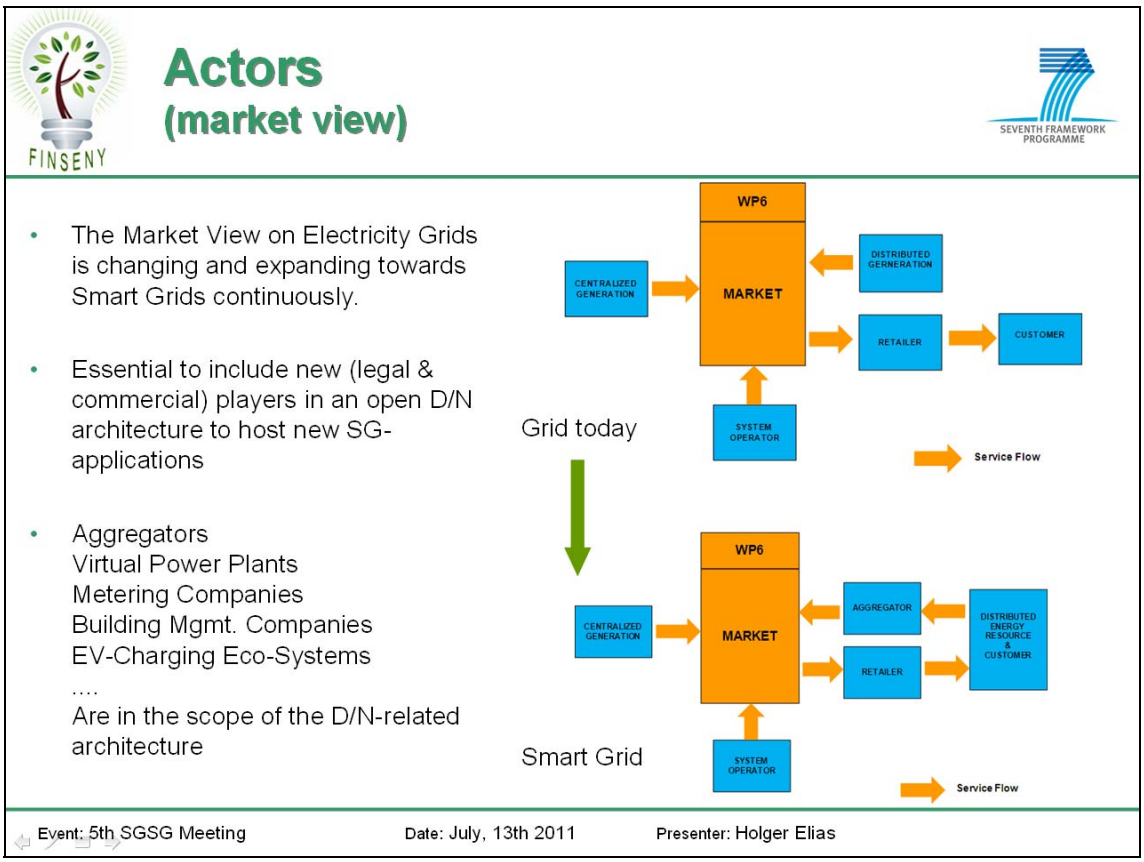


Figure 13: Distribution Network - Actors: market view

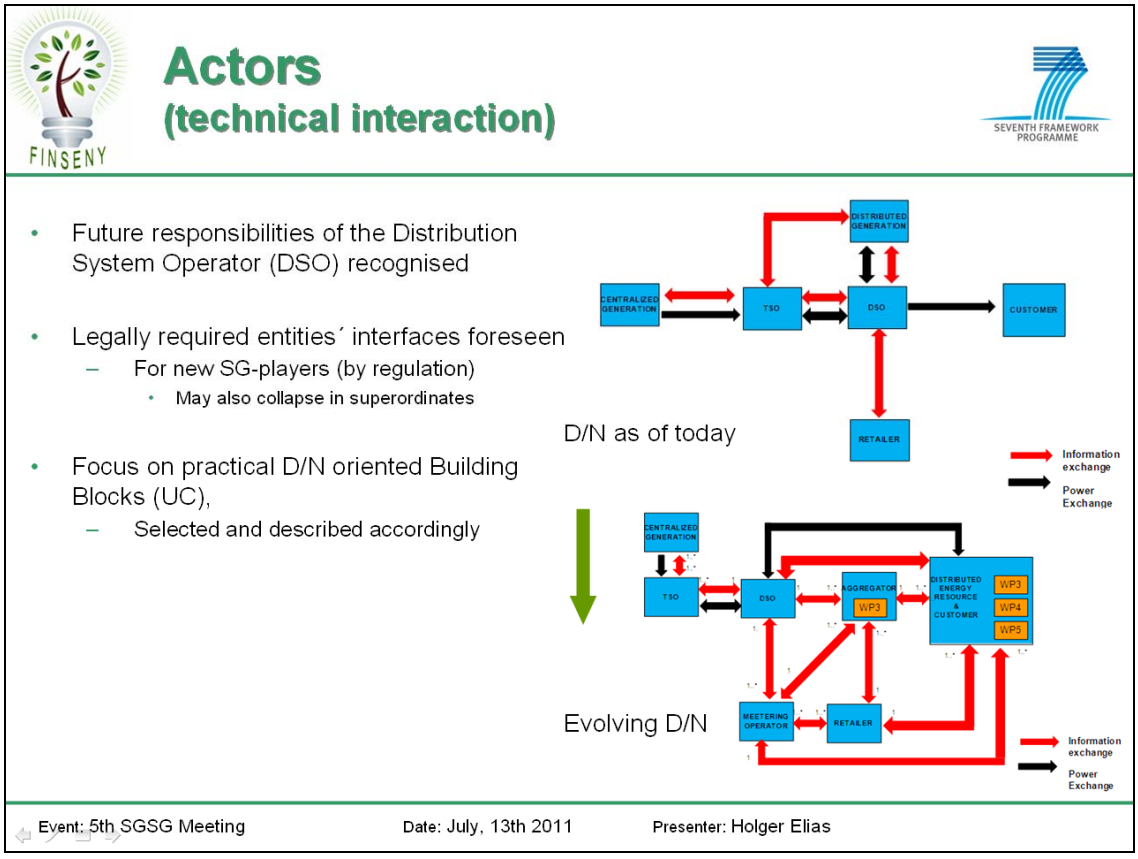


Figure 14: Distribution Network - Actors: technical view

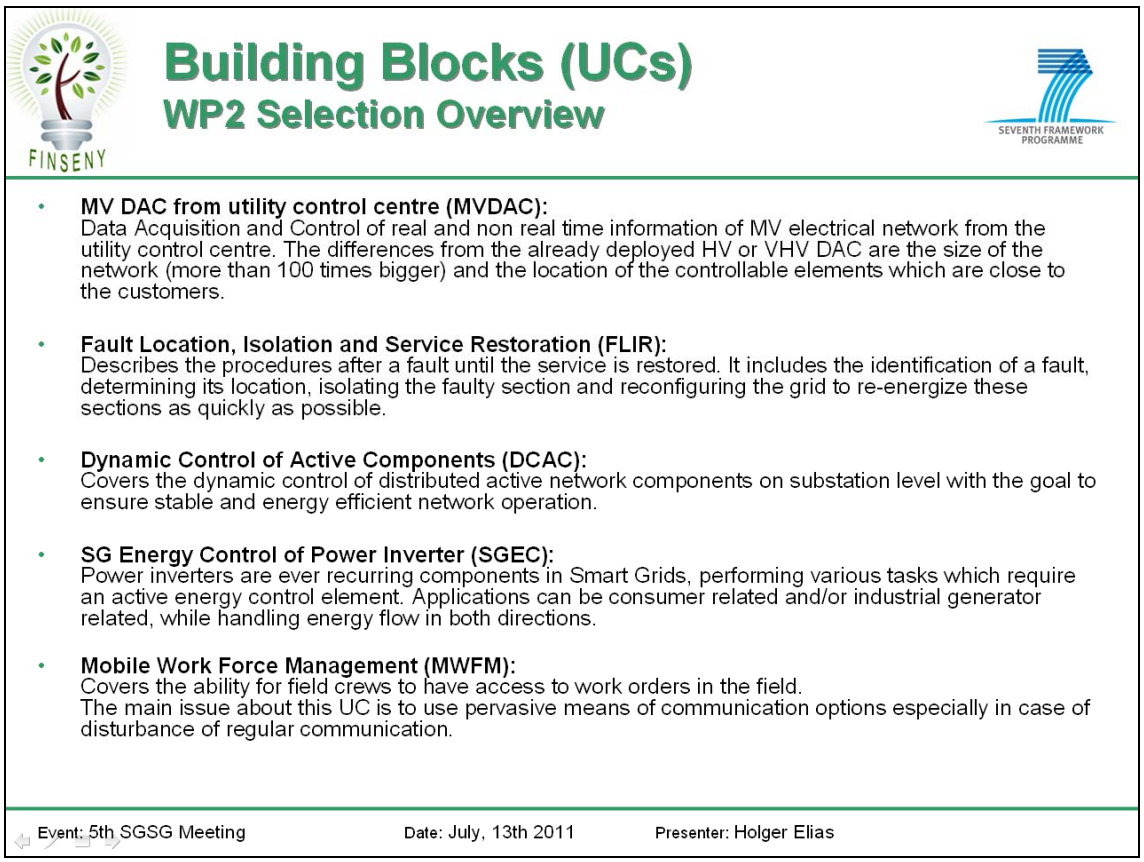


Figure 15: Distribution Network: Use Cases

2.4 Status FINSENY WP3 - Microgrid scenario & Discussion

Kolja Eger, Siemens AG.

First a definition for a microgrid has been presented (Figure 16) distinguishing between two modes of operation: semi-autonomous (normal-state) and connected to main grid, or islanding (emergency) and disconnected from the main grid. Then the main actors in the microgrid arena have been introduced where special attention has been given to the microgrid operator (Figure 17 and Figure 18).

During the evaluation of the microgrid scenario it turned out that distinguishing between two types of use cases is appropriate: “Business use cases” and “Control and Management use cases”. The first ones are use cases addressing the interactions with other market roles to negotiate and to contract energy or ancillary services, whereas the Control and Management use cases describe the actions taken to run a function of the system. In this first phase of the project four major Business use cases have been identified as well as nine Control and Management use cases (Figure 19 and Figure 20). It is expected that from an ICT perspective the Business use cases are not as challenging as the Control and Management use cases.

The discussions questioned the described microgrid operator, since he really needs to integrate the role of aggregator, energy retailer and DSO for the microgrid itself – and such a role is not fulfilling the regulations today. So the only way to realize such a scenario today seems to setup some sort of collaborative structure, instead of one organization taking the role of a microgrid operator. Thus if the microgrid scenario should play a role, the regulations need to change significantly.

Other comments came up on the separation of the Control and Management use cases: the three use cases “Balancing supply and demand”, “Demand side management” and “Supply side management” seemed to contain some duplication. It has been clarified that there is a close interaction between these use cases and in a certain sense the Balancing use case contains the other two use cases, but still all three of them can occur independent of each other and thus have their right to exist.

Finally, there was a comment that instead of just focusing on configuration management as a use case its focus should be broadened to configuration and fault management (w.r.t. ICT-related systems, devices and networks). Such a use case should consistently occur in the microgrid and the distribution network scenario.

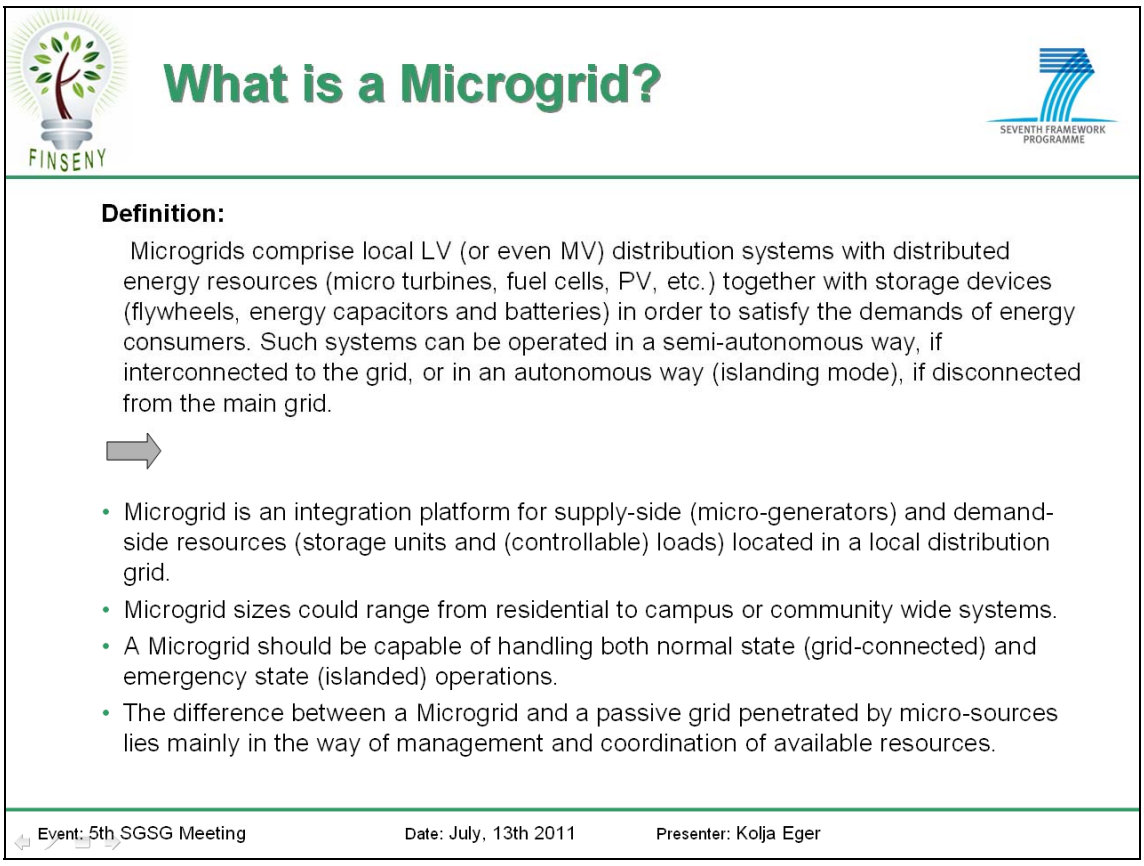


Figure 16: Microgrid – Definition

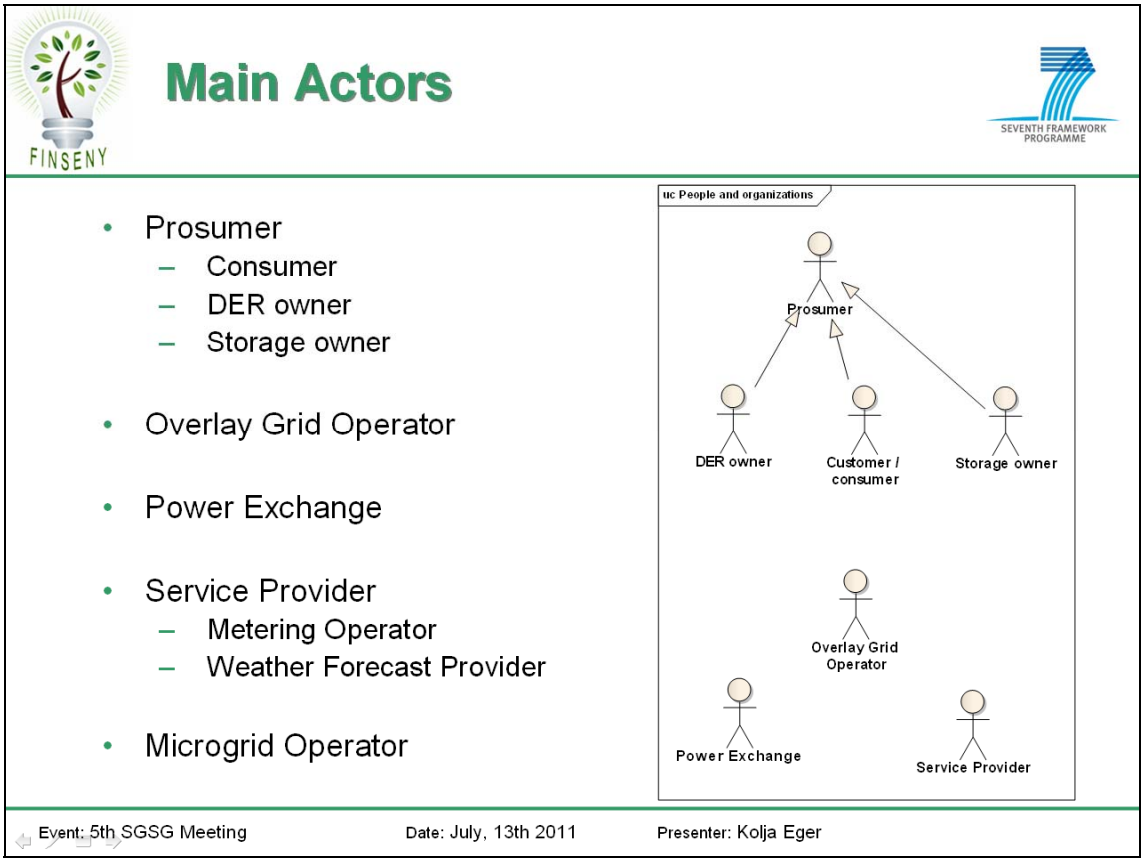


Figure 17: Microgrid - Main Actors

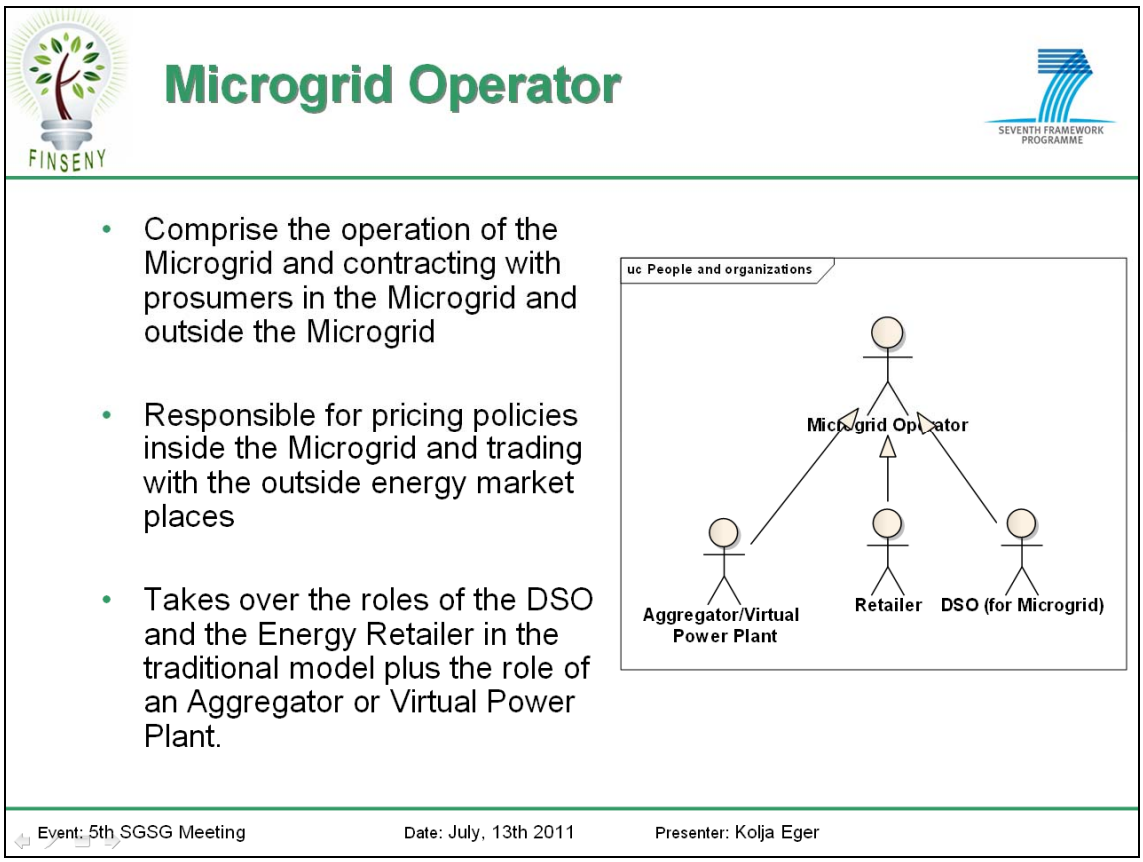


Figure 18: Microgrid Operator

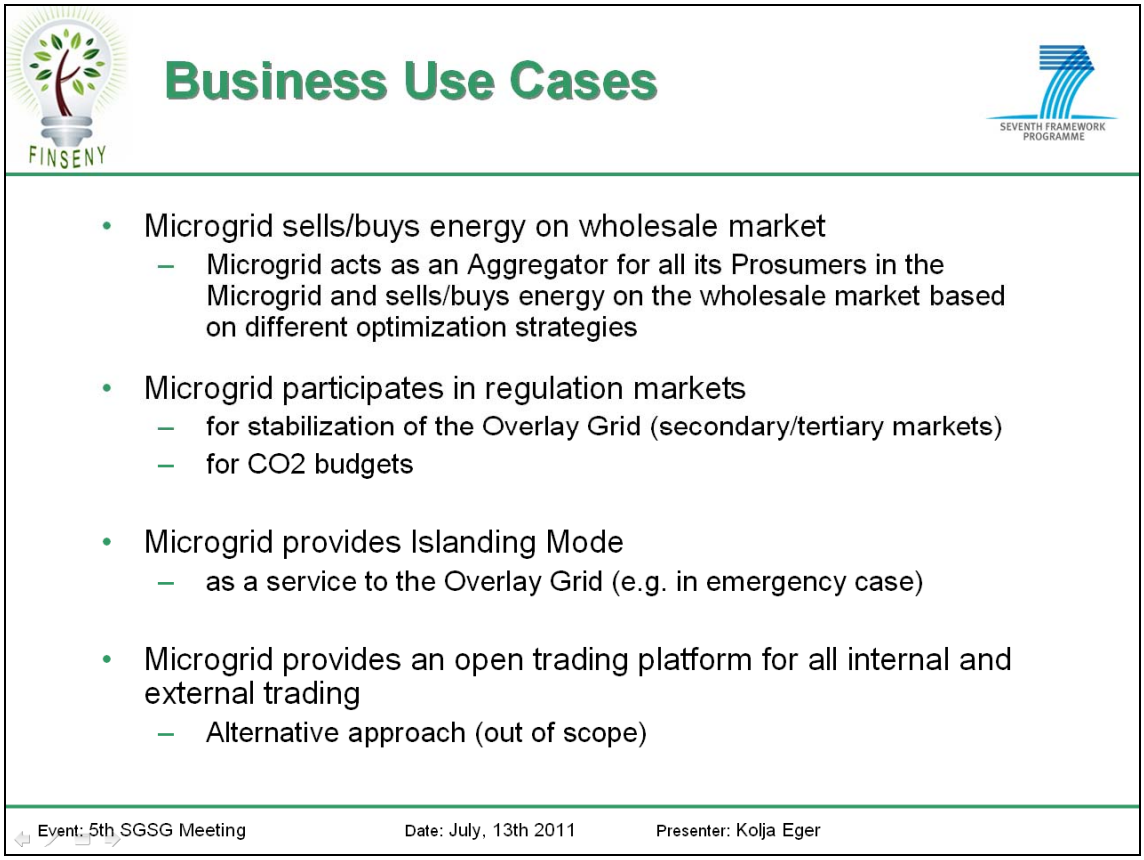


Figure 19: Microgrid - Business Use Cases

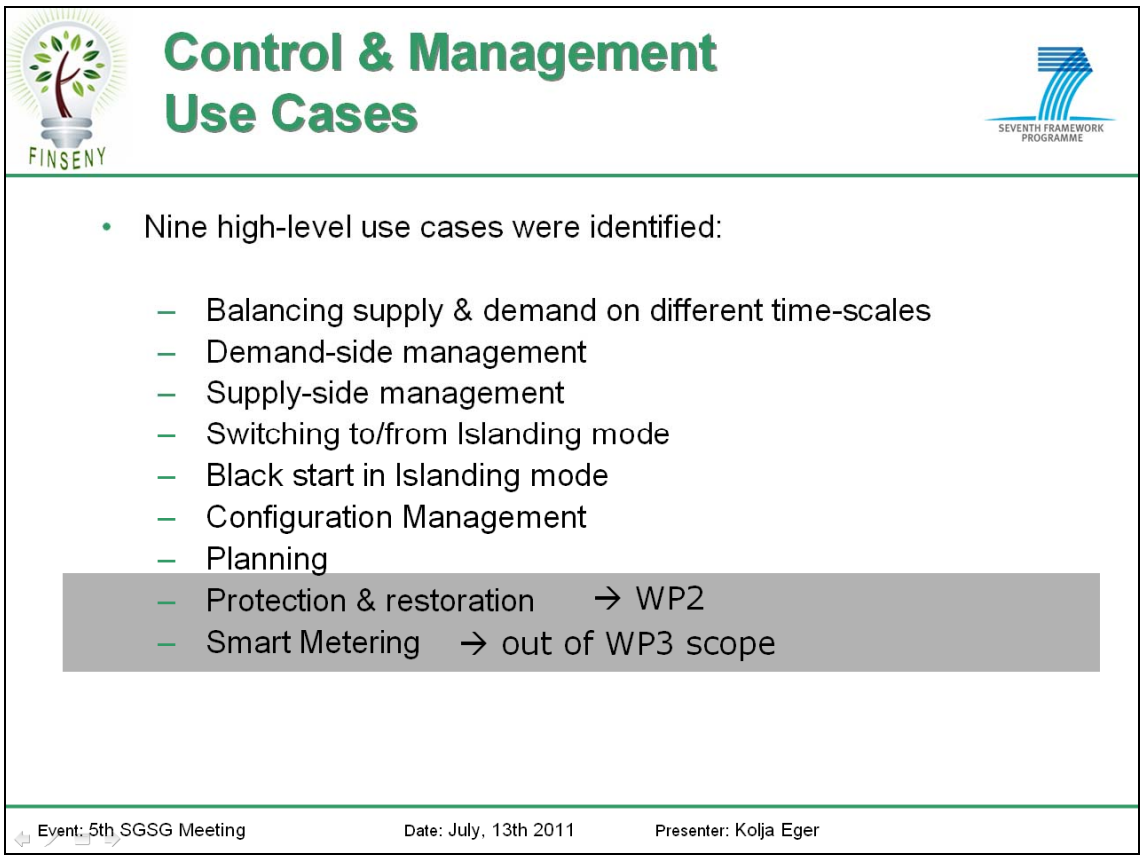


Figure 20: Microgrid - Control and Management use cases

2.5 Status FINSENY WP4 - Smart Building scenario & Discussion

Gilles Privat, Orange Labs R&D.

Introducing this scenario the major stakes and challenges have been summarized for energy management in buildings. It was clearly stated that 70% of all energy consumption is caused in buildings resulting in a share of 40% of all GHG emissions. The main challenges are the very low turn over rate in the building sector is very low and that the configuration issues ("plug and play") are a more critical success factor than for the Smart Grid at large. In fact the goal is to provide building operation services on three different levels as summarized in Figure 21 to step towards the vision of a sensed-actuated home/building.

In general two main aspects have been presented for the energy management in buildings which are related to Smart Energy / Smart Grid: local optimization in a home/building scale as a "micro-smart-grid", and home/building systems as peer in global microgrid/grid-scale optimization. Further details are given in Figure 22.

The types of buildings which should be differentiated are homes, residential buildings, office and public buildings as well as industrial buildings. In work package 4 of FINSENY the decision has been taken to concentrate on the first three types of buildings and address industrial buildings only as a side topic with respect to data centers. For each of them high-level (abstract) and low-level (concrete) use cases are determined as shown in Figure 23 to Figure 26.

For homes, residential buildings and office buildings two major use cases can be mentioned: Optimization of the building energy locally, and optimization of the building energy globally. And one of the main differences of home/residential buildings to office buildings is the number of involved actors which is much larger for the office buildings.

Since some of the described use cases seem to require that all loads (including white goods) can be directly controlled, there was some discussion whether this is realistic and appreciated by the involved players (users, white good manufacturers, …). It has been concluded that a lot of project and standardization activities are ongoing in this area and that user acceptance and scalability are seem as the major aspects to be considered.

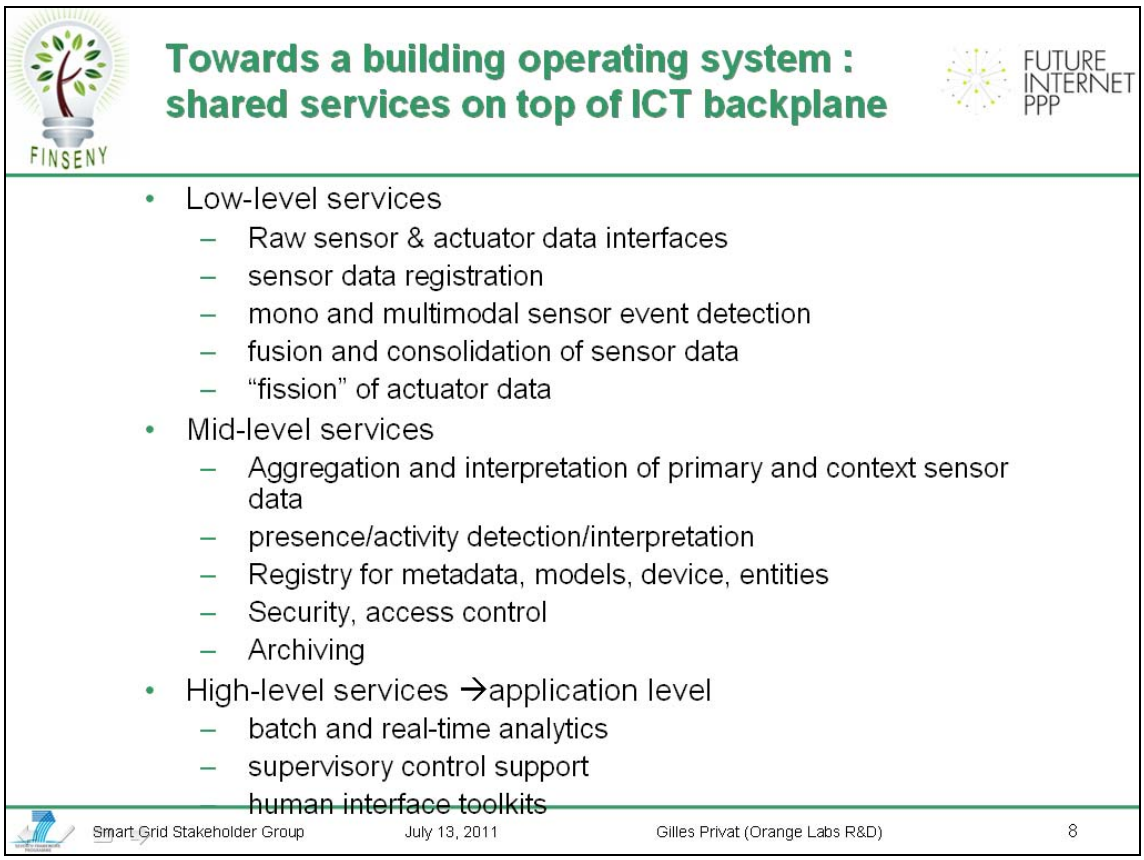


Figure 21: Smart Building - Services in a building operation system

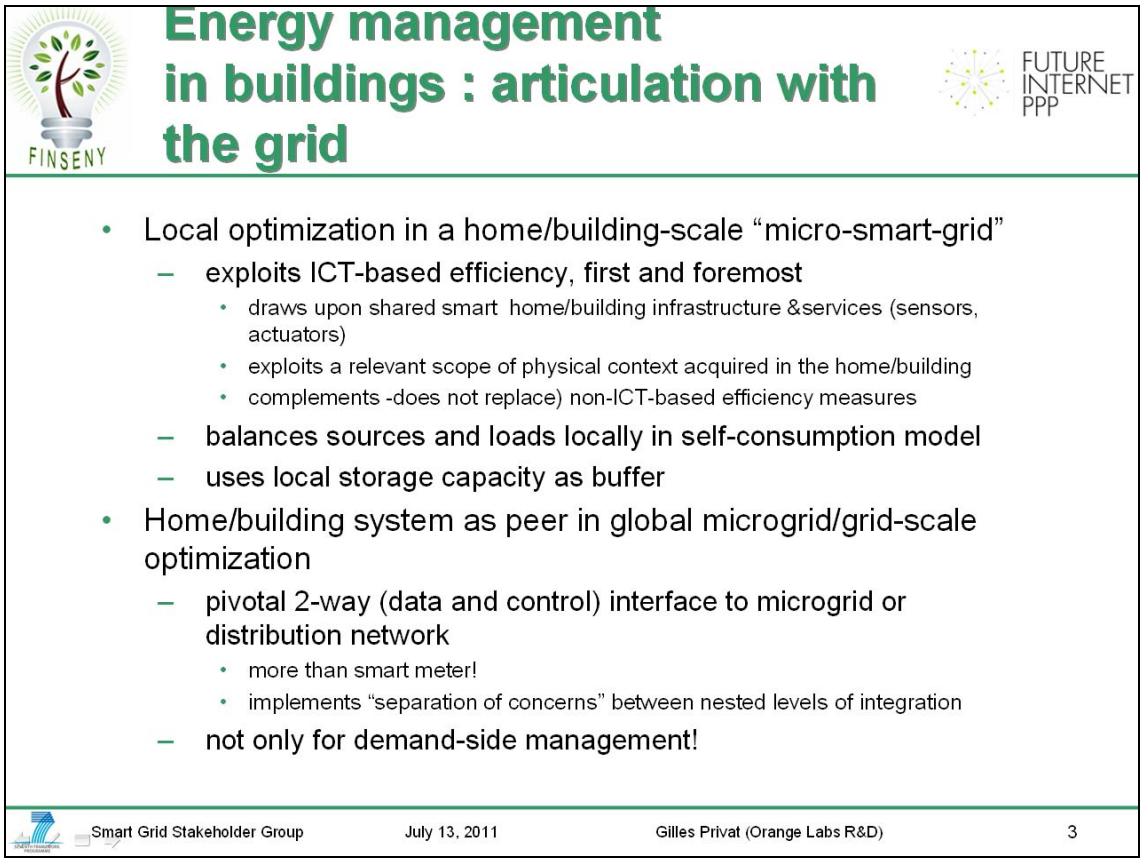


Figure 22: Smart Building - Energy management in buildings: articulation with the grid

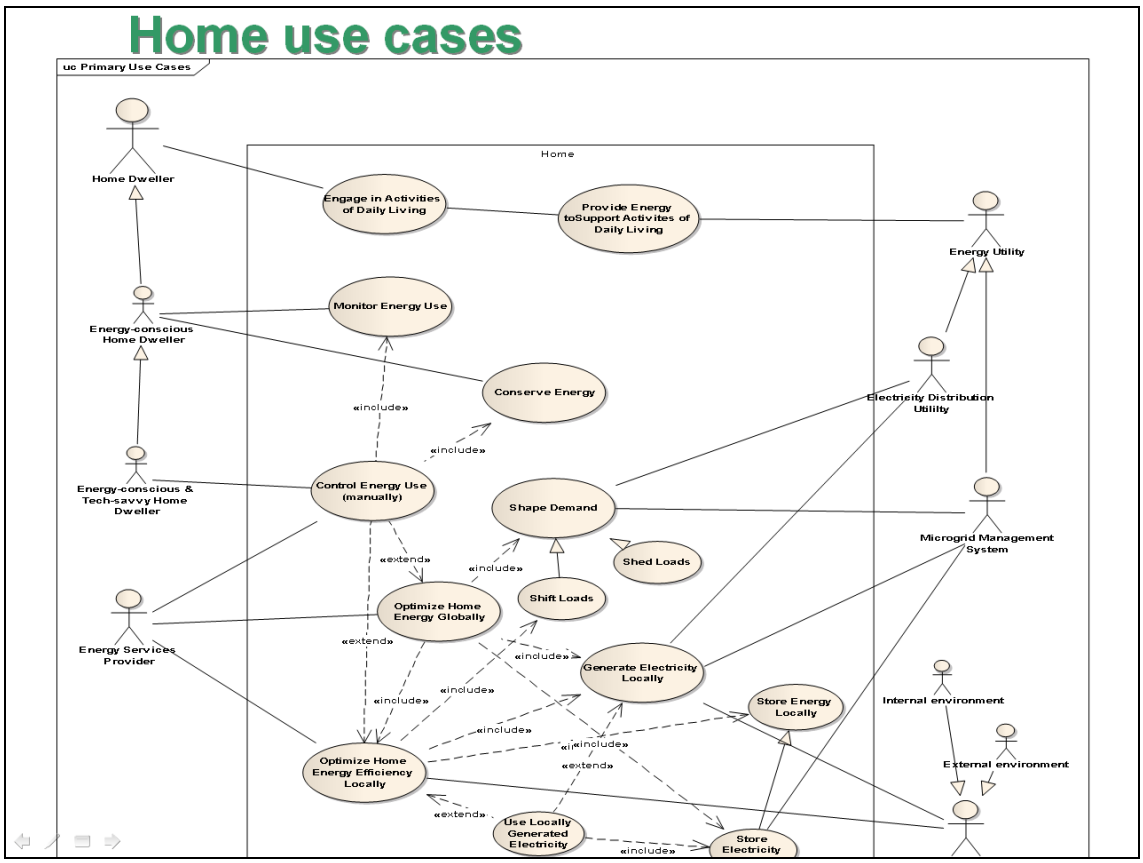


Figure 23: Smart Building - Home use cases

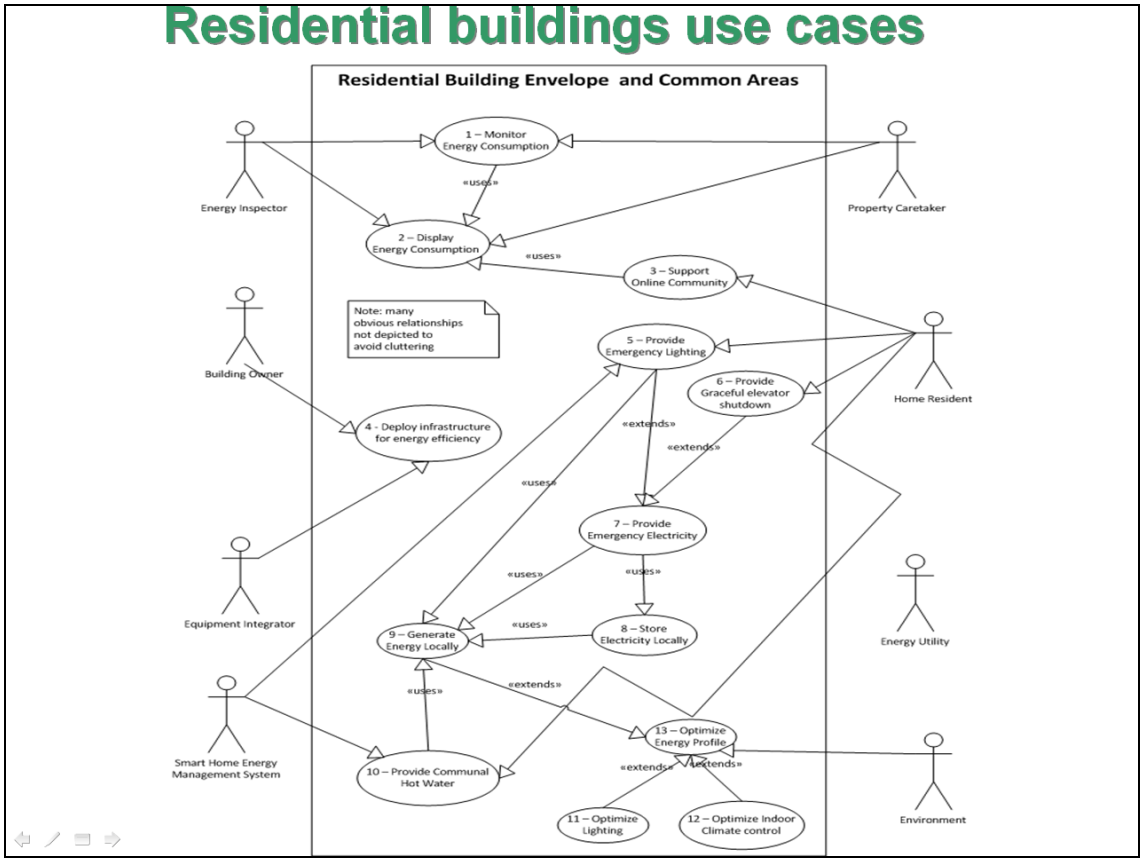


Figure 24: Smart Building - Residential buildings use cases

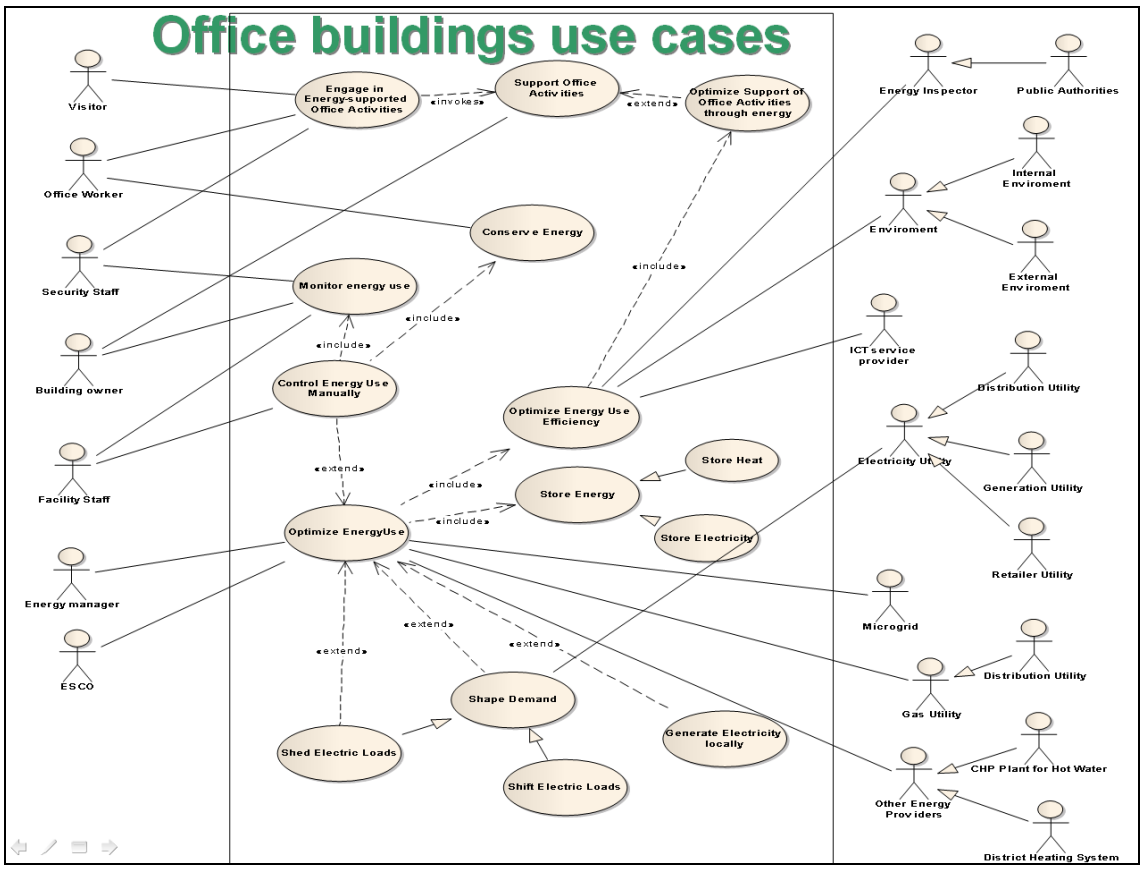


Figure 25: Smart Building - Office Building use cases

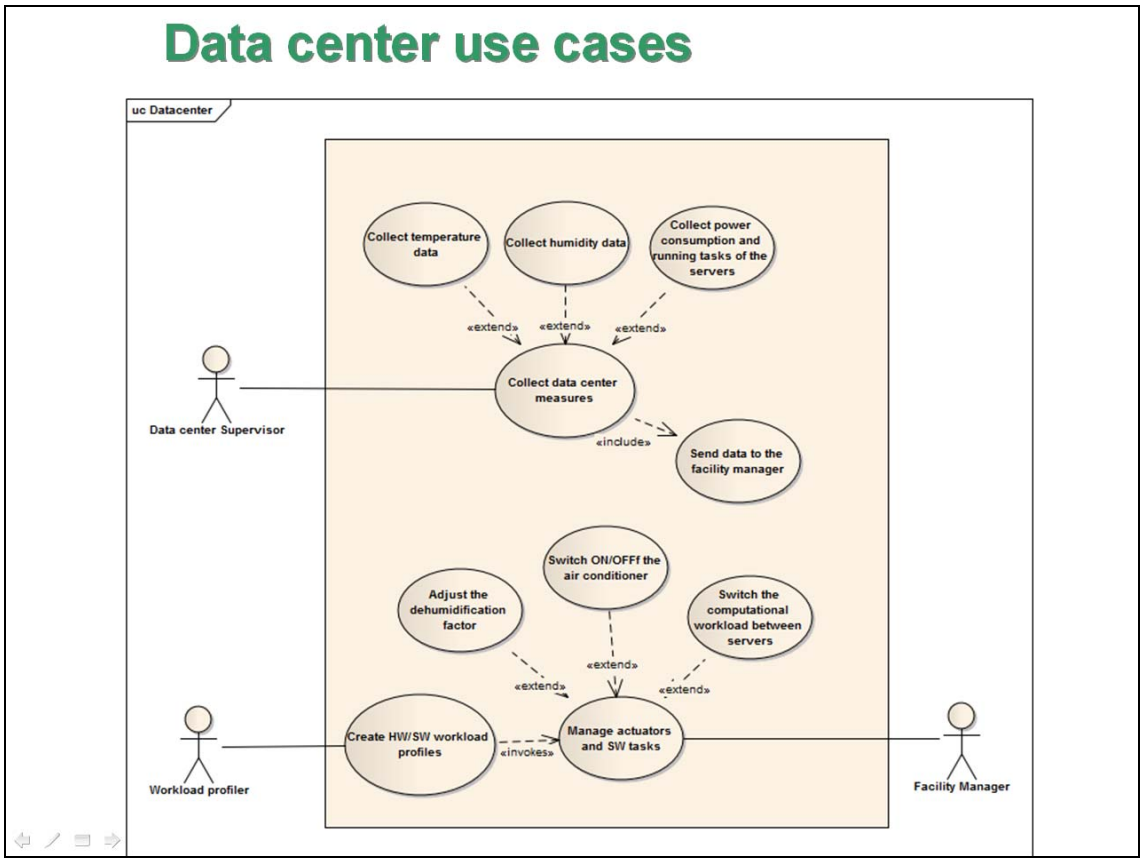


Figure 26: Smart Building - Data Center use cases

2.6 FINSENY WP5 - Electric Mobility scenario & Discussion

Fiona Williams, Ericsson.

In the opinion of many people, we are close to the top of the hype curve for electric mobility. And the main driver for looking at it is not really the growing amount of renewable energy generation but mainly the need of the (mega-)cities to take care of pollution.

A lot of project and trial activities are ongoing in the field of electric mobility addressing aspects of electric cars and the charging infrastructure. Even if many of such trials are very similar in nature some important initial findings have been achieved on user preferences and reactions to the vehicles and infrastructures. But two aspects are hardly analyzed yet: These are on the one hand side the international roaming considering all the different stakeholders like energy providers, energy grid operators, charging infrastructure providers, accounting service providers, … and on the other hand side a smooth integration into an intermodal transport concept. For both aspects standards are needed based on an international consensus in many different areas: energy, transport and ICT. Also new business models are expected to evolve.

Four categories of mobility services have been presented: Short journey (home, work), medium journey (Country-internal, <350 km), long journey, and value-added services (see Figure 27). 29 electric mobility use cases have been identified when analyzing the four mentioned categories (Figure 30) whereas quite often a use case is relevant not only for one category. Therefore a scenario map has been developed (Figure 28) which summarizes the major relevant functions – payment, authentication, inter-modal, charging points, vehicle information, grid connectivity, and enhanced services –, their relevance for the different categories and the mapping of the use case to these functions. Furthermore, a list of involved stakeholders has been established which obviously shows the complexity of this scenario due to the sheer number of stakeholders (Figure 29). Further consolidation of the 29 use cases will be the next step to come to a reduced number of major use cases which need to be described and analysed in detail afterwards.

In the discussion the question came up how the role of a mobility service provider, who is buying energy on a large scale and who is offering the energy for eCar charging, is considered in the mentioned list of stakeholders in Figure 29. It has been agreed that this type of stakeholder can be understood as part of the specified “Clearing House” role.

Moreover, some further debate came up concerning the four identified categories and to which extend a sharp differentiation can be made between the four mobility services; e.g., short trips to neighbouring countries should be seen as a short or medium journey even if several countries are involved.

Finally, the question came up whether it has been considered that the eCar batteries could be used as a heavily distributed energy storage which also can provide energy to the grid if necessary. It has been clarified that the scenario map also includes such an approach, since a link is foreseen between the mobility services “grid connectivity” and “charging points”. But a prerequisite to realize such an approach is the existence of bi-directional chargers which are not yet available. When they are available in the next couple of years, detailed tests and trails are expected to follow. In general quite some pros and cons could be mentioned for the feasibility of using the eCar batteries in that way and thus there are very different views and opinions on it amongst the experts.

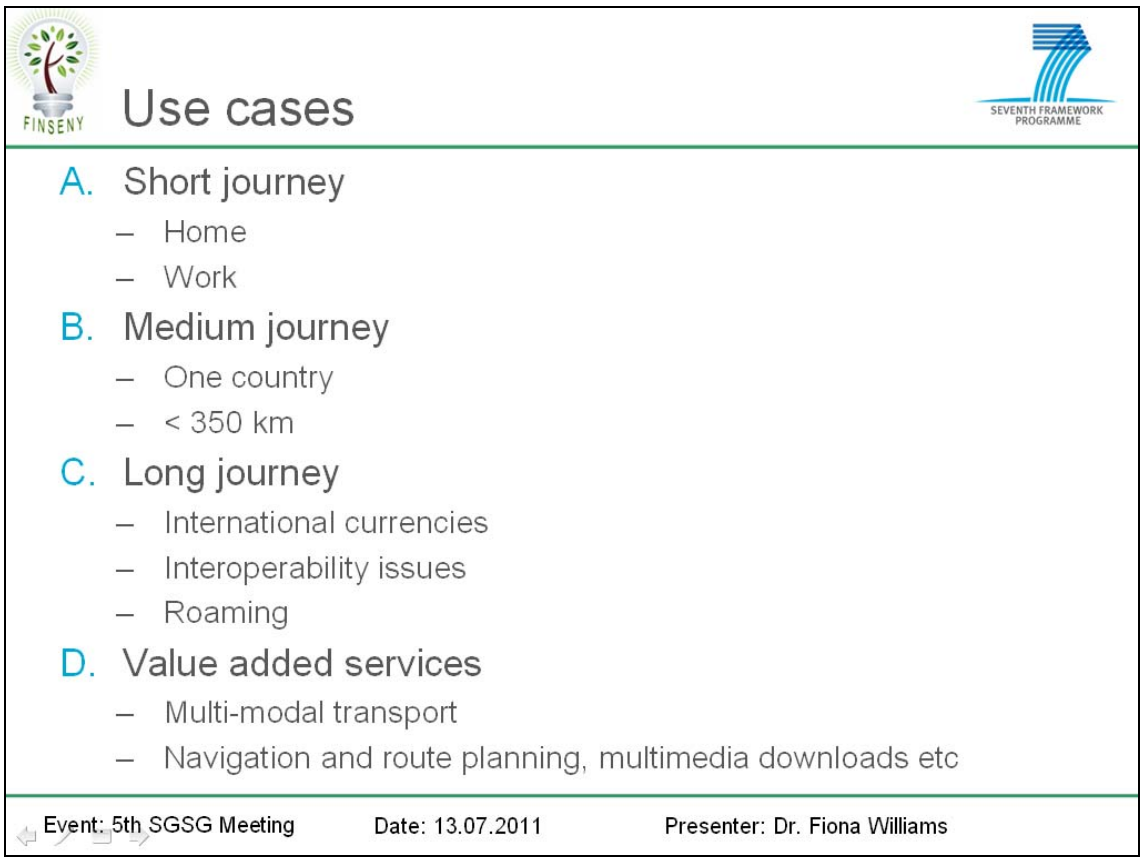


Figure 27: Electric Mobility – Use Case Categories

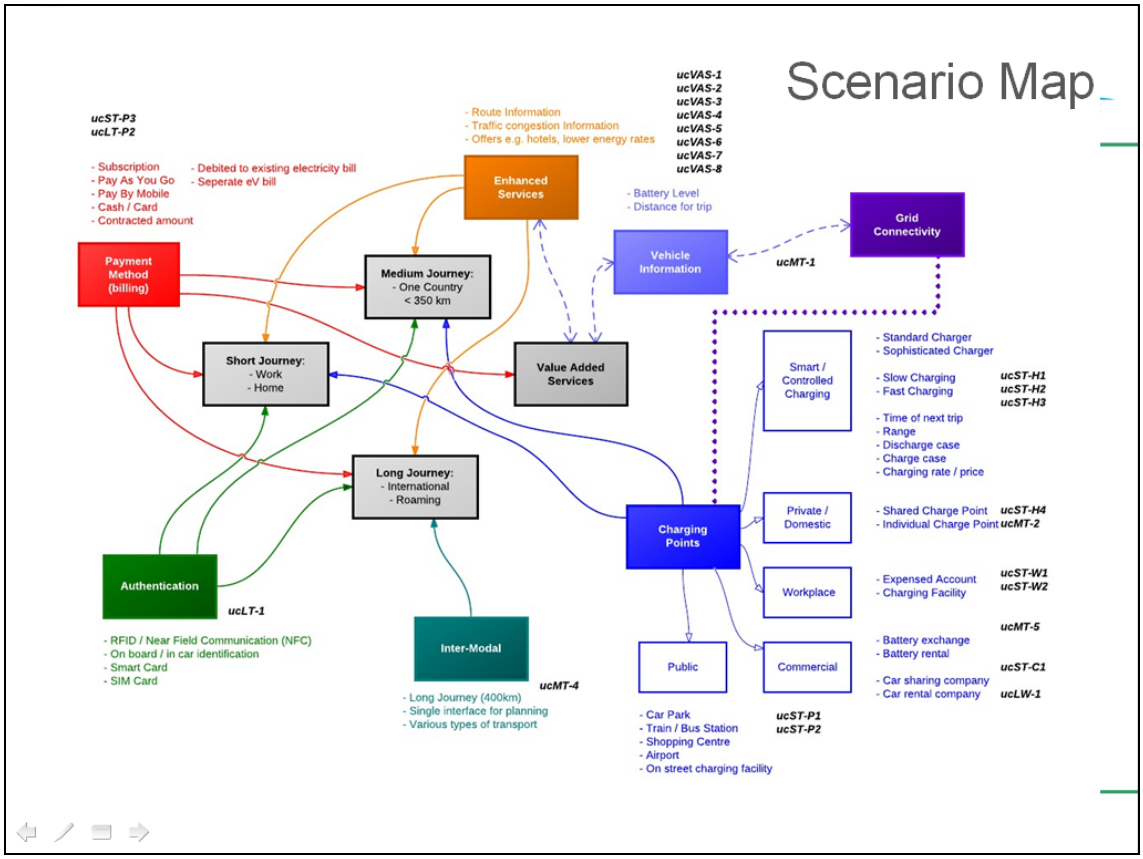


Figure 28: Electric Mobility - Scenario Map

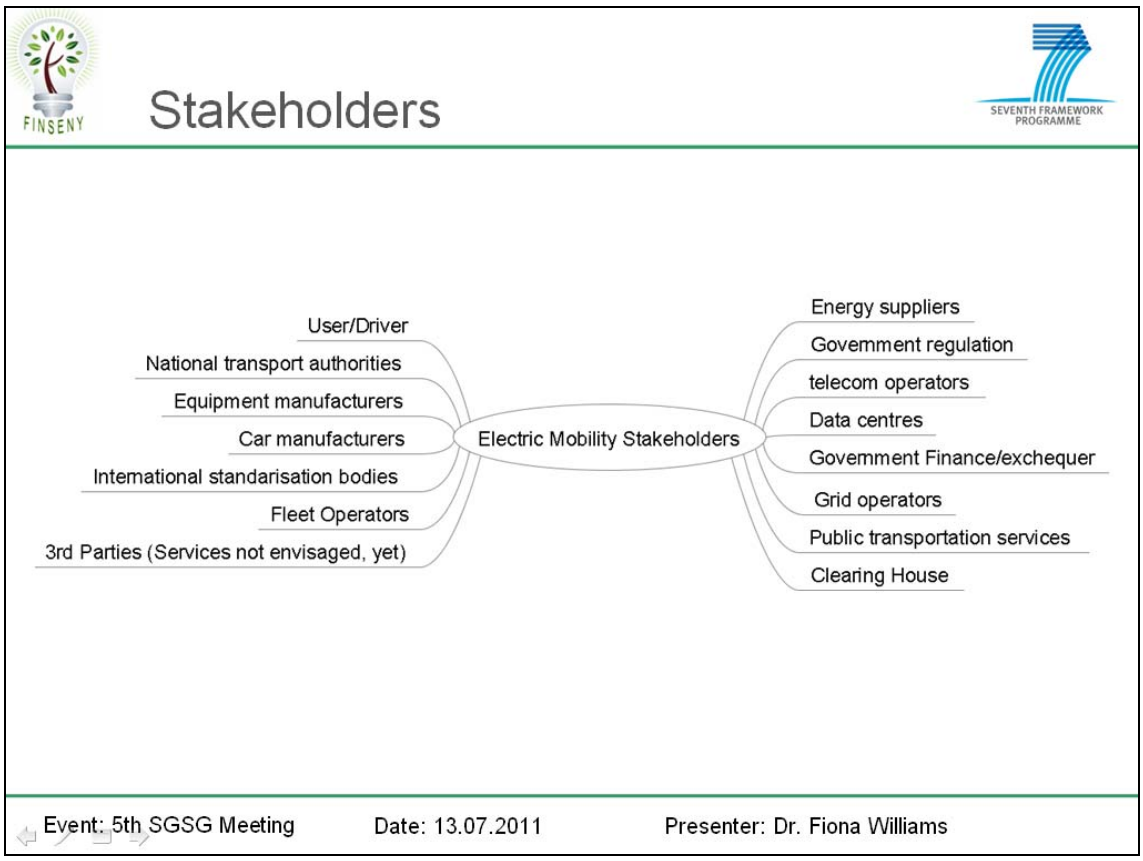
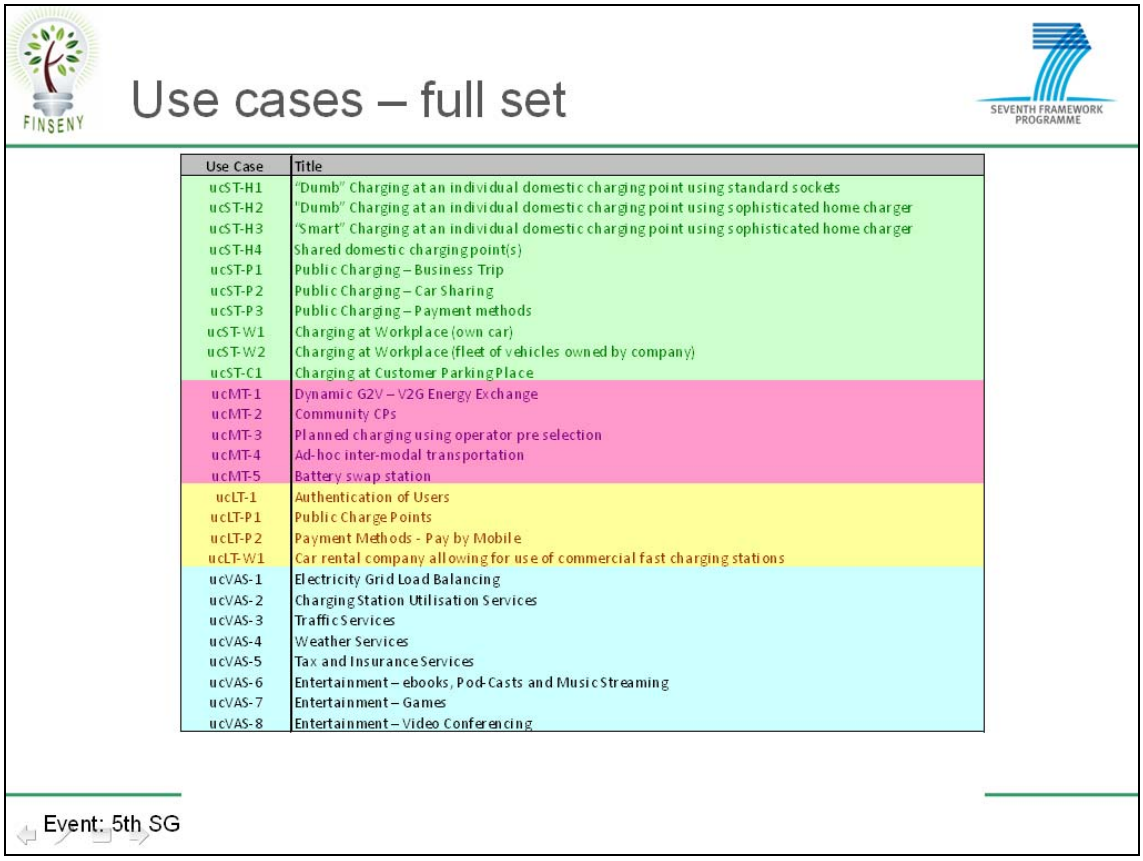


Figure 29: Electric Mobility – Stakeholders



Use Case	Title
ucST-H1	"Dumb" Charging at an individual domestic charging point using standard sockets
ucST-H2	"Dumb" Charging at an individual domestic charging point using sophisticated home charger
ucST-H3	"Smart" Charging at an individual domestic charging point using sophisticated home charger
ucST-H4	Shared domestic charging point(s)
ucST-P1	Public Charging – Business Trip
ucST-P2	Public Charging – Car Sharing
ucST-P3	Public Charging – Payment methods
ucST-W1	Charging at Workplace (own car)
ucST-W2	Charging at Workplace (fleet of vehicles owned by company)
ucST-C1	Charging at Customer Parking Place
ucMT-1	Dynamic G2V – V2G Energy Exchange
ucMT-2	Community CPs
ucMT-3	Planned charging using operator pre selection
ucMT-4	Ad-hoc inter-modal transportation
ucMT-5	Battery swap station
ucLT-1	Authentication of Users
ucLT-P1	Public Charge Points
ucLT-P2	Payment Methods - Pay by Mobile
ucLT-W1	Car rental company allowing for use of commercial fast charging stations
ucVAS-1	Electricity Grid Load Balancing
ucVAS-2	Charging Station Utilisation Services
ucVAS-3	Traffic Services
ucVAS-4	Weather Services
ucVAS-5	Tax and Insurance Services
ucVAS-6	Entertainment – ebooks, Pod-Casts and Music Streaming
ucVAS-7	Entertainment – Games
ucVAS-8	Entertainment – Video Conferencing

Figure 30: Electric Mobility - Use Cases: full set

2.7 Status FINSENY WP6 - Electronic Market Place for Energy scenario & Discussion

Giusi Caruso, Engineering.

The basic situation which the electronic market place for energy needs to tackle is characterized by energy market liberalization, a deregulated electricity market, many players being part of the value chain and a heavily increasing introduction of Renewable Energy Sources. When investigating the scenario "Electronic Market Place for Energy" these aspects need to be kept in mind. The stakeholder from this scenario's viewpoint are mapped to the four groups Grid Operators, Grid Users, Providers, Customers as shown in Figure 31.

To identify and collect the major use cases in this scenario, the following approach has been selected (see Figure 32): First, the major business cases have been identified: Demand Side Management, Trading Services, and Information and final user contracts about energy use. As a next step the Business Case scenarios are identified as shown in Figure 33 to Figure 35. Finally for each of them the use cases are collected which is currently ongoing. First results on the use case collection can be found in Figure 36.

During the discussion a remark was made that topics like Demand Side Management have been mentioned as part of other scenarios as well. Therefore the question came up how the FISNENY project assures that the same topic is not worked on in several places which could lead to duplications. It has been clarified that on the one hand side a specific work package is established to assure consolidation throughout the scenario work packages and on the other hand side quite some direct interaction is ongoing between the scenario work packages to make sure that common topics are assigned to well-defined scenario work packages and duplicated work is avoided.

Moreover, it has been commented that many of the mentioned use cases are already reality in the UK and other European regions. Thus it could be very valuable to also analyse the current status of the energy market business and then focus on new innovative use cases. But even if a use case is already reality today, there might be changes in future e.g., concerning granularity of traded energy, number and size of market participants, dynamicity and so on. Such use cases still need to be considered since their ICT requirements are expected to be much more advanced than it is seen today.

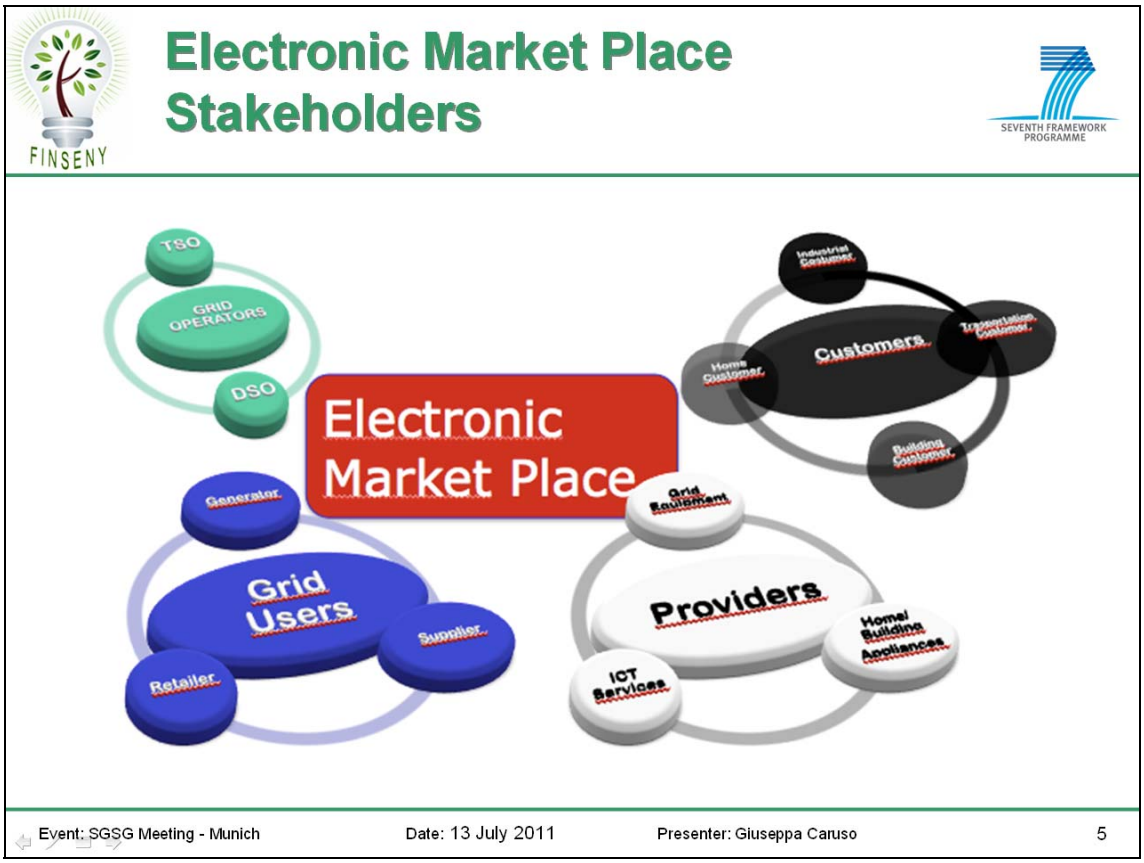


Figure 31: Electronic Market Place – Stakeholders

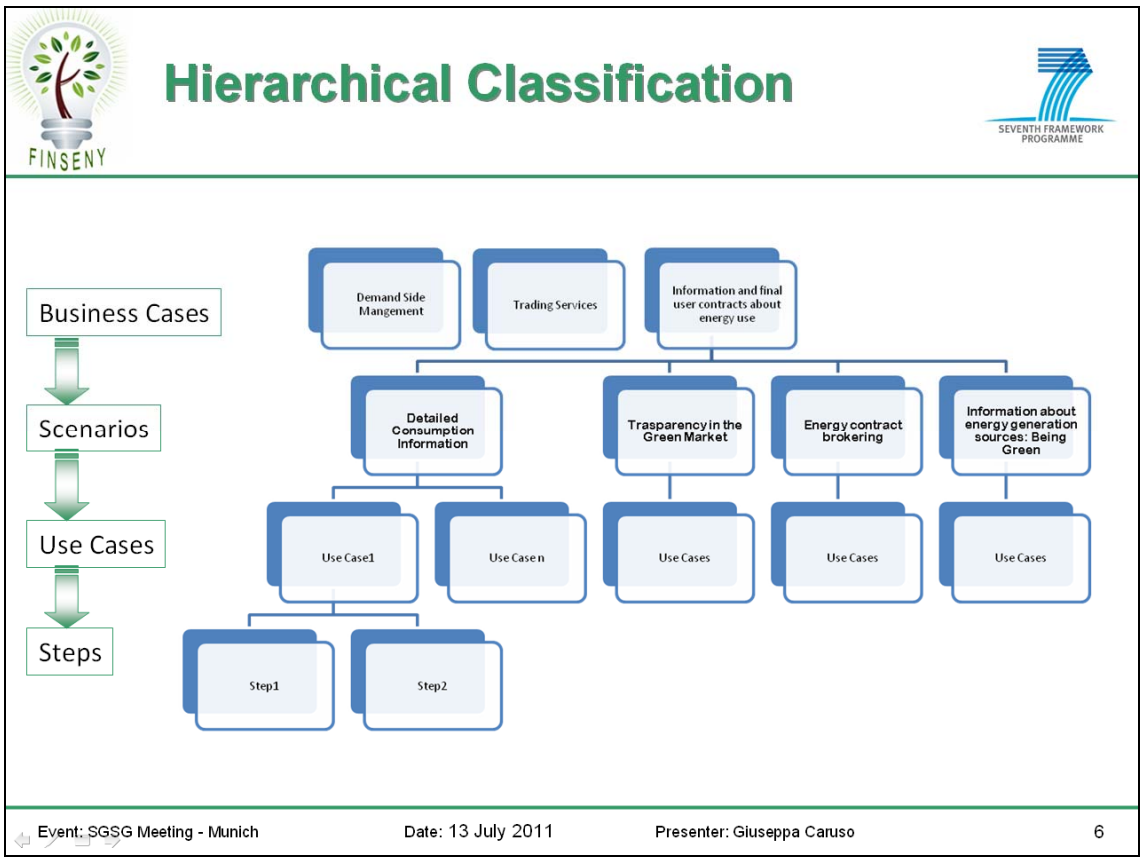


Figure 32: Electronic Market Place - Hierarchical Classification

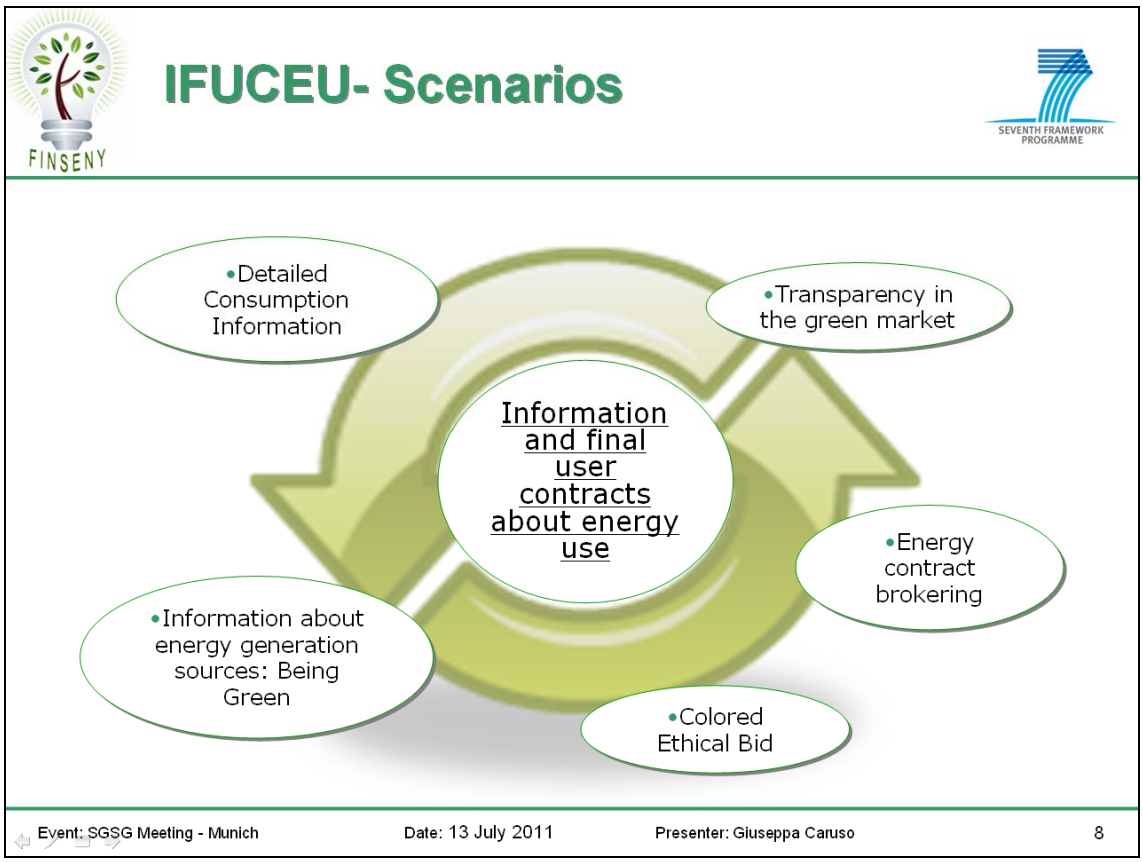


Figure 33: Electronic Market Place - Information and final user contracts about energy use

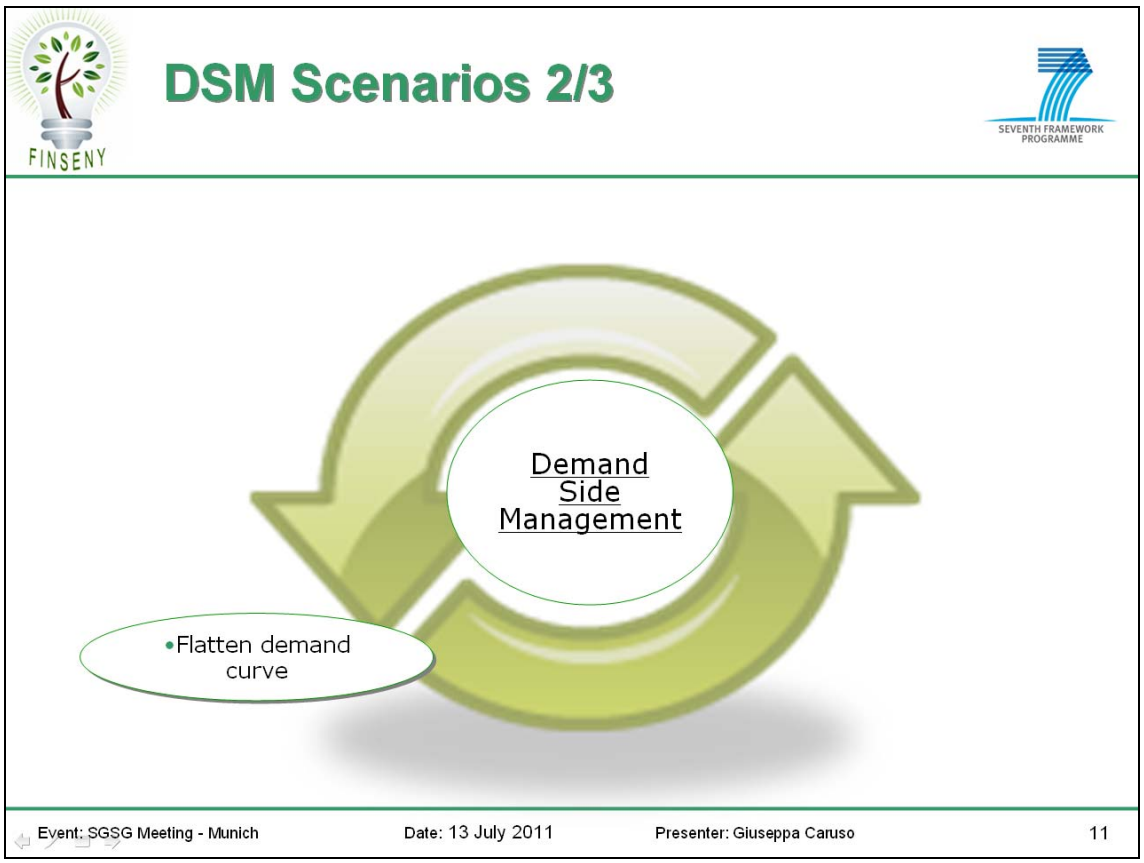


Figure 34: Electronic Market Place - Demand Side Management

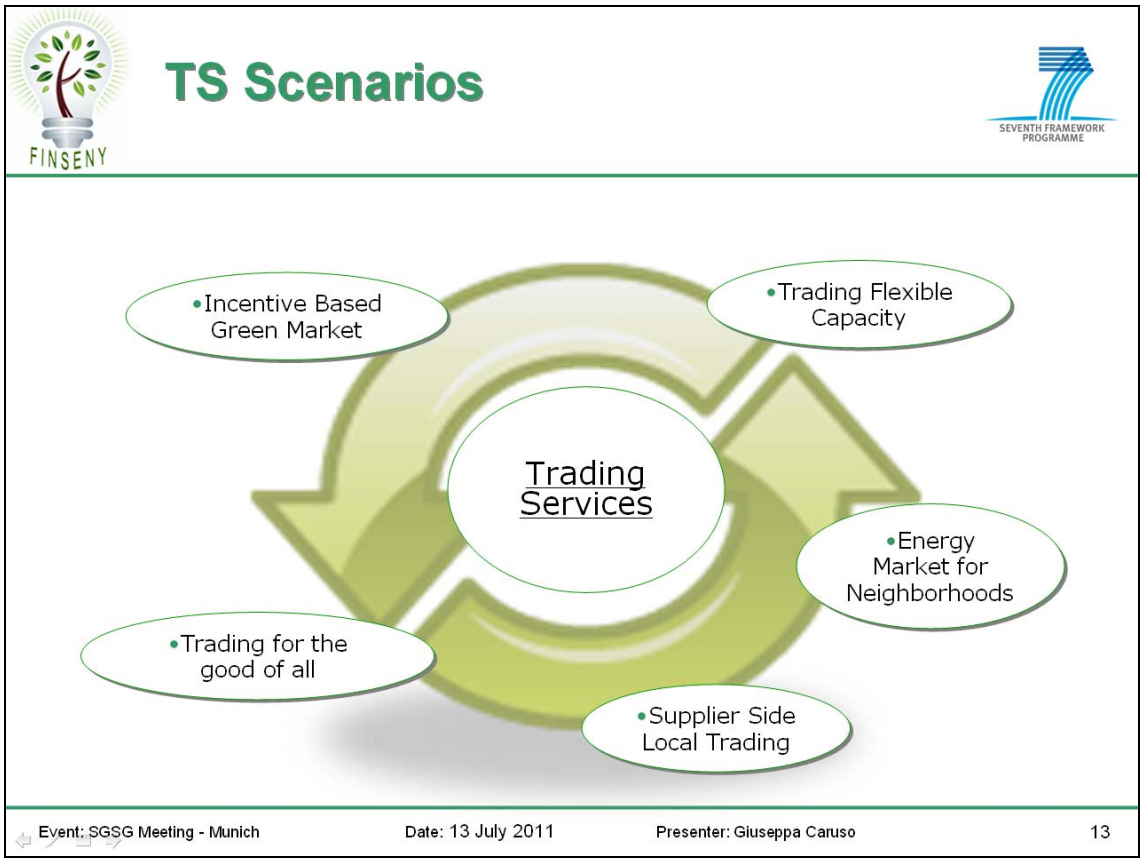


Figure 35: Electronic Market Place - Trading Services

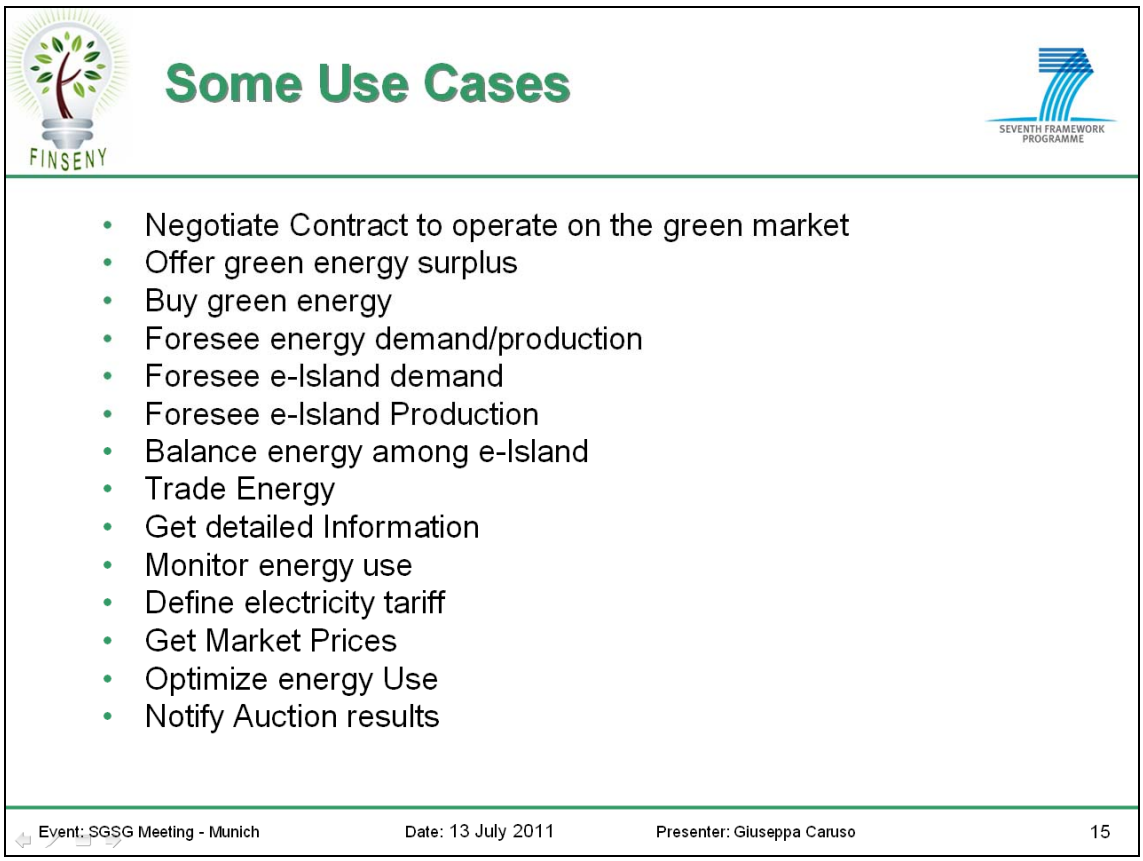


Figure 36: Electronic Market Place - Some first use cases

2.8 Organization of the SGSG – FINSENY interaction

Kolja Eger, Siemens AG.

After having presented the current status of the FINSENY project activities and having discussed the results with the SGSG community, the general planning concerning the interaction between the SGSG and FINSENY has been presented and discussed:

5th SGSG Meeting (13. July 2011):
In the current SGSG meeting the following two main topics are addressed: Sharing and discussing the first results of the FINSENY scenario evaluation to include the viewpoint of a large Smart Grid community and to consider this input in the respective FINSENY deliverables. Secondly, a detailed exchange on national, European and International Smart Grid activities to inform each other about achieved results, current activities and further cooperation opportunities. This exchange also has been supported by a FINSENY activity (see section 2.2) the results of which together with the SGSG input will be collected in the deliverable "Assessment summary of ongoing European projects and community activities (1st issue)" which is due by end of September 2011 and will be published in October 2011.

6th SGSG Meeting (planned for January/February 2012):
In the next SGSG meeting again two topics will be in the focus: Sharing and discussing the ICT requirements which will have been identified by FINSENY. Again the feedback provided by the SGSG will be considered in the following activities. By then the FI-PPP Architecture Board will already provide the results and views on generic & domain-specific enablers from the 1st iteration of ICT requirements collection and enabler definition. Feedback from the SGSG on this will be directly fed into the 2nd iteration. Secondly, the exchange on Smart Grid activities will be continued. The results including the SGSG input will be collected in the deliverable "Assessment summary of ongoing European projects and community activities (2nd issue)" which is due by end of March 2012 and will be published in April 2012.

7th SGSG Meeting (September 2012)
Finally, about 6 months before the end of the FINSENY project (FI-PPP phase 1) another SGSG meeting is planned to share the final results/views on generic & domain-specific ICT enablers developed by the FI-PPP Architecture Board with the SGSG and push forward the FI-PPP phase 2 preparation. For the

latter a FI-PPP phase 2 project proposal has to be worked out on Smart Energy trials. The submission deadline of which is expected to be end of October 2012. Moreover, the information exchange on further Smart Grid activities in the SGSG community will be continued.

2.9 FI-PPP project INFINITY - An Overview

Christopher Foley, FI-PPP project INFINITY, TSSG

The FI-PPP project INFINITY ("Infrastructures for the Future Internet Community") is collecting information on existing test-bed/trial activities and potential infrastructures which could be used for some FI-PPP trialing in the second phase. Obviously, all Smart Grid stakeholders – independent on being a member of the FINSENY consortium or not – could provide such infrastructures and therefore become part of the INFINITY repository by offering the respective information. The major benefit of doing so is summarized in Figure 40. Thus the INFINITY project, the basic data of which is shown in Figure 37 and Figure 38, has been presented to the SGSG.

INFINITY will profile test and trial infrastructures concerning their feasibility for the later FI PPP trial phase and thus facilitate the use of these infrastructures as major European assets. This will be done by first collecting the information which infrastructures are available and second by organizing some surveys to get further detailed information. Any opportunities, constraints, supported features and standards shall be composed. All this data will be entered in a database (Figure 39) through which these data will be available to the outside community. In addition, INFINITY has direct links to the FI-PPP usage area projects to clarify their requirements and expectations concerning potential trial infrastructures.

Noticeably, the focus is not on ICT infrastructures only but also on any usage area infrastructures: in our SGSG context this translates to any Smart Energy relevant test beds. Moreover, INFINITY also aims for supporting cross-domain interactions in future FI-PPP phases.

During the discussion some synergy potential has been identified between the FINSENY project assessment activity (see section 2.2) and INFINITY's trial/infrastructure assessment. Since FINSENY will soon start its survey to get further information from the currently identified Smart Energy related projects, this survey should include asking for available test beds and infrastructures. This information will be provided to INFINITY then.

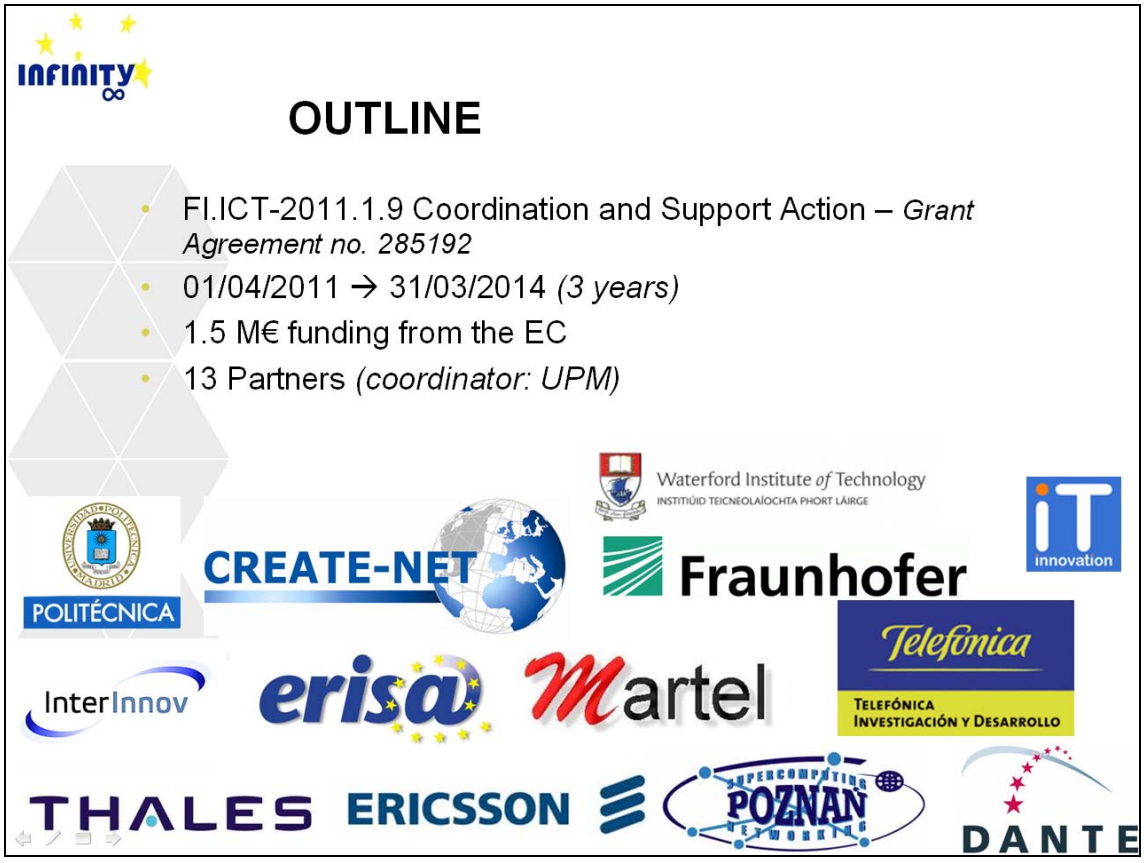


Figure 37: INFINITY - Project Outline

Figure 38: INFINITY – Activities

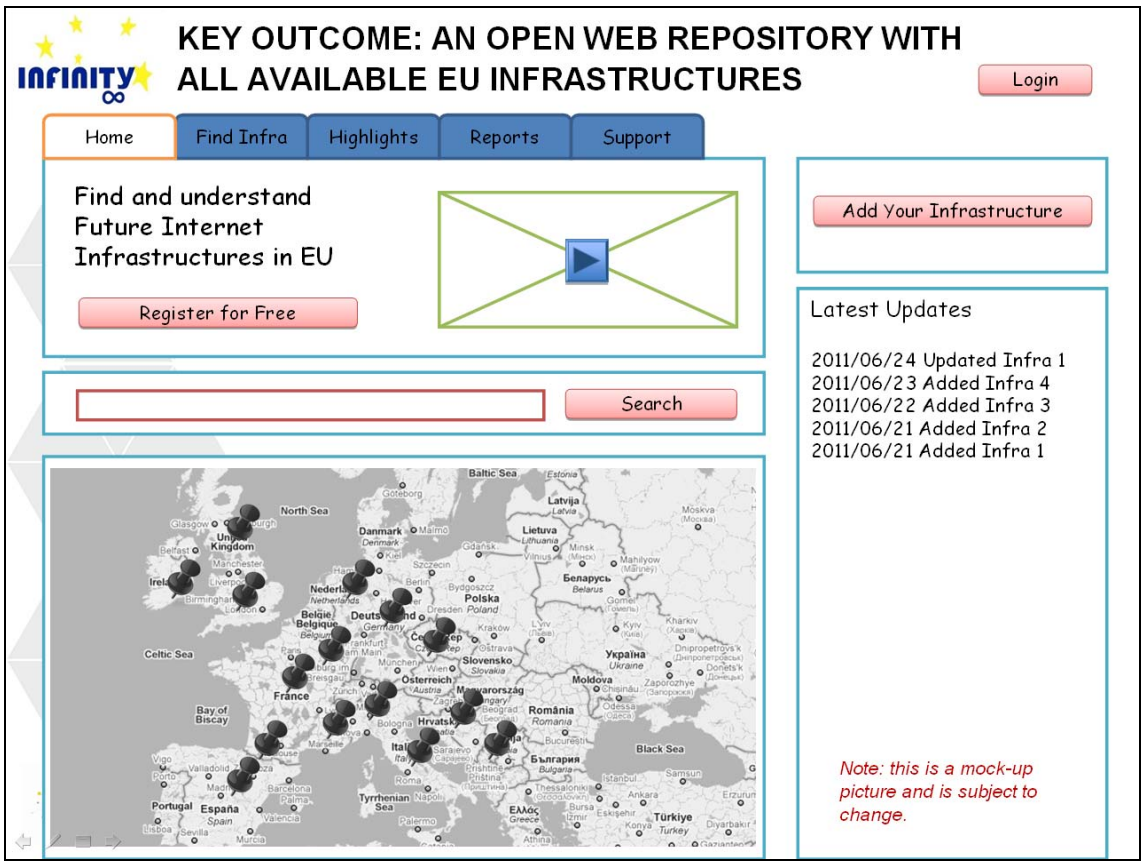


Figure 39: INFINITY - Open Web Repository

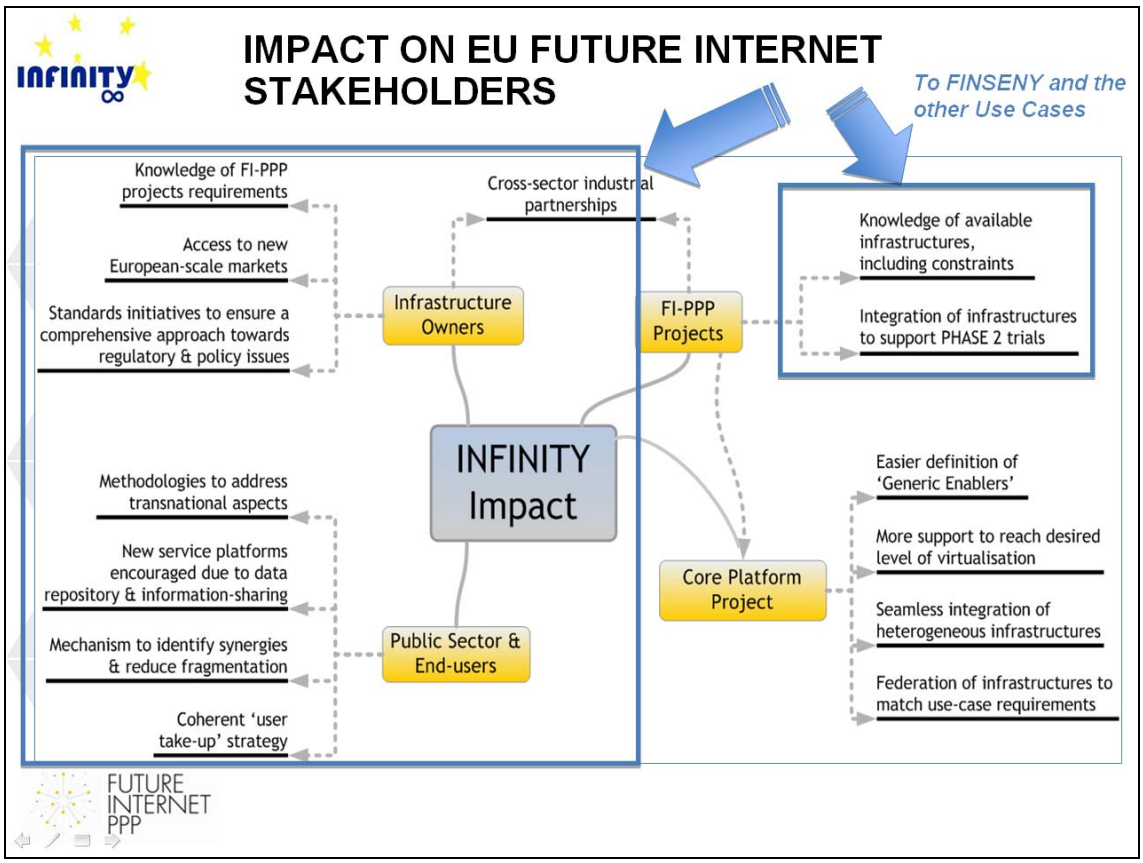


Figure 40: INFINITY - Impact on FI Stakeholders

2.10 Interoperability WG – Proposal

Stephen Pattenden, TAHI

At the 4th SGSG meeting some discussions came up on starting an Interoperability WG for interested stakeholder in the SGSG. Since then this idea has been followed up further and some more details have been presented at the 5th SGSG meeting finally asking who would like to be part of such a WG.

As an introduction into the topic the importance of Interoperability in the Future Internet context has been explained: From a high-level viewpoint, the Future Internet is all about what things are, how they relate to one another, what information they exchange, and how this can be turned into useful information, services and applications. Thus interoperability of things, services and applications is very important. In this context TAHI's mission (Figure 41) and working groups (Figure 42) have been presented. Especially in the Smart Home area TAHI has setup an Interoperability WG and is driving this very intensively. And there is a public TAHI Interoperability document available.

To explain the meaning of the term "Interoperability" a comparison with the terms "Co-existence" and "Interaction" has been made (Figure 43). Moreover the need for addressing interoperability especially in the Smart Grid context has been worked out (Figure 44).

Afterwards it has been intensively discussed what it would mean to create an SGSG Interoperability WG, knowing that a lot of standardisation has been done and is ongoing in the Smart Grid context - and standardisation is also some sort of assuring interoperability. Therefore it was not perfectly clear, what should be done in addition. Remarkably, the IEEE P2030 recently published an interoperability document. The major add-on of interoperability seemed to be the verification of standards according to practicability e.g. assured by testing and trialling activities.

Finally it has been decided that a further analysis needs to be done what the concrete actions of such an SGSG Interoperability WG would be. To achieve this, the recent TAHI Interoperability documents will be put into the SGSG repository, potentially together with further available Interoperability documents (IEEE P2030): this might help to get a better understanding how interoperability activities have been organized somewhere else and what was the differentiator to the standardization there. A decision on starting an SGSG Interoperability WG will be made latest in the next SGSG meeting.

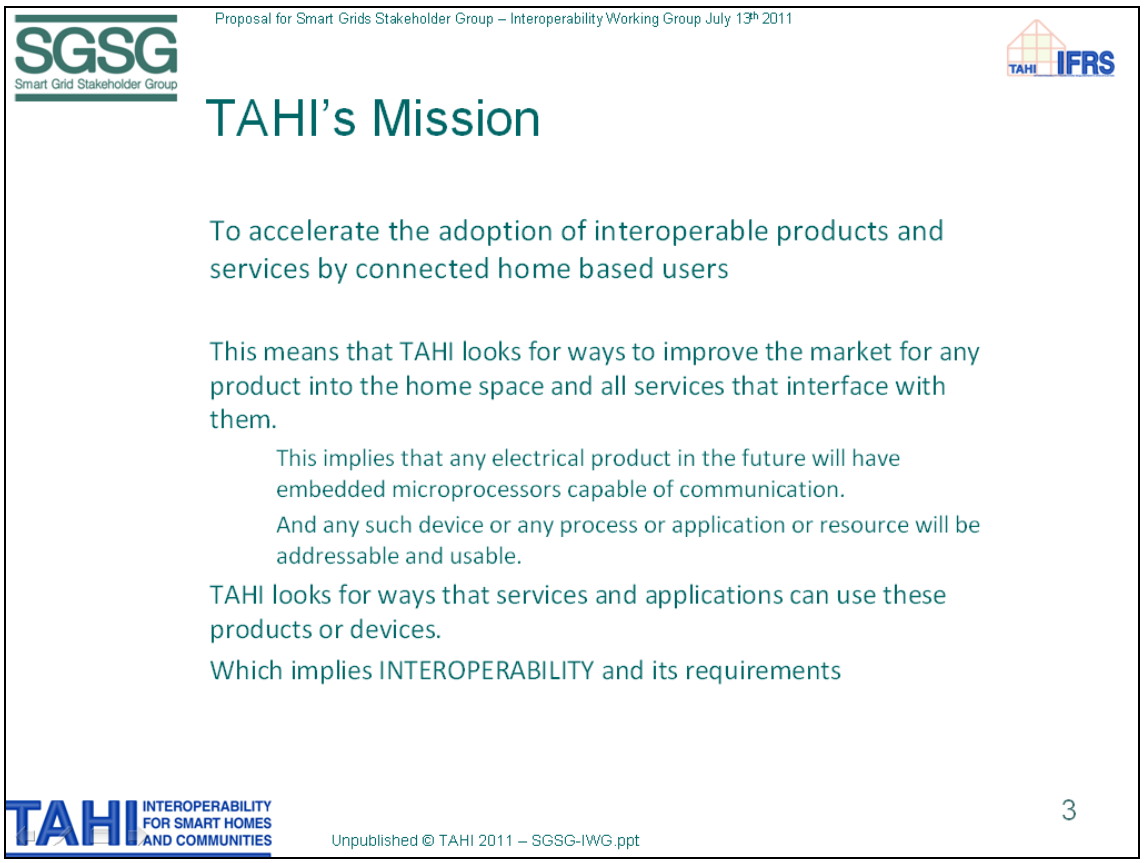


Figure 41: TAHI's Mission

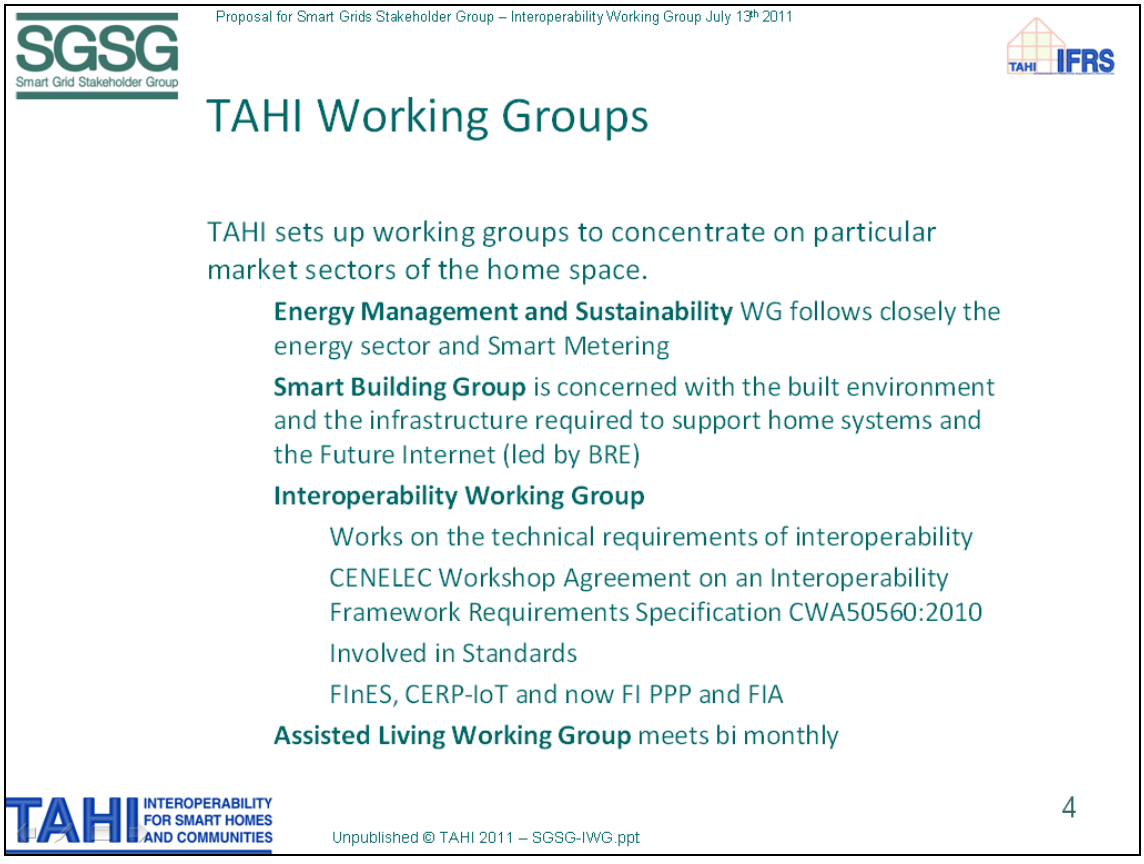


Figure 42: TAHI Working Groups

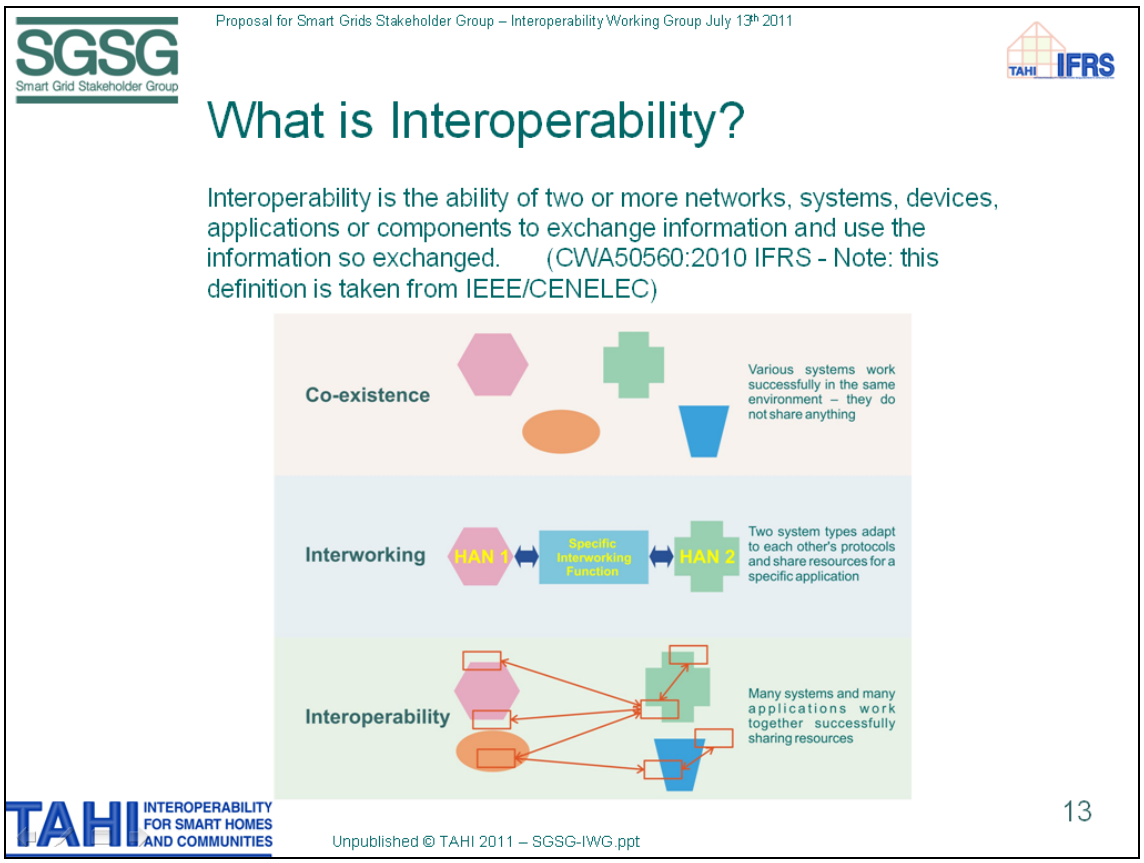


Figure 43: What is Interoperability?

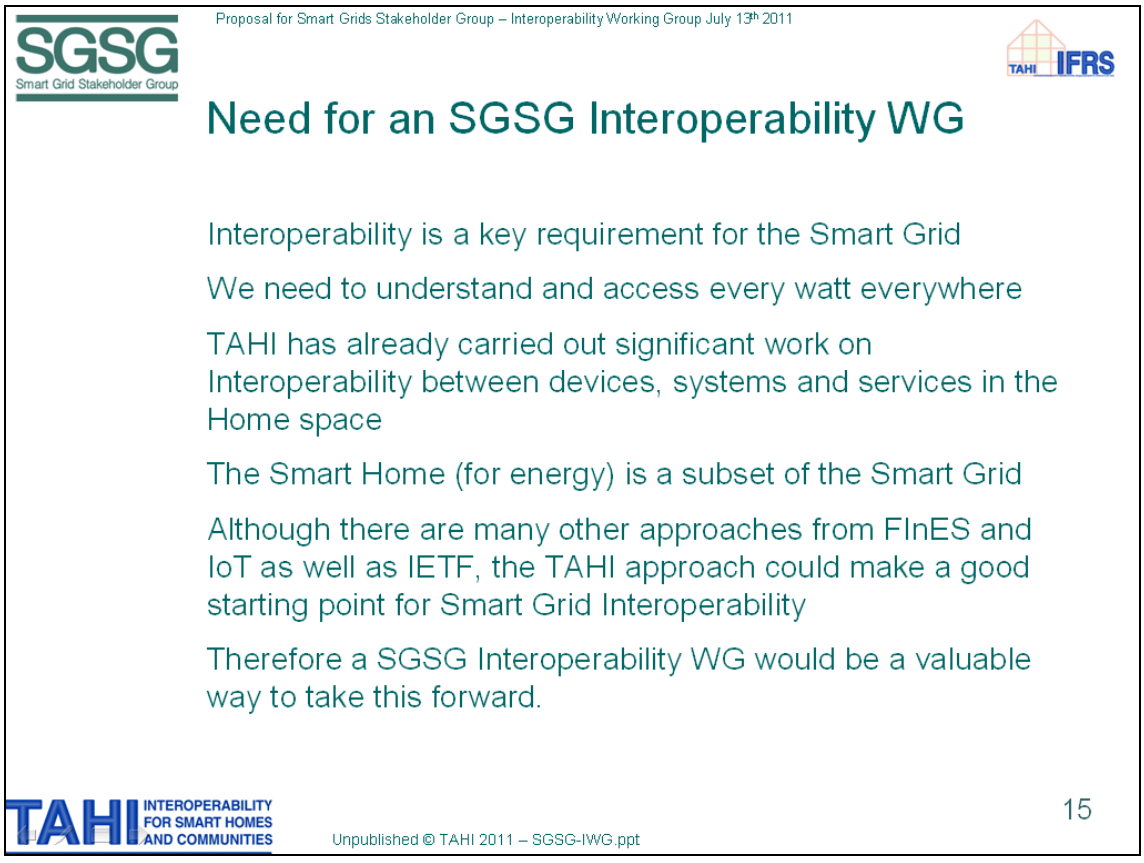


Figure 44: Need for an SGSG Interoperability WG

2.11 Smart Grid @ Tecnalia

Iraide Unanue Calvo, Tecnalia

To follow up the tradition of the SGSG, new members are also given a chance to express their views and interests with relation to Smart Grid. This is also an important part of the information exchange the SGSG is fostering. At this meeting the new SGSG member Tecnalia took the chance to give an overview on its activities in the Smart Grid area.

3. Conclusion and summary of actions

Summarizing the event, very interesting discussions came up as described in detail in the section before. In the closing session a couple of general points have been mentioned in addition: As the presentations have shown, many use cases are occurring in several FINSENY scenarios. Therefore it is essential to install an efficient coordination process throughout the project to assure that the same use cases are not analyzed several times. Moreover the relationships between different use cases need to be taken into account. This is especially important when now as a next step the ICT requirements are identified for the numerous use cases. Second, the topic black-out prevention has not been addressed in the presentations about the FINSENY scenarios and the proposal was made that this should be considered as well.

Several actions have been agreed on during the meeting. They are already mentioned in the respective subsections above. Nevertheless these actions are summarized below again:

Action 1
Intensify the interaction between SGSG, FINSENY and INFINITY to benefit from synergies of each others activities, e.g. when performing assessments of ongoing activities and setting up databases.

Action 2
Reflect the comments and contributions from the SGSG on the intermediate results of the scenario evaluation and incorporate them into the FINSENY deliverables.

Action 3
Further evaluate the proposal on establishing a SGSG Interoperability WG and come to a decision latest until next SGSG meeting.

Action 4
Publish information to be presented and discussed at the next SGSG meeting some reasonable time before the meeting, so that the audience has a chance to scan the material beforehand.

The next SGSG meeting will take place in the January/February 2012 time frame. The precise time and location will be clarified offline. The main points for discussion from today's viewpoint are: Sharing and discussing the ICT requirements which will have been identified by FINSENY and again considering the feedback provided by the SGSG. By then the FI-PPP Architecture Board will already provide the results and views on generic & domain-specific enablers from the 1st iteration of ICT requirements collection and enabler definition. Feedback on this will be directly fed into the 2nd iteration. Secondly, the exchange on Smart Grid activities will be continued. The results including the SGSG input will be collected in the deliverable "Assessment summary of ongoing European projects and community activities (2nd issue)" which is due by end of March 2012 and will be published in April 2012.

There was also the question whether it would be useful to foresee a slot during the next meeting to present some results from other FI-PPP projects. Whether this should be done in the SGSG or better in the FINSENY/FI-PPP context will be discussed and clarified offline as well.

Last but not least, thanks a lot to all participants of the SGSG meeting for joining and to the people who have supported the preparation of the meeting. Looking forward to the next SGSG meeting beginning of 2012!