Collaborative Project of the 7th Framework Programme

WP 8:
D8.1 Dissemination Master Plan and Public Exploitation Guidelines

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Abstract (for dissemination)	This document outlines the dissemination strategies for the BEAMS project. The dissemination activities are divided into two main themes: scientific dissemination and general dissemination. General dissemination activities are maintaining the web site, producing brochures and newsletters. Scientific dissemination activities set out plans for publications/presentations in key conferences, workshops, magazines and journals. This document also addresses the preparation of the exploitation activities through a first identification of exploitable products.
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1 Introduction

1.1 Purpose and scope of the Document

The purpose of the Dissemination Plan for BEAMS is to identify and organise the activities to be performed in order to promote the project's results with the widest dissemination of knowledge from the project. Dissemination is a horizontal activity and concentrates on disseminating the results of the project itself to a wide range of existing or potential stakeholders. The BEAMS consortium will promote project's results with:

- the dissemination of the project results in the scientific domain,
- the promotion of the project in the industrial world,
- the dissemination via centres and networks of excellence.

In addition, some advertising material has been developed and will be updated during the lifecycle of the project; in particular an interactive website will help to support both external dissemination and interaction between the project partners.

Finally, brochure and flyers are planned: they are distributed to all partners and used to disseminate the project at exhibitions and conferences. The aim is to form a critical mass of key industrialists and academics to promote the BEAMS concept. Effective dissemination is important in order:

1) to make key individuals and groups aware of the work,
2) to enable them to understand the concepts and potential benefits and
3) to obtain critical feedback from them to assess the perceived value of the approach.

1.2 Scope of the Document

Deliverable 8.1 is a key element to guide the consortium in the planning of all the dissemination and exploitation activities demanded by the project.

The templates used for the dissemination material were already produced and delivered at the Project Handbook, D9.1 [1]. The Dissemination Master Plan keeps a direct link with that document, not only because of the templates used, but also because it settled the basis of the publication procedures and exchange of information. Actually, the annexes to D8.1 are common to D9.1 – updated with new material after three months of work.

Within the dissemination activities (WP8), there is a second but even most important link to deliverable 8.2 –i.e. the website. It is one of the main tools for dissemination, and is delivered at the same time as this document. Section 3.2 summarise graphically what can be found on-line, providing a description on the different information available in the Internet. Moreover, D8.1 is the first step towards the Exploitation Plan (D8.3) to be published by the end of the project.

Last but not least, the table of publications and targeted conferences will be regularly updated at the Project Periodic Report (D9.1). In this way, it will be possible to keep track of the project progress with regards to the dissemination activities.

1.3 Structure of the Document

The document is structured in six main sections. It starts with a short description on the general objectives of the dissemination and exploitation for the project and

continues with the description of the general strategy and main means to promote the project results and BEAMS approach.

The scientific dissemination has been considered as a special topic, due to the research nature of the project and the number of contributions that BEAMS could make to the state of the art.

A pretty important part of the dissemination strategy, is the organisation of workhops and interaction with other groups working in the same research arena. All this networking is planned and presented in the last dissemination section of the document.

To conclude, the last section tackles as a first approach to exploitation related issues. A set of preliminary exploitation plans is presented in the relevant deliverable dealing with the exploitation plan, D8.3.

2 Dissemination and Exploitation Objectives

The dissemination planned actions endeavour to create a large awareness of BEAMS results in order to generate a worldwide market in which European players can expect to have an important role.

2.1 Target Audience

In order to maximize the impact of the results, a first analysis of the main stakeholders and target audience relevant to the project is presented in this document.

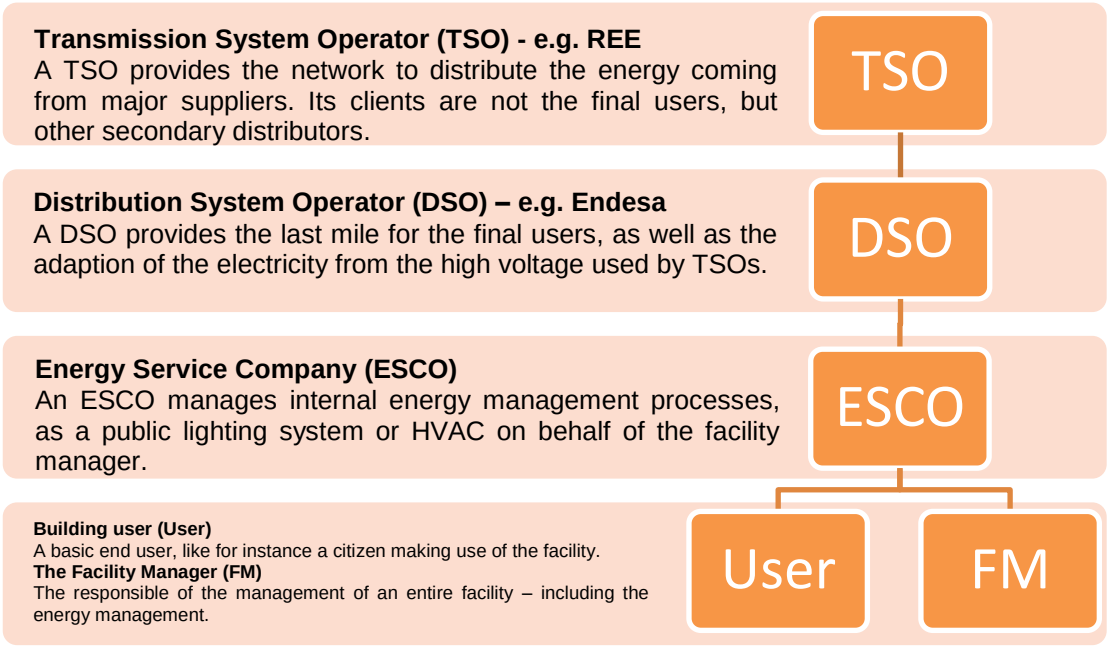

Figure 1 – Key stakeholders.

On the one hand, the electricity network operators (transmission or local) could benefit of the Open Gateway proposed by BEAMS in order to have access – trough previous privacy agreements - to detailed information on the loads and sources of electricity active in the facility. Furthermore, as any third party, they could be able to develop their own applications to establish global energy efficiency management policies –i.e. for instance to balance the grid making use of the elements available in the facility. This would require a contract with the facility manager and the establishment of an SLA regulating the service.

It is at this level where an Energy Service Company could also benefit of BEAMS, and therefore become a target audience. Facility Managers willing to outsource certain operations related to energy – as management of public spaces and HVAC systems – could easily do it through the gateway developed in the project, whilst keeping monitoring capabilities and even certain control through the Facility Management Environment (FAME) (BEAMS Consortium, 2012)

On the other hand, the end users (users of the building or manager) will benefit directly from the end-user application and simulation tools being developed within the project. It is noteworthy to mention, that building users may not have a direct relationship with the ICT tools being deployed, but they will experience the impact of the new strategies being deployed. Moreover, these users will be part of the general

public dissemination target group, which will enlarge the impact of the project in mass media.

BEAMS distinguishes between internal and external audiences.

2.1.1 Internal Audience

The internal audience of the BEAMS project is directly involved in the project and comprises both academic and industrial BEAMS partners, the European Commission as well as the pre-stabling Interest Group

- **Academic/Research Intitutions Partners**
  - Barcelona Digital, Spain.
  - Institute Of Communication And Computer Systems, Greece.
  - Fraunhofer Iwes Advancing Energy Systems, Germany.
  - Università Del Salento, Italy
- **Industrial Partners**
  - Etra Investigación Y Desarrollo S.A., Spain
  - Thales Italia Spa., Italy
  - Sodexo Facilities Management, Spain.
- **Interest Group**
  - Football Club Barcelona, Spain.
  - The City of Barcelona, Spain.
  - Endesa, Spain.
  - Agencia de Energía de Barcelona, Spain
  - Live (Logistics for Implementation of Electric Vehicles), Spain
  - Public Power Corporation S.A (PPC S.A), Greece.
  - Adiconsum, Italy.
  - Transelectrica, Romania.
  - The Distretto Regionale dell'Edilizia Sostenibile (Regional District of Sustainable green building), Italy.
  - Elettrostudio, Italy.
- **European Commission.**

2.1.2 External Audience

The external target audience is not directly involved in the BEAMS project and an indicative initial list comprises of:

- **Research Communities:**
  - Energy Saving Community
  - Embedded System Community
  - Monitoring and Control Community
  - Internet of Things Community.
  - Distributed Systems Community.
  - Software Engineering Community.
  - Smart Grid Community.
  - Service Engineering Community.
  - Middleware Community.
  - Data Capturing and sensor Community.

- **Industry:**
    - Transmission and Distribution System Operators.
    - Energy Service Companies.
    - Application Developers and Integrators.
    - Manufacturers of monitoring and control equipment, especially smart meters.
    - Service Developers.
    - Facility Managers
- **Other FP7 projects:**
    - BeyWatch (BeyWatch).
    - MOLECULES (Mobility base on electric connected vehicles in urban and interurban Smart, clean environment) (MOLECULES Consortium).
    - AIM (AIM) (A novel architecture for modelling, vitalising and managing the energy consumption of household appliances).
    - NOBEL (NOBEL consortium) (Neighbourhood Oriented Brokerage Electricity and monitoring system).
    - AmI-MoSES (AMI-MOSES) (Ambient-Intelligent Interactive Monitoring System for Energy use Optimisation in Manufacturing SMEs).
    - Be Aware (BeAware) (Boosting Energy Awareness)
    - IntUBE (Intelligent Use of Buildings' Energy Information, 2009) (Intelligent Use of Buildings' Energy Information).
    - SmartHouse/SmartGrid (SmartHouse/SmartGrid).
    - REEB (REEB).
    - EnergyWarden (EnergyWarden)
    - ENERgy Saving Information Platform for generation and consumption networks (ENERSip) (ENERsip).
    - EnPROVE (EnPROVE).
    - Friendly Intelligent Energy Management System for Existing Residential Buildings (FIEMSER) (FIEMSER).
    - Positive Energy Buildings thru Better controL dEcisions (PEBBLE) (PEBBLE).
    - Roadmap Enabling Vision and Strategy for ICT-enabled Energy Efficiency (REViSITE) (REViSITE)-
    - Energy Efficiency and Risk Management in Public Buildings (ENRIMA) (ENRIMA)-
    - Built Environment Sustainability and Technology in Energy (BEST)
    - Intelligent Energy Efficiency Control in Hospitals (HOSPILOT) (HOSPILOT).
    - 3EHouses (3e-HOUSES), eSESH (eSESH) and E3SoHo (E3SoHo).
    - SAVE ENERGY (SAVE ENERGY)
    - Led-based intelligent street lighting for energy saving (LITES) (LITES).
- **Standarisation Bodies and Alliances**
    - OpenADR Alliance [47].
    - USNAP Alliance [48].

- OpenSG group [49]:
- ICT4E2B forum [7]
- OGEMA Alliance [50]
- IPSO Alliance (www.ipso-alliance.org)
- OASIS (www.oasis-open.org)
- IETF (www.ietf.org)
- ESMIG (www.esmig.eu)
- ETP SmartGrids (www.smartgrids.eu)

- **Students interested in the research areas identified above**
- **General Public:**
  - Potential customers that might use the facilities affected by BEAMS developments.
  - End users of applications that benefit result from BEAMS.
- **Citizens representations bodies:**
  - Municipalities and public authorities willing to provide support to the greener strategies developed within the project –i.e. decision makers.
  - Association of citizens willing to impulse the saving of electricity.

2.2 Dissemination Objectives

The dissemination plan main objectives were already drafted at the DoW (NOBEL Consortium, 2009), identifying the following four levels of impact:

Level 1: Dissemination objectives within BEAMS consortium (Internal communication)

The main objectives for the dissemination activities are to ensure and establish:

- Clear channels of responsibility between the coordinator, the different management bodies and the BEAMS consortium.
- Install a functional and a secure knowledge management system through the implementation of a web collaborative platform to allow easy and efficient information transfer between BEAMS partners.
- Identify and establish contacts with additional projects of interest to the research activities of BEAMS.

Level 2: Dissemination activities towards the scientific community (External communication)

The main objectives for the dissemination activities towards the scientific community are to:

- Identify suitable relevant scientific papers to inform scientist community of BEAMS research results (cooperative systems).
- Identify suitable congress or seminars to inform the objectives and scope of BEAMS project.
- Plan and execute joint meeting and workshop with suitable projects to promote research exchange and share knowledge.
- Identify suitable collaboration projects relevant to BEAMS.

Level 3: Dissemination activities towards and society

The main objectives for the dissemination activities in level 3 are to:

- Identify others stakeholders who would benefit of the knowledge acquired by the

BEAMS consortium.

- Established a correct communication towards the identified stakeholders.

Level 4: Dissemination activities towards industry

The main objectives for the dissemination activities in level 4 are to:

- Established contact with industrial association and national and European level in energy efficiency and monitoring software sector.
- Attendance to main international energy efficiency and monitoring software and hardware fairs and events.

The above objectives, and the means to achieve them, are tackled considering the different dissemination materials and actions available to promote the project. If the target audience identified in the previous section is considered, different strategies and goals can be pointed out:

Internal Target Audience

- Share knowledge within the consortium, focus consortium on research goals.

  Dissemination of knowledge within the consortium is crucial for the success of the project. A group collaboration tool is used as repository for all BEAMS relevant documents and allows fast and easy access via the Internet. Furthermore, project meetings (Intra-WP, Inter-WP, and consortium meetings) will be held regularly to disseminate results within the consortium and to focus all partners on the research goals. Intra-WP meetings are only considered as dissemination meetings if two or more organisations are involved.

  Furthermore, the research addressed in BEAMS can be useful for other departments and units within each of the involved organisations. Internal promotion does not only serve to grant an efficient collaboration among partners in the consortium, but also to extend the results of the project internally. In this way, synergies may arise with other research or business groups that could help the taking over of the project after its finalisation.

External Target Audience

- Make target audience aware of BEAMS.

  This is a primary dissemination goal since it is a prerequisite to achieve further goals. A various number of means will be used for this purpose including the BEAMS website, participation at conferences and workshops, presentation of BEAMS at trade fairs and exhibitions, distribution of leaflets, fact sheets, posters etc.
- Share results with other research groups.

  The BEAMS approach and results will be presented to other research groups (in particular other FP7 projects) working on alternative approaches to gain feedback and to ensure that the results will converge to a maximum extent. Hence, BEAMS will participate in and/or organizes scientific conferences and workshops.
- Promoting deployment of BEAMS results.

  The primary target audience for the deployment of BEAMS results is the BEAMS interest group.
- Attracting students to participate in the BEAMS project.

  All participating research organisations will incorporate research results in their courses thereby promoting and disseminating the idea and content of BEAMS. These activities will attract students to participate in the BEAMS project, e.g. by choosing their PhD, Bachelor's or Master's thesis from the BEAMS field.

The dissemination objectives and means depend on the target audience. The following table summarizes the dissemination goals and means for the identified audiences.

Audience	Dissemination Goals	Dissemination Means
Academic and Industrial Partners	Share knowledge, focus on research goals.	Distribution of documents via group collaboration tool, project meetings and internal presentations to other units and departments.
Research Communities	Share knowledge, gain feedback.	Conferences and workshops; papers, posters and brochures.
Industry	Share knowledge, gain feedback, promoting deployment of BEAMS results.	Workshops, conferences, exhibitions and trade fairs, posters and brochures.
Other F7 projects	Share knowledge, gain feedback, establish cooperation.	Joint workshops, conference tracks, research visits.
Students	Attract students to participate in BEAMS project.	Lectures.
General Public	Inform general public about key ideas of BEAMS.	Website, flash animations, brochures, video (YouTube) and public demonstrations.
Citizens representations bodies	Involve decision makers in the project in order to promote the saving of energy through the neighbourhood approach proposed by the project	Interest Group, Website, flash animations, brochures, video (YouTube) and public demonstrations

Table 1 – Dissemination strategy depending on target audience.

2.3 Exploitation Objectives

Exploitation of results is not expected – and neither planned – to be achieved during the life time of the project. The nature of the research activity is not to obtain a number of commercial products capable of being marketed at the end of the project, but to developed and test prototypes that help understand and validate the approach presented by the project and its benefits. These prototypes will later become commercial products in a time framework of 2-10 years.

Thus, during the execution of the project, exploitation is mainly related to the preparation of the continuation of the project. In this way, dissemination and exploitation activities are closely connected.

The exploitation objectives can be summarised as:

- The identification of the exploitable stocks after analysis of the research results.
- The preparation of the continuation of the project, paving the way to the marketing of BEAMS results.
- The search of industrial partners willing to adopt the scientific results from the project.
- The contribution to relevant standards.

3 Strategy for General Dissemination

The strategy for general dissemination – not scientific specific – is first based on the promotion of a common corporative identity for the project in order to facilitate the

identification of any BEAMS material and result. This is done, not only by creating a project logo and visual identity, but also making use of a common set of templates to publish information internally and externally. This common identity was already presented in (NOBEL Consortium) and is completed hereafter with the implementation of the website, brochure and poster, as well as the necessary data to recreate the colours and styles of the project.

Moreover, new means of general dissemination, as lectures, multimedia material and internet 2.0, are presented.

3.1 BEAMS Identity

3.1.1 BEAMS Logo and Acronym Usage

The project logo comes in 3 different forms.

Table 2 – BEAMS Logo

It is advised that the BEAMS logo appears in all BEAMS related documents. Any material co-funded with the project budget needs to make explicit reference to it – see section **¡Error! No se encuentra el origen de la referencia.** – and if possible make use of the BEAMS logo. It has been developed in three different types in order to be able to use it in different formats and for different purposes.

In this way, the first logo is the official and corporative image of the project to be used by default. The second one is reserved to formats where the information has to be represented vertically. Last but not least, the third variation of the logo has been designed for ornamental purposes, to be used in large illustrations or as background.

All three logos have been produced with a white and dark background.

The Acronym of the project – i.e., BEAMS – is the main representative mark. When possible it has to be used with the above mentioned logos, respecting the font and colours. Otherwise, it should be written with capital letters.

The table hereafter provides the information to recreate the colours and styles of the project.

		Inks	Digital
		Four colours	RGB
Blue Night		Pantone 282 C	100% cyan 80% magenta 0% yellow 70% black	R:0 G:34 B: 76 Web: #00224c·
Orange		Pantone 151 C	0% cyan 60% magenta 90% yellow 0% black	R:255 G:123 B: 0 Web: #ff7b00
White			0% cyan 0% magenta 0% yellow 0% black	R:255 G:255 B: 255 Web: #ffffff

Table 3 – BEAMS colours.

3.1.2 Templates for Documentation and Presentation

As already explained, the templates for documentation and presentation were part of the contents included in the Project Handbook (NOBEL Consortium). Nevertheless, in order to keep a self-contained document, a short summary explaining the purpose of the templates, can be found hereafter.

3.1.2.1 Deliverable, documents

Any deliverable or document, including presentations, must follow the rules herein specified.

The ultimate responsibility for the quality of deliverables resides with the peer review team that must check the quality of all deliverables (not including the periodic progress reports), before the final submission to the EC.

ETRA, as project coordinator, will review the progress reports containing resource reporting information, as the last stage before submission to the EC.

Deliverables will normally fall within the work to be done in the work packages, and as such, a work package leader or activity leader will be assigned the production and editing of a particular deliverable.

Once the project coordinator has submitted the deliverable to the project officer, he/she will upload simultaneously the PDF version in the restricted web server. Once the document is approved by the EC, in the case of a public deliverable, the document will be made available in the public web site.

At least the project coordinator will keep an additional copy for backup and security reasons.

A template for documents is available at the project repository – see Annex A. It is mandatory that any document – included in the contract (NOBEL Consortium, 2009) or not – being published out of the consortium makes use of the before mentioned template.

3.1.2.2 Presentation, posters and graphical material

Any presentations of contents obtained from the project may make use of the corporative presentation template available at the repository – see Annex A.

In addition to the available template, the consortium has prepared a number of alternative materials to help disseminating and presenting the project results in a coherent and effective way – in line with (NOBEL Consortium, 2010):

- Two different poster templates – see Annex A – are available in A3 format to present the project at conferences and poster sessions.
- A newsletter template is also available for dissemination – see Annex A. The consortium will produce a minimum of three newsletters (one per reporting period).

3.1.2.3 Meeting minutes and agenda

The reporting of meetings is mandatory to guarantee that the decisions taken are known and accepted by all the people working in the project. This is a critical part of the internal dissemination processes.

A template following the corporative identity created for the project is available in Annex A and the project repository.

3.1.2.4 Quarterly Report

Every three months the coordinator will ask the partners to complete a simple form to gather the (possibly estimated) basic information on the resources spent per partner and the work performed.

There is a template for the QR available at BEAMS repository –see Annex A.

3.2 BEAMS Web Site

BEAMS web site (http://www.ict-beams.eu) is the main general dissemination tool, available to anyone with access to the Internet. It all serves as a distribution channel of the rest of dissemination material: brochures, presentations, posters, videos, etc.

Figure 2 – Web site home page.

The web site has been created with one of the most well-known CMS: Wordpress (Wordpress). It is a free and open source system that ne can be used for in principle any kind of website. Wordpress is released under the GNU General Public License (GPL) and is designed to be extensible. It has been chosen due to its main strengths: its flexible and adaptable workflow, very good security, extensibility, high usability and flexibility.

The web site will be periodically updated with news and summaries on the progress of the project.

All the web site transactions are logged, in order to track any kind off attack, wrong usage or similar situations.

3.2.1 Web site public area

It includes a description of the Project according to the public information of the DoW.

The available sections are the following ones:

- Home This section is the home page and contains a general and brief description of the project including five subsections:
    - Welcome
    - Beams mission and final results
    - Last news
    - Tags
    - Next events
- About Beams. This section contains a general and brief description of the project including two subsections:
    - Mission and objectives.
    - Consortium.

Figure 3 – Web site project page.

- News. This section allows the publication of existing news directly related to BEAMS objectives and technologies. This is one of the main life sections of the web-site.

  The news updates also the “news” framework at the left of the main window
- Events. This section contains all the events internal and external to the project that keep a tight relation with BEAMS, including the project workshops. Before a workshop takes place, the section will contain the workshop agenda, the registration form and the logistics information. After the workshop, the agenda will contain links to each one of the presentations made. There will be one section per workshop. This section will be kept updated and is fed initially with the list of events identified in section 4.2.

This list updates also the “upcoming events” framework at the left of the main window.

Figure 4 – Web site events page.

- Downloads. This section makes available all BEAMS public documents. It present threesubsections:
    - Dissemination Material with the:
        - BEAMS brochure.
        - BEAMS presentation.
    - Public deliverables.
    - Interes Froup Download Area –only visible when logged in- with the:
        - Technical papers published by the BEAMS consortium, in the context of the project.
        - Restricted deliverables.
- Interest group. This section introduces BEAMS interest group (IG) and invites visitors to get involved in the IG through an electronic form to become a member.

  The members of the interest group are invited via e-mail to the project workshops and l also receives the electronic project newsletters.
- Related Links. Links of interest for the project.
- Contact link. In the upper corner and the right bar, the website counts with links to the official e-mail address for the project (info@ict-beams.eu), the RSS feed, ant the main social networks where the project is active.

3.2.2 Private area and repository

The web site has a private area accessible to the members of the consortium that enables the publication of events and news, and to upload publications and deliverables. The management of this area is responsibility of the Dissemination Manager (NOBEL Consortium).

Members of the IG that get registered have read access to the Private Download Section. Customised information for the IG will be also available at the IG section.

Last but not least, in addition to the private area, as of the project Handbook, each partner in the consortium has access to a project repository where documents, deliverables, templates, etc. are stored and exchanged. This part of the web-site is not directly accessible from the home page in order to maximise security. Each project participant has a user name and a password, providing unrestricted access to all the folders and files.

3.3 BEAMS Brochure

A brochure has been prepared to promote and enhance the visibility of the project – see Annex B. It will be distributed to potential interest group members at

conferences, workshops and exhibitions. Its primary goal is to introduce the BEAMS project to the interest group and the general public.

A double-sided A4 leaflet has been designed. It is prepared for printing using an A3 sheet in a way that with a simple fold the external and internal A4 sides form the brochure.

The cover page presents the partners – logos, project title and date of publication, whilst the back page introduces in details the consortium and BEAMS main goal.

In the inside pages the motivation for the project is the main topic, jointly with the scientific and technological objectives. The main actors involved are also introduced.

The brochure is not supposed to be periodically updated as the Newsletter or presentations. However, when new results became available, a new electronic version will be published at the web site.

3.4 BEAMS Newsletters

There be a periodic e-newsletter containing summaries of the project's achievements. The newsletter will be distributed by any of the consortium members participating at European or national events dealing with related subjects, and by post or e-mail to the *Interest Group* members and relevant bodies.

The newsletters will be published at the end of each reporting period, preferably coinciding with the project workshops. They will be structured at least in the following sections:

- An editorial presenting the advances and progress from the last issue and an analysis on the state of relevant research initiatives connected to BEAMS.
- A Guest Column to invite third parties to participate in the dissemination of the project. Other FP7 project will be invited to be part of the newsletters.
- A partner profile section, introducing two of the members of the consortium each time.
- A recent events sections, where it will be possible to promote not only the news coming from the project workshops, but also the events and conferences where BEAMS has been presented.

There is a template for the newsletter available at BEAMS repository –see Annex A.

3.5 BEAMS Posters

A large poster (size A1) has been designed as generic dissemination material. It presents the motivation and main goal of the project, the key stakeholder, the approach and the potential impact.

The poster can also be printed in an A3 sheet, and members of the consortium have access to the master poster to even print bigger sizes.

In addition, two templates are available at BEAMS repository –see Annex A – in order to use a common framework when preparing new scientific posters for conferences and events.

It is expected to produce new posters after the first year of the project, with some preliminary results to promote.

3.6 BEAMS Presentation

Besides the template for presentations presented in section 3.1.2.2, a general presentation has been compiled to provide a quick look to the project objectives and contents –Annex B.

This set of slides will be updated periodically with the new results as the project advances.

The presentation introduces the consortium, key figures of the project and planned outcome.

3.7 BEAMS Demos and multimedia material

Demonstration and multimedia material are powerful tools to attract the attention of the general public.

BEAMS plans for a major public demonstration by the end of the project. In the meantime, and as soon as the first prototypes are available, small demonstration shows and mock up will be prepared to promote the project in general media and press. In this context, a flash animation is under preparation to provide an artistic vision of the project approach.

Internet 2.0 mechanisms will be used not only to publicly make available the multimedia material, but also to retrieve the feedback from the audience. Thus, with the results of the first year, the following tools will be deployed:

- A link to TWITTER that will allow:
    - To inform on the project progress and milestones achieved.
    - To inform the users on the new services provided by the project.
    - To get ideas from the users on additional services that could be provided.
- A link to FACEBOOK that will allow:
    - To get to the project end users – not IG members -, getting their feedback on the project services
        - To create a project supporting group that will encourage the interest in the services provided.
        - To promote the creation of specific user groups attending to the user personal preferences and views.
- A link to a YouTube channel to publish demonstration and promotional videos.

All these tools will help in gathering real-time market intelligence and feedback and connecting more personally to potential end customers.

In the use and dissemination of multimedia material, the Brokerage Agent Front-end will play a major role, as it will be the main interface used by general public directly involved in the project trials.

3.8 BEAMS Lectures

The BEAMS project will be presented in several courses at different universities. The goal is attract students to contribute to BEAMS, e.g. by choosing their PhD, Master's or Bachelor's thesis from the field of BEAMS.

The preliminary list of universities where lectures could be given includes, obviously, the academic institutions participating in the project.

4 Strategy for Scientific Dissemination

The considerations made above for general dissemination should be considered also for the specific scientific strategy.

4.1 Journals and Magazines

The journal publications are planned for the later phase of project when the results and findings of the project research will be available. The BEAMS project consortium will target the following scientific journals and magazines to disseminate its research results and findings.

- IEEE Transactions on Mobile Computing
- IEEE Transactions on Dependable and Secure Computing
- IEEE Pervasive Computing
- Elsevier Journal of Pervasive and Mobile Computing
- IEEE Transactions of Knowledge and Data Engineering
- IEEE Transaction on Parallel and Distributed Systems
- IET Magazine on Engineering and Technology
- IEEE Magazine on Intelligent Systems
- IEEE Magazine on Distributed System Online

4.2 Conferences and Workshops

The list of conferences and workshops relevant to the project is kept updated in the web site and BEAMS repository. Each partner detecting a new opportunity is expected to circulate the information to the consortium, update the List of Conferences Table and, if possible, upload to the repository the relevant Call For Papers.

The objective is to be present – through the submission of papers and posters – in the most relevant conferences. The following sections summarise the events monitored so far. The complete fact sheet available on these events, can be found at the web site.

4.2.1 SmartGrid Europe 2010

Date: 9 – 11 October 2012

Location: Amsterdam, The Netherlands

Web: http://www.td-europe.eu

Transmission & Distribution/Smart Grids Europe is the European platform for TSOs and DSOs, featuring a three-day conference and exhibition, as well as various pre-conference events and excellent networking opportunities.

4.2.2 3rd Workshop on eeBuildings Data Models

Date: 25 – 27 July 2012

Location: Reikjavik, ICelands

Web: http://ecppm.rabygg.is/Workshops/tabid/156/language/en-US/Default.aspx

The 3rd Workshop on eeBuildings Data Models (Energy Efficiency Vocabularies) is going to take place at the European Conference of Product and Process Modelling (ECPPM) 2012, to be held in Reykjavik, Iceland. The Conference Dates 25th - 27th July, 2012, and is organized by Innovation Centre Iceland (http://www.nmi.is/english/).

4.2.3 European Sustainable Week 2012

Date: 18 – 22 June 2012

Location:

Web: http://www.td-europe.eu

Every year hundreds of organisations and individuals in over 30 countries take part in EU Sustainable Energy week by hosting Energy Day events and activities that promote energy efficiency and renewable energy sources.

4.2.4 8th South-East European Congress & Exhibition on Energy Efficiency and Renewable Energy

Date: 28 March 2012

Location: Sofia, Bulgaria

Web: http://www.eeandres.viaexpo.com/

The event will be a meeting point for business and knowledge exchange in the region of South-East Europe. Many of the 2011 exhibitors have already booked stands again and will showcase innovative systems for bioenergy as well as solar, wind and hydro energy, solutions for increasing energy efficiency, e-mobility and environmental services. The forum will feature sessions on financing of EE & RES projects, energy efficiency, RES electricity – PV and wind, bioenergy, and smart grids.

4.2.5 WSED 2012 - World Sustainable Energy Days 2012

Date: 29 February 2012

Location: Wels, Austria

Web: http://www.wsed.at/en/world-sustainable-energy-days/

The largest annual conference in this field in Europe offers a unique combination of events on sustainable energy production and use - covering energy efficiency and renewable energy sources for buildings and industry. For more than 20 years, experts and decision makers from all over the world have come to Upper Austria to attend the WSED events. This conference has attracted more than 10,000 participants from 99 countries in the last few years.

4.2.6 Future Network & Mobile Summit 2012

Date: 4 – 6 July 2012

Location: Estrel Berlin, Germany

Web: http://www.futurenetworksummit.eu/2012/

In the context of convergence and innovation, the 21st Future Network and MobileSummit will address the challenges of building the Future Internet Infrastructures, based on mobile, wireless and fixed broadband communications technologies.

This is the twenty-first in a series of Annual Conferences supported by the European Commission, which regularly attracts over 500 delegates from industry and research to share experiences and research results, identify future trends, discuss business opportunities and identify opportunities for international research collaboration under the ICT Theme of Framework Programme 7 (FP7). It will thus contribute to showcasing European research in the field, and position it within the multiplicity of related initiatives supported in other regions of the world.

4.2.7 International Green Computing 2012

Date: 5 – 8 June 2012

Location: San Jose California, USA

Web: www.green-conf.org

IGCC'12 will provide a forum for presenting and discussing innovative research on a broad range of topics in the fields of sustainable and energy-efficient computing, and computing for a more sustainable planet. The conference will hold a technical program, panels, workshops, and tutorials on these topics.

he creation of a global sustainable energy infrastructure.

4.2.8 ICT2012

Date:

Location: Brussels, Belgium

Web: ec.europa.eu/information_society/events/ict/2010/index_en.htm

This biennial event has become a unique gathering point for researchers, business people, investors, and high level policy makers in the field of digital innovation. ICT 2010 will focus on policy priorities such as Europe's Digital Agenda and the next financial programme of the European Union for funding research and innovation in ICT.

4.2.9 IEEE SMARTGRIDCOMM 2012

Date: 5 – 8 November 2012

Location: Tainan, Taiwan

Web: www.ieee-smartgridcomm.org/cfp.html

The 3rd IEEE International Conference on Smart Grid Communications (SmartGridComm 2012) is to provide a forum to discuss all aspects that are relevant to the smart grid communication technologies and to bring together researchers from academia, industry, and government institutions to exchange ideas, explore enabling technologies, discuss innovative designs, and share field trial experiences and lessons learnt.

4.2.10 Business Zoo: Innovative business models for integrated housing renovation

Date: 18 April 2012

Location: Antwerp, Belgium

Web: http://one-stop-shop.org/node/41

This event is about innovation in housing renovation. It's about integrated renovation business models. It's about unburdening the client, by offering a one-stop-shop concept. Innovative technologies can be clustered and presented as a holistic renovation solution. SME competences and know-how can be increased.

4.2.11 EU Financing for Energy Efficiency and Renewables in Public Projects

Date: 23 April 2012

Location: Berlin, Germany

Web:
http://www.euroakad.eu/fileadmin/user_upload/dateien/seminars/EU_Financing_for_Energy_Efficiency_and_Renewables_in_Public_Projects_PR.pdf

Gain experience in how to successfully use Structural and Cohesion Funds for energy efficiency projects. Get first hand information on the European Energy Efficiency Fund launched in 2011. Learn how to support EE and RE projects with JESSICA and other EU funding sources. Become familiar with financing mechanism.

4.2.12 The 12th European Forum on Eco-Innovation

Date: 25 April 2012

Location: Amsterdam, Netherlands

Web: http://ec.europa.eu/environment/ecoinnovation2012/1st_forum/

The 12th European Forum on Eco-Innovation, entitled 'Scaling-up sustainable construction - Through value chain innovation', will examine: what kind of added value eco-innovation can bring to the construction sector; how eco-innovation can transform the industry's supply chain; how to communicate these benefits to public authorities, construction professionals and building owners; a review of the opportunities and challenges as part of a sustainable construction value chain.

4.2.13 2012 Conference on Renewable Heating and Cooling

Date: 26 April 2012

Location: Copenhagen, Denmark

Web: http://conference2012.eu/

The European Technology Platform on Renewable Heating and Cooling and Euroheat & Power, the international association representing the district heating and cooling sector in Europe are joining forces and organising the 2012 Conference on Renewable Heating and Cooling which will take place in Copenhagen on 26 – 27 April 2012. Denmark is the perfect host for this high-level conference, as it selected green growth as one of the top priorities of its current EU Presidency.

4.2.14 ICT for sustainable homes

Date:

Location: Nice, France

Web: www.ict-sustainablehomes.org

The ict for the sustainable homes conference and exhibition is organised by Sigma Orionis, a private company founded in 1984 and operating since then in the Sophia Antipolis science park - often called "the European Silicon Valley" located in the Southeast of France.

Sigma Orionis is coordinating or involved in several research projects funded by the European Commission and addressing the theme of “ICT for sustainable homes”, such as PARADISO, BEYWATCH, and FUTURENEM. Sigma Orionis is also a member of several European Technology Platforms in the ICT area, such as NESSI, NEM, ISI and e-Mobility.

4.2.15 Covenant of Majors (Local Energy Days)

Date:

Location:

Web: www.eumayors.eu/calendar/energy_days_en.htm

http://www.pactodelosalcaldes.eu/index_es.html

The European Union (EU) is leading the global fight against climate change, and has made it a top priority. Its ambitious targets are spelt out in the EU Climate Action and Energy Package , which commits Member States to curb their CO_2 emissions by at least 20% by 2020. Signatories of the Covenant of Mayors contribute to these policy objectives through a formal commitment to go beyond this target through the implementation of their Sustainable Energy Action Plan.

4.2.16 Intelligent Energy Europe (IEE annual conference)

Date: 24 January 2012

Location: Brussels, Belgium

Web: http://ec.europa.eu/energy/intelligent/events/2012/european-info-day_en.htm

Intelligent Energy – Europe (IEE) offers a helping hand to organisations willing to improve energy sustainability. Launched in 2003 by the European Commission, the programme is part of a broad push to create an energy-intelligent future for us all. It supports EU energy efficiency and renewable energy policies, with a view to reaching the EU 2020 targets (20% cut in greenhouse gas emissions, 20% improvement in energy efficiency and 20% of renewables in EU energy consumption).

4.2.17 ManagEnergy (annual conference)

Date:

Location:

Web: http://www.managenergy.net/events?cat_id=1

ManagEnergy is a technical support initiative of the Intelligent Energy - Europe (IEE) programme of the European Commission which aims to assist actors from the public sector and their advisers working on energy efficiency and renewable energy at the local and regional level.

4.2.18 GridWeek 2012

Date: 2– 4 October 2012

Location: Washington, DC, USA

Web: www.gridweek.com/2012

As grid-modernization and smart grid efforts provide the energy industry with more information, a broader system view, and more efficiency and control, we are faced with increasing complexity. The challenge lies in deriving value from that complexity -- for all stakeholders.

4.2.19 Mind-Boggling Ideas For A New Energy Culture!

Date: 9 May 2012

Location: Guimarães , Portugal

Web: http://www.energy-cities.eu/Guimaraes

The energy transition is already underway with local authorities being both, drivers and witness to it. One month before the RIO+20 UN Conference on Sustainable Development, Energy Cities' Annual Rendezvous invites Mayors to demonstrate their political commitment in Guimarães (Portugal), one of Rio de Janeiro's (Brazil) twin cities.

4.2.20 ENNEREG International Conference Transfer of knowledge in the field of sustainable use of energy

Date: 22 May 2012

Location: Poznan, Poland

Web: http://www.regions202020.eu/cms/events/ennereg-international-conference-22nd-may-2012-poznan-poland/

This ENNEREG international conference, Transfer of knowledge in the field of sustainable use of energy, takes place in Poznan, Poland on 22 May 2012. Presentations will cover: the ENNEREG Project and Regions 202020 website; Regional Sustainable Energy Action Plans (SEAPs) for Wielkopolska and Pomorskie Voivoideship; Good Practices and Sustainable Energy Projects (SEPs) from ENNEREG Pioneer regions; and EU policies of relevance to actors at regional and local levels.

4.2.21 2012 American Association of Blacks in Energy Annual Conference

Date: 17 - 20 Abril 2012

Location: Columbus, Ohio Area, USA

Web: www.cvent.com/d/dcq83x

This conference will include energy experts, academics and executives from around the country to discuss and debate the Power of Energy in the United States. The AABE 35th Annual Conference will provide access to innovative energy solutions and experts, visionaries, corporate and small business leaders from across the nation. Smart Electricity World USA.

Date: 14 – 16 June 2010

4.2.22 ACM BuildSys (annual conferene)

Date:

Location:

Web: buildsys.org/2011/

The World is increasingly experiencing a strong need for energy consumption reduction and a need for efficient use of scarce natural resources. Official studies report that buildings account for the largest portion of World's energy expenditure and have the fastest growth rate. Clearly, energy saving strategies that target energy use in buildings and surroundings can have a major impact worldwide, driving the current energy market toward self-sufficiency and self-sustainability. This calls for effective techniques and methods that enable accurate carbon foot printing, monitoring and control of appliance activity, energy auditing and management in buildings and surroundings and the generation of energy awareness.

Wireless sensor networks (WSNs) play a key role in enabling energy-saving systems in buildings and surrounding spaces by providing a reliable, cost-effective and extensible solution that can be placed in existing as well as new structures and can be controlled via the Internet. In fact, WSNs allow the monitoring of the energy consumption in near-real time and, as such, they are an essential tool in the control loop that will be used in future structures for the generation and usage of diverse types of energy.

4.2.23 Green Week 2012

Date: 22 May 2012

Location: Brussels, Belgium

Web: http://ec.europa.eu/environment/greenweek/

The 12th edition of Green Week, the biggest annual conference on European environment policy, will take place from 22 to 25 May 2012 in Brussels. This year's theme is "Water". Green Week offers a unique opportunity for debate and exchanges of experience and best practice. Over the past decade, the conference has established itself as an unmissable event for anyone involved with protecting the environment.

4.2.24 Energy Efficiency & Behaviour Conference 2012

Date: 20 September 2012

Location: Helsinki, Finland

Web: http://www.behave2012.info/

Energy Efficiency & Behaviour Conference 2012 welcomes both researchers and practitioners. The conference investigates the role of consumption behaviour, regulatory steering and support mechanisms, and innovative user-friendly solutions in terms of their contribution to energy efficiency and sustainable development. The conference particularly welcomes examples of successful and practical product and service innovations that promote energy efficiency among consumers and other end-user groups.

4.2.25 27th European Photovoltaic Solar Energy Conference and Exhibition

Date: 24 September 2012

Location: Frankfurt, Germany

Web: http://www.photovoltaic-conference.com/

The EU PVSEC is the largest international conference for photovoltaic research and technologies, industries and applications, and at the same time is a leading international PV industry exhibition. It gathers the global PV community together to conduct business, to network and to present and discuss the latest developments and innovations in Photovoltaics.

4.2.26 E-Energy 2012

Date: 9 – 11 May 2012

Location: Madrid, Spain

Web: http://events.networks.imdea.org/content/e-energy-2012/home

e-Energy, is the third International Conference on Future Energy Systems, which is organized annually since 2010. Due to the increasing significance of power consumption in computing and networking, the goal of e-Energy is to bring together researchers, developers and practitioners working in this area to discuss recent and innovative results, as well as identify future directions and challenges. The continuing spread of Information and Communication Technology (ICT) has contributed much to the reduction of energy consumption in many areas of everyday life. Nevertheless ICT infrastructure continues to expand in capacity and reach, and needs to be more energy-efficient itself. Additionally, ICT can be used to optimize the production, transport and consumption of energy in other setups.

4.3 Publication procedure

The publication procedure was first presented in (NOBEL Consortium).

In order to coordinate the participation of partners in dissemination activities and conferences (both in Europe and outside Europe) and properly notify the Commission of any event, the following criteria apply for the consideration for such activities:

- It is essential that adequate time for considering the publication or participation in an event is given. Therefore, the notification may be circulated as soon as possible and no less than 30 days in advance of the event. The notification may be submitted to the coordinator making use of the spreadsheet available at the repository. It is advised to upload relevant CFPs as soon as possible in the repository \WP8\CFP in a Year-Month-Day_Event format (where the first part indicates the deadline for papers submission).
- The application may include, if possible, a copy of the conference program together with a rationale describing the conference and explaining the proposed role of BEAMS –i.e. networking, presentation of results, poster session, etc.
- Any partner in the consortium can publish its own results without previous permission, it only needs to notify the dissemination manager and fulfil the EC requirements hereafter identified. It is however preferred that common publications arise as result of cooperation among the partners.
- Unless the Commission requests otherwise, any notice or publication by the contractors about the project, including at a conference or seminar, must specify that the project has received research funding from the Community's Seventh Framework Programme and may display the European Commission / FP7 emblem When displayed in association with a logo, the European emblem should be given appropriate prominence (contract article II.12 (EC, 2009)). A pre-print or an abstract of the paper should be sent to the coordinator with the application.
- Any notice or publication by the contractors, in whatever form and on or by whatever medium, must specify that it reflects only the author's view and that the Community is not liable for any use that may be made of the information contained therein (contract article II.12 (EC, 2009)).).
- If a result is shared by several partners, the publication needs the approval of all the partners involved. The notification submitted to the PC will have to be circulated to all the partners involved. If there is no response, approval is granted.
- Participants may provide to the coordinator, a copy of the concise written report produced for the project within two weeks of the event.
- The attendee may provide, where possible, a copy of the Conference proceedings or a suitable extract to the coordinator.
- The provisions of the Contract and the Consortium Agreement should be taken into account in dissemination of results of the project.
- A quote like the following one should be included in any dissemination document produced by a partner:

  The authors would like to thank for their support the partners of the European Commission co-funded FP7 project BEAMS (www.ict-beams.eu).

- The cost and frequency of the conference attendance should always be minimised and kept in proportion to the size and resources of the Project.
- Conferences out of the EU territory require previous approval of the EC.

4.4 Anticipated Outputs

During the lifetime of the project, many dissemination activities will be carried out. Up-to-date project related information will be maintained at and disseminated via the BEAMS project web site. The dissemination activities will extend over the 30 months duration of the project. During the first year period, activities mainly will focus on building awareness of the project. The second phase of the activities will target publications in several scientific magazines and conferences. In the final phase of the project, more scientific dissemination activities will be carried out in conferences, magazines and journal publications.

The project will target a number of scientific publications each year as illustrated in the following table to relevant conferences and journals.

	Year 1	Year 2	Year 3
Conferences/Workshops	4	8	6
Journals/Magazines	-	1	2

Table 4 – Anticipated outputs of BEAMS scientific dissemination.

The above figures in Table 4 gives approximations of what the consortium will try to achieve. The numbers (18 Conferences/Workshops, 03 Journals and Magazines) are an estimation of what might be achieved by the end of the project.

5 Interest Group

The creation of the Interest Group pursues to co-ordinate, organize and manage all activities which interact with, or concern, the different stakeholders that have shown their interest in this project. The specific objective is to foster networking activities among project's Interest Group members, so that mutual understanding and knowledge is achieved, allowing the identification and exploitation of commonalities.

The IG will be formed by aggregation. All partners in the consortium are aware on experts and organizations that can be interested in the results of BEAMS, so they will provide their contacts to create an initial Group of Interest. The IG database will include at least the following information about the members:

- Name of contact.
- Organisation.
- Address, telephone, e-mail etc.
- Their special areas of interest in the BEAMS project.

The networking activities within the IG will include:

- Delivering public deliverables of the BEAMS project.
- Delivering other relevant public material.
- Asking for comments from the IG members concerning public deliverables and other delivered materials.
- Asking for comments from the IG members regarding their special interest areas in BEAMS.
- Providing short notes to the IG about the progress of the project and asking to identify matters to be considered.
- Arranging workshops.

Last but not least it is noteworthy to mention that the IG is an open platform aimed at maximizing the involvement and contribution of the widest possible community of

potential users of the project results. To that end, the web-site counts with a registration form that makes easy the capitation of new members. In addition, the private area presented in section 3.2.2 will be, jointly with the newsletter and multimedia material, the main channel of communication with IG members. The area will contain all the sections and contents restricted to BEAMS IG:

- IG News: with the most recent events related to the BEAMS project and its evolution
- Scientific papers and posters: additional information related to the project.
- Workshops: invitations, agendas, minutes and any kind of details of the different workshops organized.
- Questionnaire: used to gather the feedback of members during the workshops.

5.1 BEAMS Project Workshops

Three are the BEAMS public workshops planned:

- The first workshop will be dedicated to an introduction to the BEAMS approach and the planned future work. This will facilitate the initial dissemination of information about the project.
- The second workshop will focus on running BEAMS intermediate results, collecting experiences and input from local and national relevant actors.
- Finally at the end of the project a third workshop dedicated to the presentation of BEAMS prototypes is planned. This last workshop will be hosted in Barcelona, at the BEAMS main Pilot Site. During this last event information on users acceptance will be collected and general indications of the exploitation perspectives will be given.

The structure for the workshops will make them flexible according to the objectives and issues to be addressed. In order to maximise the awareness of the workshops (and therefore the audience) they will be organised in coincidence with other relevant conferences when possible.

As there could be different working lines in BEAMS the structure of the workshop could follow a schema similar to the proposed in the figure below:

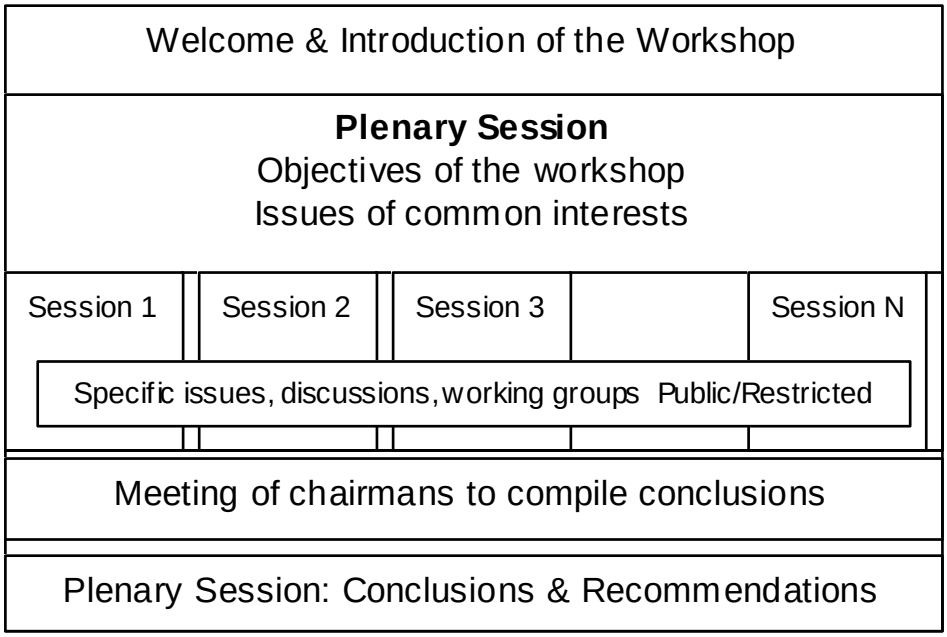

Figure 5 – Workshop overview

In addition to the conclusions and recommendations provided at the end of the workshops, a detailed updated on the web-site will be issued one month after the event. The workshops will not be restricted to the IG members –only those sessions considered as restricted will- but open to the general target audience to get also its feedback.

The selection of the concrete conferences that could co-host the second BEAMS workshop can not be done at this moment; however the venue for the first and third workshop has already been settled. As stated above, the final workshop will be hosted in Barcelona in order to be able to run a full scale demonstration.

On the other hand, the first workshop is being organised at the European sustainable Week (EUSEW 2012, 18-22 Brussels). BEAMS is co-hosting with the MOLECULES project a workshop in the scope of the Smart Energy Cities. Members of the BEAMS project are in the Program Committee of the workshop. This will be the first event where BEAMS will be able to exchange experiences and ideas with several other European projects such as NOBEL, Skynet or SmartCEM.

5.2 Initial Interest Group

A number of key organisations have expressed their explicit commitment to the consortium and their support in achieving the demonstration objectives. These organisations are:

- **Football Club Barcelona** is one of the biggest sports clubs of the world. The FCB comprises 15 different teams from 12 different sports and has more than 173.000 official members all around the world. Being as big the FCB manages a big number of heterogeneous facilities and installations. SODEXO is the company which manages the FCB facilities for the club and the formal partner of BEAMS; however the FCB itself is also supporting the project.
- **The City of Barcelona** is located in the north-east coast of Spain and is the second largest city in the country, after Madrid with a population of over 4,200,000. Barcelona is recognised as a Global City due to its importance in finance, commerce, media, entertainment, arts, international trade, education and tourism and it is the sixth most populous urban area in the European Union after Paris, London, Ruhr area, Madrid and Milan. With its support to BEAMS the city expresses its commitment to energy efficiency and the reduction of CO2 emmissions.
- **Endesa**, the leading utility in the Spanish electricity system and the number one private electricity company in Latin America. It is a significant player in the energy sector of the European Mediterranean region. It also has a growing presence in the Spanish natural gas market and is advancing rapidly in the area of renewable energy. Endesa is the current service provider of the FCB Camp Nou stadium.
- **Agencia de Energía de Barcelona**. It is formed by the various Administrations that are directly involved in energy and environmental management within its scope of action: the Barcelona Council, the Metropolitan Body for Hydraulic Services and Waste Treatment, the regional Institute for Energy and the Institute for Energy Diversification and Savings. The Agency's origin lies in the European Union energy policies as established in the Green Paper and the White Paper on Energy, which recognize the value of energy efficiency and of renewable energies in the achievement of the objectives of sustainable development. Accordingly, the Agency works to endow the city with optimum standards of use and management of local energy resources through consensus and participation, and to promote a rational sustainable energy demand that is marked by its quality.
- **Live (Logistics for Implementation of Electric Vehicles)** is a public-private platform that was conceived with the aim of giving support to and promoting the

development of electric mobility in the city and metropolitan area of Barcelona. The development partners (executive members) of this project are Barcelona City Council, via the areas of Environment, Mobility and Economic Promotion; the Government of Catalonia, via the Catalan Energy Institute; and the companies ENDESA and SEAT.

- **Public Power Corporation S.A (PPC S.A.)** is the largest power generation company in Greece and the country's sole power supply company, providing electricity to approximately 7.4 million customers. PPC is also the sole company with a fully owned power transmission system in Greece. PPC was established in 1950 with the aim to map out and implement a national energy policy and now a days owns 93% of the installed power capacity in Greece, generated by lignite, fuel oil, hydroelectric and natural gas power plants, as well as by aeolic and solar energy parks.
- **Adiconsum** is one of the most important Italian end-user/consumer associations. Adiconsum is a consumer organization with over 122,000 members founded in. It works to protect consumers in and independent manner. It is present in all Italian regions with 283 offices for the users information and advice in all the major cities of the country. It is important to consider that Adiconsum is the coordinator of ENFORCE project, the first European network of independent energy auditors (to assist consumers and provide solutio for energy saving interventions in buildings). Aidiconsum also participate in the project ECCC (European Citizens Climate Cup), a "competition" of private households within and between EU countries, to demonstrate how to save energy and reach CO2 reductions targets.
- **Transelectrica S.A** is the Romanian Transmission and System Operator (TSO) which plays a key role in the Romanian electricity market. Transelectrica manages and operates the electricity transmission system and provides the electricity exchanges between the central and eastern European countries as an ENTSO-E member (European Network of Transmission and System Operators for Electricity). Transelectrica is responsible for electricity transmission, system and market operation, grid and market infrastructure development ensuring the security of the Romanian power system. It also serves as the main link between electricity supply and demand, matching all the times power generation with demand.
- **The Distretto Regionale dell'Edilizia Sostenibile (Regional District of Sustainable green building)** is a public agency that favor green economy along permitting to realize quicker investments without bureaucratic entanglements explain these important results. The region of Apulia, thanks to all the efforts made in the last few years, is considered by the top economic analysts the most attractive region to investors. It is projected that in the future, approximately € 1.5 billion will be invested in Apulia’s green economy. The District collaborates with more than 150 entities such as construction companies, producers of biological materials and institutes for scientific research. The District is working to promote a wide market of sustainable constructions in Apulia. It defines sustainable construction of buildings or infrastructure in accordance with the principle of respect for the environment in which they are located and tend to a greater degree of comfort for people who use it. Therefore, the purpose of the district is now admitted "making buildings sustainable building and make the quality and comfort of the built environment recognizable to the market." A goal to be pursued through research and technology transfer, innovation and integration projects of sectors, development projects, implementation of a system of internal guidelines, and methods of process control, personnel training, research programs, etc.

- **Elettrostudio** is a company that offers the sale of producing electric energy from wind, hydro, biomass and photovoltaic. The company currently has won a tender for the installation of photovoltaic canopies for parking at the University Campus of the University of Salento. The company specializes in the design and implementation of renewable energy installations.

5.3 Links to other initiatives and EU projects

The creation of a cluster of FP7 projects working in the same area as BEAMS is not a goal that the project can achieve by its own. However, it is definitely the final goal of the networking activities, since such cluster could be the main tool to disseminate the project results out of Europe and act as a representative body in standardisation organisations.

The dissemination plans with regards to such goal and networking with other initiatives in general, is based in the co-organisation of conferences and events with other EU research groups. First step has been to identify possible complementarities among the following projects:

- BeyWatch (BeyWatch) is an FP7 project aiming to develop an energy-aware and user-centric solution, able to provide intelligent energy monitoring/control and power demand balancing at home/building & neighbourhood level. This is done by providing low energy consumption white-goofs and intelligent management. BEAMS will complement it by focusing on the management of large infrastructures and service oriented.
- AIM (AIM) (A novel architecture for modelling, vitalising and managing the energy consumption of household appliances) is a FP7 project with the objective to foster a harmonised technology for profiling and managing the energy consumption of appliances at home. AIM research focus is different to the one addressed by BEAMS –i.e. domestic appliances. Nevertheless, particularly relevant to BEAMS are the use cases defined for residential users, for power distribution network operators and for network operators.
- NOBEL (NOBEL consortium) (Neighbourhood Oriented Brokerage Electricity and monitoring system) is an FP7 project led by ETRA which is building an energy brokerage system with which individual energy consumers will be able to communicate their energy needs directly with both large-scale and small-scale energy producers. The cooperation with this project is granted by the fact that both BEAMS and NOBEL would share the same coordinator. From a technical point of view, the results of NOBEL could serve to complement the pilots in BEAMS – as a third party accessing the open gateway-, and the results of BEAMS could help NOBEL enhance its vision on senior prosumers –i.e. large infrastructures that can produce and consume energy.
- AmI-MoSES (AMI-MOSES) (Ambient-Intelligent Interactive Monitoring System for Energy use Optimisation in Manufacturing SMEs) is a FP7 project that aims to produce a leap forward in energy efficiency by introducing Ambient Intelligence (AmI) aspects into the classical energy consumption monitoring in manufacturing SMEs. The project is relevant to BEAMS as far as is one of the only ones addressing industrial consumers.
- Be Aware (BeAware) (Boosting Energy Awareness) is a joint European research project (FP7) investigating how next-generation ICT can be designed to reduce energy use in the home, empowering people to take control of their energy consumption. As AIM, this project is complementary to the research addressed by BEAMS, focused on the monitoring of energy from public buildings and introducing the analysis of the electricity used by industrial prosumers.

- IntUBE (Intelligent Use of Buildings' Energy Information, 2009) (Intelligent Use of Buildings' Energy Information) is a joint research project (FP7) that aims at providing efficient solutions for better use and management of energy use within buildings over their lifecycles. IntUBE and BEAMS are complementary projects that can benefit from each other's results since inTube also tackles the use of more efficient Building Management Systems to save energy, and BEAMS deals with the same approach but focusing on singular buildings and group of facilities. Both projects are concerned with the use of open technologies that could lead to an easier adoption of their solution.
- The SmartHouse/SmartGrid (SmartHouse/SmartGrid) is an FP7 project targeting mainly the home energy consumption area and its collaboration with the smart grid, in order to achieve maximum overall energy efficiency; focus is put on simulation and real-customer trials. BEAMS will complement this by targeting large infrastructures or group of buildings. IWES and ICCS participate in the SmartHouse/SmartGrid project which will lead to optimal transfer of results among the two activities.
- The REEB project (REEB) targets ICT supporting energy efficiency strategies in the building sector. REEB is a CSA project that aims at bringing together the ICT community, key players in the construction environment and energy business sectors. REEB focus on the construction activities. Especially relevant for BEAMS are its published collection of best practises.
- EnergyWarden (EnergyWarden) is a FP7 project, aiming at the development of tools for the management and control of renewable technology, deployed in the building domain. The project is of special interest for BEAMS due to its main focus on RES. In particular, its simulator to suggest optimal configurations of Renewable Energy Technology (RET) deployment will be analyzed. BEAMS will not only tackle the simulation of RETs, but also the impact on the global operations in a building.
- ENERgy Saving Information Platform for generation and consumption networks (ENERSip) (ENERsip) is also an FP7 project which main objective is to create an adaptive, customizable and service-oriented energy monitoring and control system by active and proactively coordinating energy, communications, control, computing and construction for near real-time generation and consumption matching in residential, commercial buildings and neighbourhoods. As NOBEL, it is a project more focused on households and neighbourhood, not covering with the same detail the spaces of public use targeted in BEAMS. The common points are similar to the ones detected in NOBEL, and the cooperation with BEAMS could be articulated through the coordinator o ENERSip, ESI-Tecnalia, a Spanish research Institute which whom ETRA maintains an active collaboration in different national projects.
- The objective of EnPROVE (EnPROVE) is to develop a software model for predicting the energy consumption of a specific building, with different scenarios implementing energy-efficient technologies and control solutions, based on actual measured performance and usage data of the building itself. There is a common approach to provide operators with tools to assess the impact of different technologies. The project is more oriented to the design phase of the building – or renovation works - , whereas BEAMS targets how to complement already existing facilities with ICT enabling a better energy efficiency.
- Friendly Intelligent Energy Management System for Existing Residential Buildings (FIEMSER) (FIEMSER) is a project that focuses on "Use less energy" and "Make more energy locally" and that provides the necessary conditions and platform for future developments to sell surplus energy. The main objective of this project is

the development of an innovative energy management system for existing and new residential buildings. The targeted type of buildings in BEAMS is completely different – singular buildings and spaces of public use. However, both projects tackle the use of RES as a way to make greener the energy used at buildings, and particular relevant for BEAMS would be the Intelligent Control System developed in FIEMSER. Once again the cooperation could be articulate through the coordinator of the project, ESI-Tecnalia.

- Positive Energy Buildings thru Better controL dEcisions (PEBBLE) (PEBBLE) is an FP7 Project that proposes the use of a control and optimization ICT methodology that combines model-based predictive control and cognitive-based adaptive optimization to maximize the actual net energy produced by intelligently shaping demand to perform generation-consumption matching. The models proposed by PEBBLE could be used as input of the Smart Control algorithm to be developed within BEAMS.
- Roadmap Enabling Vision and Strategy for ICT-enabled Energy Efficiency (REViSITE) (REViSITE) is a coordinated action that brings together experts and stakeholders in ICT4EE to develop a shared vision of the ICT research agenda for the next decade. BEAMS consortium plans to become an active contributor to this agenda, offering an open tool to grant interoperability of systems.
- Energy Efficiency and Risk Management in Public Buildings (ENRIMA) (ENRIMA) is a recent FP7 project (October 2010) with the objective of developing a decision-support system for operators of energy-efficient buildings and spaces of public use. The main focus is on management of conflicting goals such as energy efficiency and risk management. BEAMS is more oriented towards the management of the energy processes and assets through the balance scorecard. Possible connection to ENRIMA would come from the common features proposed to the human operator and the common approach to integrate already existing subsystems. BEAMS extends ENRIMA by proposing an open gateway as tool to interact with external applications. Since both projects would be running in parallel, networking activities to exploit synergies could be study.
- Built Environment Sustainability and Technology in Energy (BEST) project implements and validates several pilot actions in several European public buildings and public spaces with the aim of substantially improving the energy efficiency in those buildings and places by the use of market ready ICT solutions. It does not cover the interoperability with the external world as BEAMS does, but it is particular relevant since it proposes as one of the pilots the study of a sport centre – the Anoeta stadium.
- Intelligent Energy Efficiency Control in Hospitals (HOSPILOT) (HOSPILOT) project will support the decision makers with an ICT based service that will drastically reduce the energy consumption of newly built hospitals and existing hospitals being refurbished, increasing well being and comfort. This project has as common point to BEAMS the targeting of singular buildings, however, it exclusively focus in HVAC and lighting, while BEAMS also tackle the integration of greener components as RES and Electrical vehicles.
- 3EHouses (3e-HOUSES), eSESH (eSESH) and E3SoHo (E3SoHo) are projects that deal with the integration of established ICT technologies in social housing in order to provide services for energy efficiency. These projects are relevant to BEAMS as far as they also study the impact of RES in building management. However, the domain of application is different to the one proposed by BEAMS, since BEAMS is oriented to professional facilities operators.
- SAVE ENERGY is an European Project (SAVE ENERGY) that address the use of ICT (serious game and real time information) as an enabler of energy efficiency in

five Public building in five European cities The project is relevant to BEAMS since it also addresses the energy efficiency problem in public building. The main difference can be found in the different approaches proposed: BEAMS does not rely on the large deployment of new technology but on complementing the existing ones with new tools and algorithms.

- Led-based intelligent street lighting for energy saving (LITES) (LITES) project delivers an intelligent public street lighting service using solid-state lights LED in order to reduce energy consumption. The project is relevant since the use of LED technology is a clear opportunity to reduce energy consumption, and therefore it has to be considered in spaces of public use. Once again, the main difference is that BEAMS does not rely on the deployment of new materials. However, the impact on efficiency of LITES could clearly benefit BEAMS approach when applied to new deployments.

6 Public Exploitation Guidelines

A detailed Exploitation Plan will be defined at the end of the project (D8.3, confidential) with the objective of describing the Consortium and partners strategy for exploiting project outputs. The Plan will be completed with the commercial agreements (D8.4, confidential) between partners for joint exploitation and technology transfer, and will:

- Exactly identify the services/products or product components that can be derived from the project results as well as their positioning within the partners' product offering.
- Better position the services/product or product components that can be derived from the project based on a survey of the market, an evaluation of main competitors and a study of worldwide best practices.

Business plans and IPR models to allow effective exploitation of project results will be developed. Nevertheless, general and public guidelines on how the consortium plans to exploit the project results are presented already in this document.

In detail, the activities for those results that are of commercial interest to the consortium partners will be:

- Update/development of market surveys.
- Analysis of competitors (in Europe) and of best practices outside of Europe.
- Consortium and individual Partner Exploitation Plans.
- Selection of the business models for technology and services.

In this section preliminary exploitation plans are presented, based on the market study performed and the interest of each partners, which goes beyond the objectives of the project.

6.1 BEAMS exploitation strategy

The BEAMS exploitation strategy will be based in paving the way to the marketing of BEAMS products beyond the project's duration.

Exploitation of BEAMS results will be ensured by the setup of concrete exploitation plans by the different partners in the consortium. A preliminary list of potential products and exploitation plans can be found in the next section.

To impulse the adoption of BEAMS solution and therefore the exploitation of results after the finalisation of the project, it will be important to contribute, as much as budgetary possible, to the relevant standards bodies granting that the BEAMS results are considered as an example of good practise.

In the same context, networking with other initiatives and EU projects – section 5.3 – will help creating a research cluster that could extend its work pushing European solutions at a worldwide level, improving in this way the exploitation potential of BEAMS results.

From the point of view of the possible contributions to standards, the strategy is to exploit the presence of BEAMS partner in relevant bodies, since it would not be possible with the time framework and budget of the project to gain a representative position in well-established standardisation bodies. In this way:

By means of two of the main research topics addressed by the project – the **reference architecture and the open gateway** – BEAMs will help the establishment of an open alliance that will promote the use and adoption of open standards.

The approach proposed by the project consists not only in the definition of a common architecture but also in the inclusion of a new element granting the separation of roles, which will also help the inclusion of new players and the opening of the energy market.

The interoperability framework proposed by the project will be based on the Open Gateway Energy Management Alliance (OGEMA). The initiative is born from the experience on previous national and EU projects by IWES and already provides a reference implementation for devices and information typically found in private households. The full reference implementation is public at (htt6). **BEAMS plans to affect directly this open standard by means of its main promoter, who is part of the consortium**.

Considering, the above mentioned opportunity, as well as the networking activities where the consortium is and will be active, the best strategy to exploit the project results with be to focus in the ICT components that BEAMS could provide to the main stakeholders in order to offer a scalable way to improve their already existing energy efficiency solutions, instead of trying to market a completely new alternative for a building management system. The strength of the consortium in the standardisation bodies is mainly on the open gateway. Thus, it will be good to increase the effort in creating a good cluster with other EU projects willing to present a common approach to the target audience.

6.2 Exploitable results and plans

The preliminary list of exploitable results and individual partner plans was already presented in (NOBEL Consortium, 2009). The definitive plans will be ready in D8.3 once the project is completed. In the meantime, the consortium already identified some of the potential products, as well as the individual exploitation plans of each partner.

#	Project exploitable result	Responsible partner(s)	Type	Estimated Time to market (months after end of project)
1	A highly configurable open gateway based on OGEMA to interact with ICT solutions from different vendors	IWES	Consultancy service	6
2	Innovative smart control algorithms with learning capabilities	ETRA	Software product to be licensed	12
3	A Decision Support and Simulation module	ETRA	Software product to	6

			be licensed	
4	Energy Efficiency Balanced Score Card	ETRA	Consultancy service	3
5	Electrical and economical model and simulator of a parking with EVs, including an electrical model and simulator of the batteries behaviour	BDIGITAL	Consultancy service	3
6	Algorithm for forecasting the energy demand of a parking lot with EVs	BDIGITAL	Software product to be licensed	8
7	Architecture and Interfaces Specifications and Data Models	THALES	Consultancy service	3
8	Evaluation, guidelines and HowTo	ICCS	Report	3

Table 5 – Preliminary exploitation Plans

ETRA

ETRA's annual turnover and number of employees have increased uninterruptedly over the last 20 years to reach the current 250M€ and 2.200 staff –figures corresponding to 2010-. User-orientation combined with advanced technologies and innovative business models have been the drivers behind this sustained growth.

ETRA's areas of activity are centered on Mobility, Energy, Public Services and Security. Over the last years Energy has evolved into a Business Area (BA) which not only has developed vertically but also horizontally, cutting across the rest of the BA,s.

ETRA's customers are typically public authorities and large companies who use our large scale realtime control systems and information management services to run complex infrastructures which require huge amounts of energy to operate, generate substantial CO2 emissions and have a direct impact on people's safety and quality of life

Energy BA currently amounts for a substantial 27% of the company current turnover. However the current strategic master plan of the company foresees that energy will get even further at the core of the technical and business interests of ETRA, with a planned annual turnover of approximately 75M€, expected to grow by a 15% per year over the next 5 years. **BEAMS is expected to have a direct impact on this huge business area of the company, affecting to an estimated 500M€+ turnover and 40+ installations.**

THALIT

Two possible Project exploitable results for THALIT are:

1) Exploit the smart grid interoperability specifications from BEAMS in future smart grid projects and commercial pilots.

2) Include industrialized system components derived from BEAMS in commercial proposals for large infrastructure supervision and operation

The results of BEAMS project will be widely used in Thales Italia activities. Thales Italia addresses worldwide civil infrastructure and security markets and main sectors of interest are the operation and protection of airports, energy infrastructures, transportation and urban security. In all of these areas we provide complex solutions integrating sensors, building automation systems, TLC networks, management and control supervision platforms, and other dedicated applications. A wide range of heterogeneous actors (operators, utilities, authorities, end-users) are generally involved in the exploitation of these solutions. The results of BEAMS project can improve, in particular, the energy efficiency of solutions we provide to our customers in the various business domains. Thales Italia acts very often as system integrator, using third parties equipment and systems, and will exploit also in this case the

additional references, patterns, competences and culture derived from BEAMS. Thales will not only improve its own offer and capabilities, but will also make grow competences and opportunities for its network of business partners and customers.

BARCELONA DIGITAL

The first project exploitable result is a simulator of a parking lot with EVs. The developed software will take into account different battery models, different charging and discharging patterns, the timetable of energy prices, the number of vehicles in different situations, the arrival and departure times of these vehicles, etc. This result can be commercialized among clients of the FAME/OGEMA system considering an investment in charging points to be deployed nearby the facility. A consultancy service provided either by ETRA or a similar company together with BDIGITAL, will help the client decide whether or not the investment is sound. On the other hand, the availability of this service will promote that many facility managers will consider the possibility of deploying charging points nearby the facility thus helping the adoption of the EV in the city and saving more energy.

The second project exploitable result is an algorithm capable of forecasting the energy demand of a parking lot with EVs. The output of this algorithm is required by the FAME/OGEMA system in order to do the job and optimize the overall behaviour of the BEAMS. Therefore, this algorithm will result in a software component that will be licensed to ETRA in the framework of this project since it is a fundamental part of the FAME/OGEMA system. The same result could also be licensed, directly by BDIGITAL or through the BEAMS system, to BMS providers such as Schneider [37], Siemens [38], Honeywell [39], Cisco [40] or Phillips [41]. This algorithm will contribute to the performance of BEAMS and as a consequence to reduce the energy consumption of any facility managed with BEAMS.

NATIONAL TECHNICAL UNIVERSITY OF ATHENS

ICCS/NTUA's mission is to develop high-level knowledge and technology for a sustainable energy system. Furthermore, ICCS actively seeks ways to introduce its technology in the market and aims to offer high-skilled consultancy in all the aspects related with the topics mentioned above, namely by performing feasibility studies regarding the formation, operation and control of Buildings. The main continuation of the project from ICCS will consist on:

- Providing training opportunities in the area for students researchers and utilities' technicians from EU and associated countries, developing countries.
- Supporting the future developments in BMS systems, in the framework of the partnership with the European Industry.

FRAUNHOFER IWES ADVANCING ENERGY SYSTEMS

With respect to BEAMS results, Fraunhofer IWES can further extend the functions of the energy management platform (OGEMA) and thus increase its range of operation. New applications for energy efficiency, home automation and interfaces to smart meters are to be created that further establish the OGEMA platform as an open standard.

Based on information and communication technologies the OGEMA platform offers a platform for the development and introduction to market of products enhancing energy efficiency and energy management in the electricity distribution grid. This development will provide the possibility to increase the share of renewable energy in distribution grids from ecological as well as economical point of view.

With respect to data obtained from the field tests, the users' behaviours and users' acceptance of this management will provide useful information for the further development of energy management.

As research institute Fraunhofer IWES itself will not turn the developments into a product offered by Fraunhofer on the market. With a large number of joint research projects and collaboration with related industrial companies it will help to make use of the technology in various applications and products.

As part of the IWES exploitation activities the project results will also be presented at scientific conferences and journals. Project results will also be used for contributions of IWES to national and international standardization activities IWES participates in, mostly with IEC, CENELEC and the German body DKE.

SODEXHO ALLIANCE

The company mission is to contribute to the economic, social and environmental sustainability of the regions where Sodexo operates its customer's facilities. Sodexo is the recognized sustainability leader in the facility management market and therefore this project is perfectly aligned with the company strategy and with our "Better Tomorrow Plan", a worldwide sustainability roadmap covering 80 countries, 33,900 sites and engaging 380,000 employees.

The knowledge obtained through the participation in the BEAMS project will become part of "The Better Tomorrow Plan" and Sodexo will take profit of any useful ideas that will be incorporated to its roadmap.

Also regarding the business plan of the company, long-term trends offer significant opportunities in emerging On-site Service Solutions as for example:

- Sustainable Development: companies are increasingly focused on their sustainability responsibilities and seek partners capable of supporting their commitment.
- Energy: faced with rising energy costs, clients are looking for innovative economical solutions from designing buildings systems to the use of energy efficient materials and processes.

The R&D activities performed under the BEAMS project together with our experience as facility managers will allow the BEAMS consortium to design, test and validate a revolutionary new solution which, after the required industrialization process, will be globally adopted by Sodexo. Thanks to this new and revolutionary solution Sodexo will:

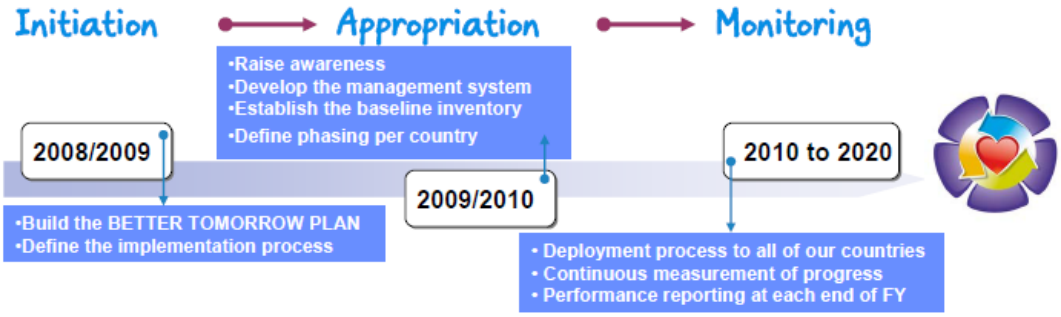

Figure 6 – SODEXO "Better Tomorrow Plan" detailed

Also regarding the business plan of the company, long-term trends offer significant opportunities in emerging On-site Service Solutions as for example:

Sustainable Development: companies are increasingly focused on their sustainability responsibilities and seek partners capable of supporting their commitment.

Energy: faced with rising energy costs, clients are looking for innovative economical solutions from designing buildings systems to the use of energy efficient materials and processes.

The R&D activities performed under the BEAMS project together with our experience as facility managers will allow the BEAMS consortium to design, test and validate a revolutionary new solution which, after the required industrialization process, will be globally adopted by Sodexo. Thanks to this new and revolutionary solution Sodexo will:

- Reduce its operating costs and energy consumption on the sites.
- Deliver a better service to its customers lowering their energy bills when they pay.
- Position the company even more as a sustainability leader.

Finally, the presence of Sodexo in the consortium guaranties a worldwide adoption of the results thus maximizing its impact.

UNIVERSITÀ DEL SALENTO

As one of the major goals of the project is the demonstration of the cost effective potential for improving the energy performance of buildings, dissemination plays an essential role.

An integrated series of summary leaflets, newsletters, conference posters and journal articles, designed and implemented in printed or electronic form and distributed directly to targeted mailing lists and selected journal editors or via the Web site, as appropriate, will be done. Online material for presentations during the training sessions, conferences and media/press presentations will be developed and offered via the website. All partners within the BEAMS will participate in national and international conferences, meetings and other events to promote the project through their attendance, presentations etc. BEAMS will disseminate its results during the last year of the project at a number of EU and national conferences in order to reach a wide national and international public audience. PowerPoint presentations will help to explain the activities, the products and the approach of the project for local applications and conferences.

The ultimate goal of the dissemination of information within the framework should lead to a greater number of ecobuildings in Europe, and a greater number of sustainable technology implementations leading to lower energy consumption and environmental impacts.

To reach this goal, information on building technology choices and building performance is to be communicated to different target groups that influence the built environment in Europe, from building owners, designers, constructors to building users and students.

The dissemination of information about the different technologies that can be used in buildings to reduce energy and water consumption whilst creating comfortable environments is important because building designers and owners can only include technologies and techniques that they know about. Creating more options for building cost effective ecological buildings, by informing those who are in a position to decide on construction techniques and technologies, is essential.

However, informing decision makers about building technologies is not generally sufficient; it is important to be able to demonstrate that the technologies work as announced, that their implementation will be neither complicated nor ruinous. It is necessary to be able show that unfamiliar technologies are both reliable and cost effective, this is possible by showing the new University ecobuildings.

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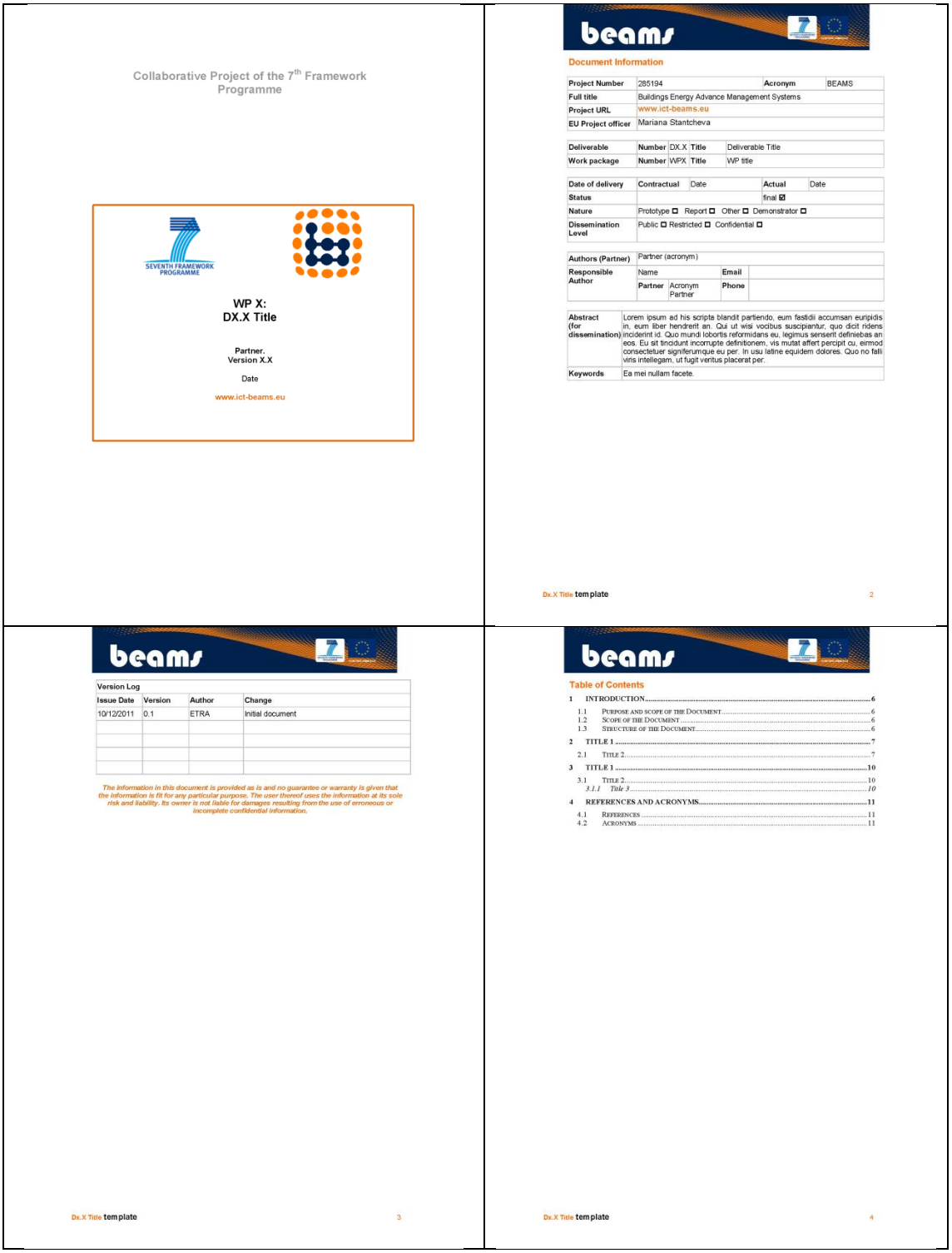
7.2 Acronyms

Acronyms List	
CMS	Content Manager System
DoW	Description of Work
ESCO	Energy Service Company
EV	Electrical Vehicles
FAME	FAcility Management Environment
HVAC	Heating, Ventilating, and Air Conditioning
IG	Interest Group
IPR	Intellectual Property Rights
M&C	Monitoring and Control
PPP	Public-Private Partnership
RES	Renewable Sources
SLA	Service Level Agreements

Annex A – Templates

Deliverable, documents



Collaborative Project of the 7th Framework Programme

WP X:
DX.X Title

Partner.
Version X.X

Date

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Document Information

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Authors (Partner)	Partner (acronym)				
Responsible Author	Name			Email	
	Partner	Acronym Partner		Phone	
Abstract (for dissemination)	Lorem ipsum ad his scripta blandit partiendo, eum fastidii accumsan euripidis in, eum liber hendrerit an. Qui ut wisi vocibus suscipiantur, quo dicit ridens inciderint id. Quo mundi lobortis reformidans eu, legimus senserit definiebas an eos. Eu sit tincidunt incorrupte definitionem, vis mutat affert percipit cu, eirmod consectetuer signiferumque eu per. In usu latine equidem dolores. Quo no falli viris intellegam, ut fugit veritus placerat per.				
Keywords	Ea mei nullam facete.				

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Version Log

Issue Date	Version	Author	Change
10/12/2011	0.1	ETRA	Initial document

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1 Introduction

1.1 Purpose and scope of the Document

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1.2 Scope of the Document

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1.3 Structure of the Document

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2 Title 1

2.1 Title 2

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Figure 1 – BEAMS approach

Objective	Achieved within WP	Measurable indicator
Specification of **requirements, use-cases and architectures** relevant to scenarios of energy efficient management.	WP1 and WP2	D1.1 D1.2 D2.1.x
Definition of common ontology, information models and interfaces to facilitate industry deployment and adoption by end-users.	WP2	D2.2.x
Inclusion of new **Greening Energy Positive Tools** as Renewable Sources (RES) and Electrical Vehicles (EV).	WP3	D3.1 D3.2 D3.3
Development and publication of a highly configurable open **gateway** to interact with ICT solutions from different vendors.	WP4	D4.1.x D4.2
Design and Implementation of a FAcility Management Environment.	WP5	D5.1.x

Table 1 – Objectives vs. WPs

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3 Title 1

3.1 Title 2

3.1.1 Title 3

3.1.1.1 Title 4

4 References and Acronyms

4.1 References

1. **EC.** EC Research. [Online] [Cited: 30 11 2010.] http://ec.europa.eu/research/index.cfm?lg=en&pg=newsalert&year=2009&na=ppp-310309.

2. **BEAMS Consortium.** *D8.1 Dissemination Master Plan.* Valencia, Spain : s.n., 2011.

3. **EC.** *Annex II General Conditions.* Brussels : v5, 2009.

4.2 Acronyms

Acronyms List	
CP	Consortium Plenary
DM	Dissemination Manager
DoW	Description of Work
EM	Exploitation Manager
ESCO	Energy Service Company
EV	Electrical Vehicles
FAME	FAcility Management Environment
HVAC	Heating, Ventilating, and Air Conditioning
IPR	Intellectual Property Rights
M&C	Monitoring and Control
PC	Project Coordinator
PPP	Public-Private Partnership
PPR	Project Periodic Report
PSC	Project Steering Committee
QM	Quality Management
QoS	Quality of Service
QR	Quarterly Report
RES	Renewable Sources
RM	Risk Management
SLA	Service Level Agreements
SVN	Subversion
TM	Technological Manager
WL	Work package Leaders

Peer Review

Buildings Energy Advance Management Systems

Title:					Document Version:
Peer Review Report to D9.1					0.1

Project Number:	Project Acronym:	Project Title:			
P7-2011-NMP-ENV-ENERGY-ICT-EeB-285194	BEAMS	Buildings Energy Advance Management Systems			

Contractual Delivery Date:	Actual Delivery Date:	Deliverable Type*-Security*:
MX (Month Year)	MY (Month Year)	R-CO

*Type: P: Prototype; R: Report; D: Demonstrator; O: Other.

**Security Class: PU: Public; PP: Restricted to other programme participants (including the Commission); RE: Restricted to a group defined by the consortium (including the Commission); CO: Confidential, only for members of the consortium (including the Commission).

Responsible:	Organisation:	Contributing WP:
Author	partner	WPn

Authors (organisation):
Name of person performing review (Name of partner performing review)

Abstract:
The peer review report validates the quality and consistency of BEAMS deliverables. It has to be completed by both the peer review team and the deliverable responsible partner.

Keywords:
Peer review.

Revision History

Revision	Date	Description	Author (Organisation)
VX.Y	DD.MM.YYYY	New document	Name of person performing review (Name of partner performing review)

Please complete both Part 1 and Part 2. The deliverable author(s) will complete Part 3. Note: To facilitate the authors' response, please number each point separately in an identifiable manner.

Part 1: Deliverable approval

1. Is this Deliverable (tick as applicable)
   - approved without corrections?
   - approved subject to corrections in section 2. below?
   - not approved?
2. What changes must be made to the Deliverable? (use as much space as is required)

3. What other corrections would you suggest? (use as much space as is required)

Part 2: General comments. Please give comments, where applicable, on the following aspects of the deliverable (use as much space as is required).

1. Deliverable structure

2. Clarity and consistency of content

3. Presentation

4. Contribution to objectives of task / WP/ BEAMS

Name of reviewer	Organisation
Signature	Date

Part 3 [To be completed by Deliverable author(s)]: Response Checklist. Please indicate your response to each comment made by the Peer Reviewer. If a change is made to the deliverable as suggested, please indicate as "Done". If not, please give your reasons. Use as much space as is required.

Part 1.2. What changes must be made to the Deliverable?

Part 1.3. What other corrections would you suggest?

Part 2.1. Deliverable structure

Part 2.2. Clarity and consistency of content

Part 2.3. Presentation

Part 2.4. Contribution to objectives of task / WP/ EMMA

Newsletter

beams
Building Energy Advanced Management System

1 VOLUME

Newsletter
Issue nr. 1, March 2010

SEVENTH FRAMEWORK PROGRAMME
EUROPEAN COMMISION

EDITORIAL

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Letter

Buildings Energy Advanced Management System

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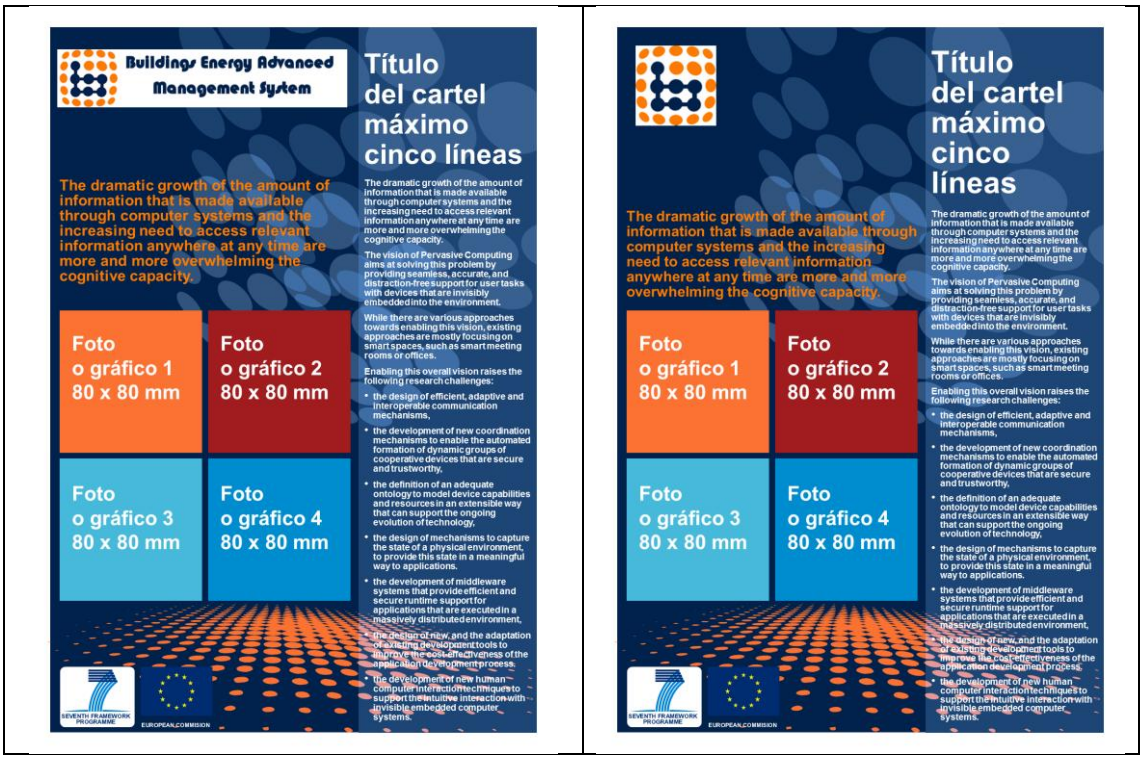

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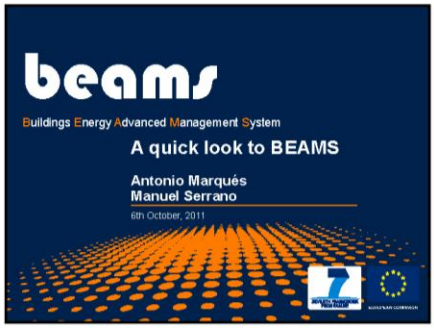

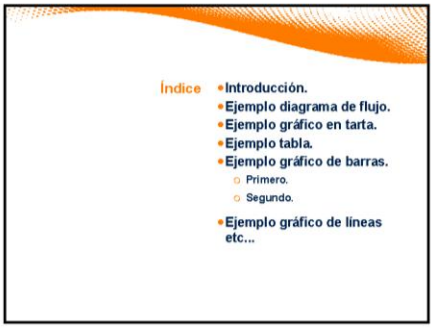

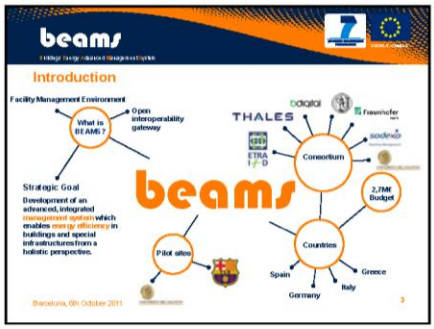

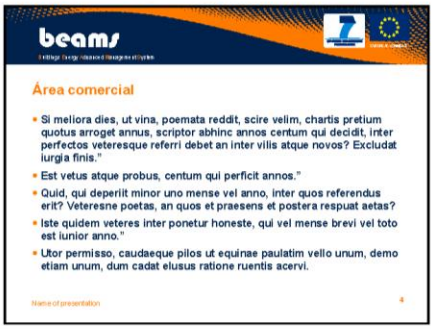

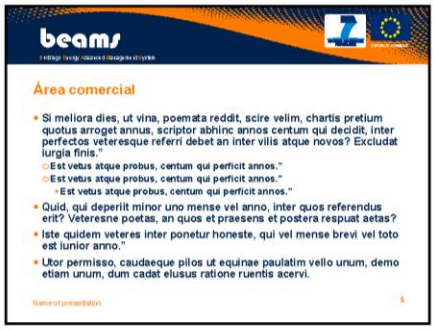

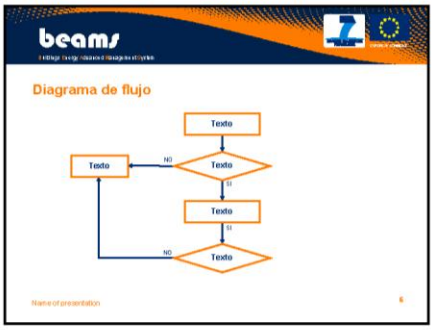

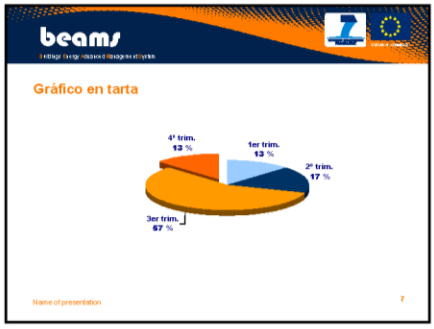
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Any Questions?

Brochure

The dramatic growth of the amount of information that is made available through computer systems and the increasing need to access relevant information anywhere at any time are more and more overwhelming the cognitive capacity of the amount of information.

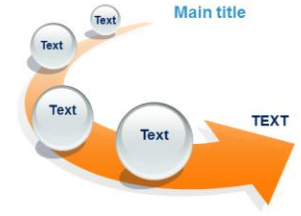
The vision

The vision of Pervasive Computing aims at solving this problem by providing seamless, accurate, and distraction-free support for user tasks with devices that are invisibly embedded into the environment.

While there are various approaches towards enabling this vision, existing approaches are mostly focusing on smart spaces, such as smart meeting rooms or offices.

Enabling this overall vision raises the following research challenges:

- the design of efficient, adaptive and interoperable communication mechanisms,
- the development of new coordination mechanisms to enable the automated formation of dynamic groups of cooperative devices that are secure and trustworthy,
- the definition of an adequate ontology to model device capabilities and resources in an extensible way that can support the ongoing evolution of technology,
- the design of mechanisms to capture the state of a physical environment, to provide this state in a meaningful way to applications,
- the development of middleware systems that provide efficient and secure runtime support for applications that are executed in a massively distributed environment,
- the design of new, and the adaptation of existing development tools to improve the cost-effectiveness of the application development process,
- the development of new human computer interaction techniques to support the intuitive interaction.



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Main title

	Title	Title	Title	Title	Title
Title	O	O	O	O	O
Title	O	O	O	O	O
Title	O	O	O	O	O
Title	O	O	O	O	O
Title	O	O	O	O	O
Title	O	X	O	X	O

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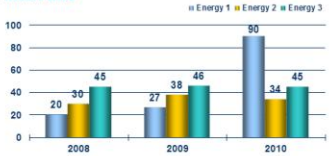
The vision of Pervasive Computing aims at solving this problem by providing seamless, accurate, and distraction-free support for user tasks with devices that are invisibly embedded into the environment.

While there are various approaches towards enabling this vision, existing

Enabling this overall vision raises the following research challenges:

- the design of efficient, adaptive and interoperable communication mechanisms,
- the development of new coordination mechanisms to enable the automated formation of dynamic groups of cooperative devices that are secure and trustworthy,
- the definition of an adequate ontology to model device capabilities and resources in an extensible way that can support the ongoing evolution of technology.

Main title



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The vision of Pervasive Computing aims at solving this problem by providing seamless, accurate, and distraction-free support for user tasks with devices that are invisibly embedded into the environment.

While there are various approaches towards enabling this vision, existing approaches are mostly focusing on smart spaces, such as smart meeting rooms or offices.

Enabling this overall vision raises the following research challenges:

- the design of efficient, adaptive and interoperable communication mechanisms,
- the development of new coordination mechanisms to enable the automated formation of dynamic groups of cooperative devices that are secure and trustworthy,
- the definition of an adequate ontology to model device capabilities and resources in an extensible way that can support the ongoing evolution of technology,
- the design of mechanisms to capture the state of a physical environment, to provide this state in a meaningful way to applications,
- the development of middleware systems that provide efficient and secure runtime support for applications that are executed in a massively distributed environment,
- the design of new, and the adaptation of existing development tools to improve the cost-effectiveness of the application development process,
- the development of new human computer interaction techniques to support the intuitive interaction with invisible embedded computer systems.

The dramatic growth of the amount of information that is made available through computer systems and the increasing need to access relevant information anywhere at any time are more and more overwhelming the cognitive capacity.

The dramatic growth of the amount of information that is made available through computer systems and the increasing need to access relevant information anywhere.

Minutes

Buildings Energy Advanced Management System

Title:	Document Version:
BEAMS MeetingNN Minutes	1.0

Project Number:	Project Acronym:	Project Title:
FP7-2011-NMP-ENV-ENERGY-ICT-EeB-285194	BEAMS	Buildings Energy Advance Management Systems

Contractual Delivery Date:	Actual Delivery Date:	Deliverable Type*-Security*:
Not applicable	DD/MM/YYYY	R-CO

*Type: P: Prototype; R: Report; D: Demonstrator; O: Other.

**Security Class: PU: Public; PP: Restricted to other programme participants (including the Commission); RE: Restricted to a group defined by the consortium (including the Commission); CO: Confidential, only for members of the consortium (including the Commission).

Responsible:	Organisation:	Contributing WP:
author	partner	WP9

Authors (organisation):
author (partner)

Abstract:
This document summarises the minutes of the meeting held in City (Country) the date.

Keywords:
lkasikdfiajslifjasljfaljfsl.

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Revision History

Revision	Date	Description	Author (Organisation)
V1.0	DD.MM.YYYY	New document	author (partner)

List of attendants

Name	Organisation	Name	Organisation

1. Agenda

Day1- date		
9:00-9:15 h	Opening and Welcome	ETRA
9:15-9:45 h	Partner presentations 2 slides per partner	ALL
9:45-10:15 h	Project Overview	ETRA
10:15-10:45 h	Coffee break	
10:45-11:45 h	**Workshop: Scope and expected results** *Short presentation of BEAMS starting point.* *What does each partner expect from the project?* *What will be used as proof of concept?* *(Suitability of the proposed applications/scenario)* *We should reach a common understanding on the outcome of the project.*	ETRA
11:45-12:45 h	**Workshop: Research Items** *Links between 'Communications' issues (WP2), Data Capturing and processing (Wp3), Enterprise Integration and Energy Management (Wp4) and the applications (Wp5)* *Timing and checkpoints (Feasibility and risk analysis)* *Do the application developers understand the outcome of the different research items?* *Are the applications covering the interest of the final user?*	UDE
12:45-13:15 h	Project Coordination, WP9	ETRA
13:15-13:45 h	Dissemination and Exploitation, WP8	ETRA

Dat 2- Date		
9:00-12:30 h	**1st year objectives, workflow, responsibilities, milestones, deliverables and timing (Horizontal WP)**	
60'	Requirements Analysis, WP1	UDE
30'	IP-based communication and software system , WP2	SICS
30'	Coffee break	
30'	Data capturing and processing , WP3	UDE
30'	Enterprise Integration and Energy Management , WP4	SAP
30'	End User Applications, WP5	ETRA
	Action List and closing	ETRA

2. Meeting – day 1

Partner presentations

Project Overview

3. Meeting – day 2

Project coordination (WP9)

Dissemination and exploitation (WP8)

Other issues

NA

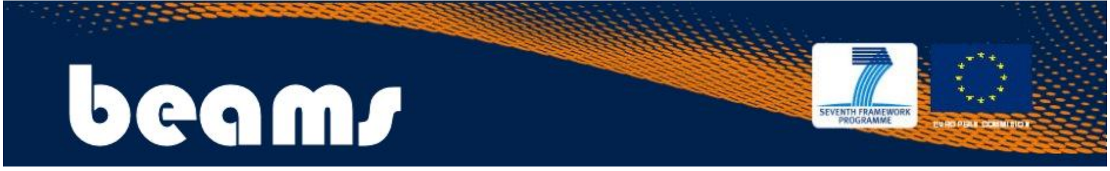
Closing

The date and location of the next meeting still need to be decided. The proposal on the meeting was:

Location: City, Country.

Dates: Dates.

Duration: 2 days.


Buildings Energy Advance Management Systems

4. Action list

BEAMS KICK OFF MEETING ACTION LIST			
Description	Resp. partner	Delivered to	Deadline

BEAMS MeetingNN Minutes 5

Quarterly Report

Buildings Energy Advanced Management System

Report on PM **(Mandatory)**

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
											Tot
											0
											0
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											0
											0
Tot	0	0	0	0	0	0	0	0	0	0	0

Report on € (optional - if no figures are reported, the rates used in the contract will be applied with the effort reported above)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
											Tot
ETRA I+D		0	0	0	0	0	0	0	0	0	0
UDE		0	0	0	0	0	0	0	0	0	0
SAP	0	0	0	0	0	0	0	0	0	0	0
SICS	0	0	0	0	0	0	0	0	0	0	0
ALG	0	0	0	0	0	0	0	0	0	0	0
CERTH	0	0	0	0	0	0	0	0	0	0	0
Tot	0	0	0	0	0	0	0	0	0	0	0

Activities reported in the period

Other costs.Re (optional)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
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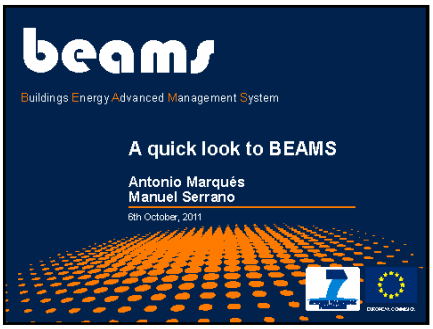
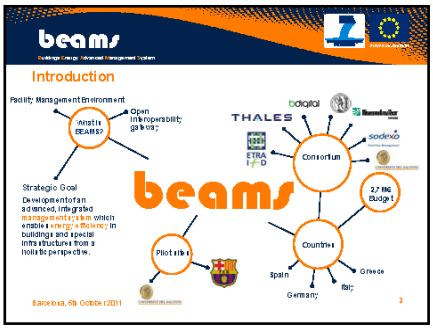
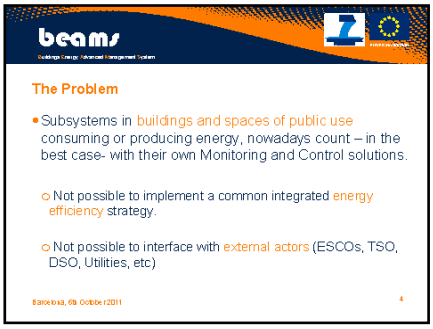
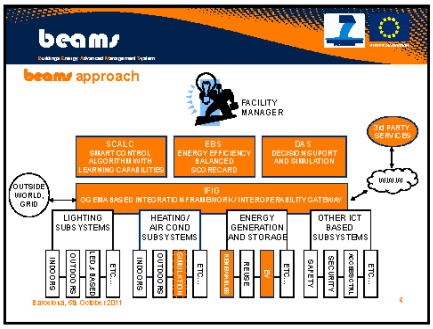
Annex B – Graphical Material

General presentation









Goal

- Our **MISSION** is to develop an advanced (i.e. smart, with learning capabilities), integrated (i.e. including or interoperating with the main ICT based legacy subsystems) management system which enables energy efficiency in buildings and special infrastructures from a holistic perspective (i.e. considering the indoors areas, the public spaces around the facility and the interaction of the overall compound with the grid and urban network outside it).

beams final results in short:

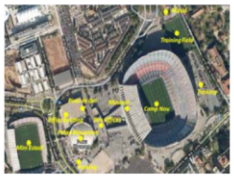
- A common Ontology, Information Models and Interfaces.
- A set of Greening Energy Positive Tools (RES and EV).
- An Open Gateway to interface to the energy subsystems within a facility.
- An Facility Management Environment.
- Large Demonstration in two emblematic scenarios:
  - Football Club Barcelona Stadium
  - Campus University of Salento

Technical Objectives/Outcome

1. Specification of requirements, use-cases and architectures.
2. Definition of common ontology, information models and interfaces to facilitate industry deployment and adoption by end-user, operators, designers, ESCOs, and system integrators.
3. Inclusion of new Greening Energy Positive Tools as Renewable Sources (RES) and Electrical Vehicles (EV) to locally balance the load inside the considered system and support the grid.
4. Development of an open gateway to interact with ICT solutions from different vendors.
5. Design and Implementation of a FAcility Management Environment (FAME), which will include three different modules:
   1. A Smart Control Algorithm with learning capabilities.
   2. A Decision Support and Simulation tool.
   3. An Energy Efficiency Balanced Score Card.
6. Validation and demonstration of the project results in two different pilot sites:
   1. The Stadium of the Football Club Barcelona in Spain.
   2. The campus of the University of Salento in Italy.
7. Evaluation and Assessment by means of a thorough methodology of the amount of energy and CO2 emissions saved through the deployment of BEAMS technology.

Barcelona, 6th October 2011

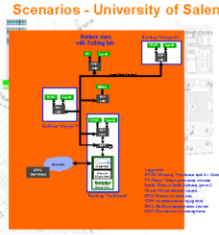
Scenarios – FCB Stadium and surrounding area



- **Camp Nou: first soccer team stadium.**
- **Masia: young player's residence building.**
- **Mini Estadi: second soccer team stadium.**
- **Palau Blaugrana: basketball, futsal, handball and roller hockey stadium.**
- **Pista de gel: ice skating facility.**
- **Office building, box offices and Museum.**
- **Training soccer field, parking and open areas.**

Barcelona, 6th October 2011

Scenarios - University of Salento Campus



- **Engineering School**
  - **building "La Stecca"**
  - **building "Corpo Y"**
  - **building "Corpo O"**
  - **outdoor areas.**

Any Questions?

Brochure

A Demonstration Oriented project

BEAMS technologies will be deployed and validated in two different scenarios.
The main pilot site will be the Football Club Barcelona Stadium, the Camp Nou, and its surrounding area. The facility is placed in the city of Barcelona in an area that comprises several buildings, sport facilities and public spaces managed by Sodexo, one of the members of BEAMS consortium. The project will not only deploy and evaluate its results at the main football arena, but also at the following buildings::

- **Masia: young player's residence building.**
- **Mini Estadi: second soccer team stadium.**
- **Palau Blaugrana: basketball, futsal, handball and roller hockey stadium.**
- **Pista de gel: ice skating facility.**
- **Office building, box offices and Museum.**
- **Training soccer field, parking and open areas.**

The second pilot sites will be at the campus of the University of Salento located in Italy with an overall extension of 34129 m2. The Faculty of Engineering buildings, with the relevant outdoor areas and parking lots, will be considered for the demonstration and validation purposes of this project.
All the parking areas in the campus, Counts with photo-voltaic pannels connected to the grid. This generated electricity will be monitored through BEAMS technology.

www.ict-beams.eu

PARTNERS

ETRA INVESTIGACIÓN Y DESARROLLO, S.A. (ETRA I+D) is the hi-tech unit within ETRA Group, one of the leading industrial groups in Spain. Its mission is putting in the market the most advanced solutions and services either directly or through the 10 companies of the Group. The main market areas of ETRA Group are Spain, South-Central America, South East Asia and the EU.

THALES ITALIA SPA (THALIT) is the Italian subsidiary of the French Thales Group, a leading international electronics and systems group, addressing defence, aerospace and security markets worldwide. Thales employs 68,000 people in 50 countries with 2009 revenues of €12.9 billion

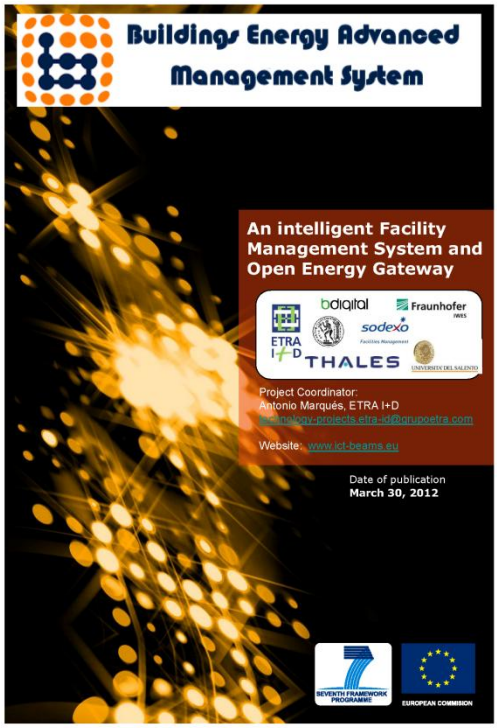
BARCELONA DIGITAL (BDIGITAL) is a private, non-profit organization for applied research and technological development of Information and Communication Technologies (ICT) applied in the mobility, energy, health and security fields.

THE INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS - NATIONAL TECHNICAL UNIVERSITY OF ATHENS (ICCS) is a private law body associated with the Department of Electrical and Computer Engineering of the National Technical University of Athens (NTUA).

FRAUNHOFER IWES ADVANCING ENERGY SYSTEMS (IWES)
IWES addresses applications-oriented research in the field of electrical engineering and systems technology for the use of renewable energies. The spectrum covers ranges from theoretical investigations over experimental studies and field tests through to the development of devices and systems.

SODEXHO FACILITY MANAGEMENT (SDXFM) is a Spanish unit of the French multinational Sodexo Alliance which was founded in 1966 and currently has 14,700 million euros in revenue, 380.000 employees, 33.900 sites, 50 million daily users, 80 countries, being the 22nd world's largest employer. The key figures of Sodexo Spain are: 185 million euros in operating income, 4.050 employees.

UNIVERSITÀ DEL SALENTO (UNISAL)
The Department of Engineering for Innovation of University of Salento focuses on new technologies and aims at promoting and disseminating technology innovation. The Department is active in the research fields of Civil Engineering, Computer Science, Controls and Robotics, Industrial Engineering and Management, Materials Science, Mechanical Engineering,



Why BEAMS project?

Europe and the rest of the world share common goals towards energy efficiency and sustainability. European leaders committed themselves to reduce primary energy consumption by 20% compared to projections for 2020. Energy efficiency is the most cost-effective way of achieving such goal. Furthermore, improving energy efficiency also addresses the key energy challenges of climate change, energy security and competitiveness.

By means of a decentralised architecture, BEAMS will enable new mechanisms to extend current building management systems and achieve higher degrees of efficiency. **BEAMS strategic goal will be to define and develop an advanced, integrated management system for buildings and special infrastructures of public use.**

This system will rely on an open interoperability gateway that will allow the control of already identified heterogeneous subsystems acting as sources and loads in such facilities. Some of them typically present nowadays in spaces of public use, such as public lighting or ventilation and air conditioning. Some others, to become widely adopted in the next years, such as renewable sources or electric vehicles.

The solution proposed will not only support the human operator of the building or facility to achieve higher efficiency in the use of energy, but it will also open new opportunities to third parties such as Energy Service Companies (ESCO), utilities and grid operators– needing and willing to interact with BEAMS management system through the interoperability gateway in order to improve the quality and efficiency of the service –both inside and outside the perimeter of the facility.

This open gateway proposed by BEAMS will provide also a more granular and accurate tool to respond to emergency situations without actually interrupting the service. In this way, to avoid an overload, the grid operator could request to reduce the consumption from public lighting, or HVAC systems (Heating, Ventilating, and Air Conditioning); it could request the generation of energy in the case of facilities with their own generators, or the access to previously stored energy, etc.

A **Distribution System Operator (DSO)** provides the last mile for the final users, as well as the adaption of the electricity from the high voltage used by TSOs

A **Energy Service Company (ESCO)** manages internal energy management processes, as a public lighting system or HVAC on behalf of the facility manager.

A **The Facility Manager** is the responsible of the management of an entire facility – including the energy management.

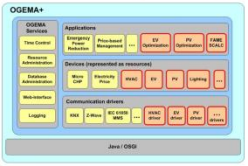
A **Building User** is anyone making use of a facility under the control of a Building Management System

BEAMS strategic goal is the development of an **advanced** (i.e. *smart, with learning capabilities*), **integrated** (i.e. *including or interoperating with the main ICT based legacy subsystems*) management system which enables energy efficiency in buildings and special infrastructures from a **holistic perspective** (*i.e. considering the indoors areas, the public spaces around the facility and the interaction of the overall compound with the grid and urban network outside it*).
The project will include an **open interoperability gateway** that will allow the management of diverse, **heterogeneous sources and loads**, some of them typically present nowadays in spaces of public use (*e.g. public lighting, ventilation, air conditioning*), some others emergent and to be widespread over the next years (*e.g. renewable sources, electric vehicles*).
BEAMS will be a **user driven**, **demonstration oriented** project, where systematically collecting evidence of the energy and CO2 savings achieved by the project's technologies, expected to be around 25%, will be key.

OGEMA Gateway

OGEMA is an open software platform for energy management which links the customer's loads and generators to the control stations of the power supply system. By providing a manufacturer- and hardware-independent platform, OGEMA allows energy flows within end customer premises to be optimized with high degree of modularity. Web based user interaction and other basic functions are provided by a framework architecture shown in the illustration beside.

OGEMA stands for "Open Gateway Energy Management Alliance". The Alliance aims at developing a software standard and reference implementation. Participants are manufacturers and users/operators of standard conformant systems. All developers and involved parties can turn their ideas for more efficient energy usage by automation into software for the gateway platform.



Scientific and Technical objectives

- Information retrieval: BEAMS uses state of the art technologies to dynamically obtain and process information from current available installed subsystems.. The project will **define common ontology, information models and interfaces** to facilitate industry deployment and adoption by end-user, operators, designers, ESCOs, and system integrators

- Information distribution. BEAMS develops a highly configurable open **gateway** to interact with ICT solutions from different vendors. The gateway will not only serve to the building/microgrid operator to optimise its service, but also will open new management opportunities out of the microgrid which will lead to holistic optimisation strategies.

- Inclusion of Renewable Sources. BEAMS will deploy **Greening Energy Positive Tools** as Renewable Sources (RES) and Electrical Vehicles (EV) to locally balance the load inside the considered system and support the grid. Facility Managers will be able to run simulations in order to assess the impact of introducing RES in their infrastructure.

- End-user applications. BEAMS will design and implement a Facility Management Environment (FAME), which will include three different modules:
  - A Smart Control Algorithm with learning capabilities.
  - A Decision Support and Simulation tool.
  - An Energy Efficiency Balanced Score Card

- Real-world evaluation. BEAMS validates and assesses the BEAMS approach in two real world Pilot Sites.

General Poster