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# **D10** – Dissemination report #1

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D10

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# **Summary**

This deliverable takes place at the middle of the FIEMSER project in the context of WP7 - Exploitation & Dissemination, which deals with the project website and dissemination activities.

The main goal of this WP7 is to disseminate the results of the project and to define plans for the later exploitation of the project results.

This deliverable (D10) has been made as an intermediate result of the execution of task 7.2 called "Dissemination". This report covers the activities over the first half of the project (2010/02/01 to 2011/07/31). At the end of the FIEMSER project, a second report on dissemination activities will be provided.

The goal of Task 7.2 is to foster a wide range of activities contributing to the visibility and notoriety of FIEMSER projects. This includes the preparation and diffusion of various information supports such as project website and leaflets, as well as the participation to international workshops and conferences. This deliverable presents the main outcomes of dissemination activities over the first half of FIEMSER project and the activities that are already scheduled for the second half of the project.

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# **Abbreviations**

6LowPAN IPv6 over Low power Wireless Personal Area Networks

BIM Building Information Modelling

CIB Computer Knowledge Building

DAR Dissemination Activity Report

EUPVSEC European PhotoVoltaic Solar Energy Conference

gbXML Green Building XML

HotEmNets Hot Topics in Embedded Networked Sensors

ICT4E2B ICT for Energy-Efficiency in Buildings

REEB The European strategic research Roadmap to ICT enabled Energy-

Efficiency in Buildings & construction

ROLL Routing Over Low power and Lossy networks

## 1. Introduction

The main objective of T7.2 "Dissemination" is to foster a wide range of activities contributing to the visibility and notoriety of FIEMSER project. This includes the preparation and diffusion of various information supports such as project website and leaflets, as well as the participation to international workshops and conferences. This deliverable presents the main outcomes of dissemination activities over the first half of FIEMSER project.

The dissemination activities are structured around following aspects:

- Internal dissemination
- Project website
- Leaflet
- Events organization
- Presentations and publications
- Standardization

The core of this document is the description of aforementioned activities that were done in the first part of the project and the scheduled ones for the next one.

For each of the former, we report in detail about the dissemination material being used and, if applicable, the participants and received feedback.

## 2. Dissemination activities (M1-M18)

An initial plan of dissemination activities has been deployed with the aim to release the FIEMSER project to the European Community. Several dissemination activities took place from the very beginning of the project. Following, a summary of the latest communication materials, conferences and standardization activities is presented for the first 18 months of the project.

The Dissemination Activity Report (DAR) of all dissemination events (e.g., FIEMSER events, presentations, publications,...) can be found on the project website.

### 2.1 Internal dissemination

So far, some partners have internally disseminated the scope of the project through the corporate websites:

- **TECNALIA**: A short description about the FIEMSER project and a link to its web site has been included in TECNALIA blog about Energy Efficiency in Buildings <a href="http://info.labein.es/energiaenedificacion/proyectos">http://info.labein.es/energiaenedificacion/proyectos</a>.
- ACCIONA: A news on FIEMSER project has been posted on the public website, in the press room area, in order to present the project.
   <a href="http://www.acciona-infraestructuras.com/press\_room/news/2011/fiemser.aspx?page">http://www.acciona-infraestructuras.com/press\_room/news/2011/fiemser.aspx?page</a>

Also internal technical forums are been used to disseminate FIEMSER objectives and achievements:

• PCL introduced FIEMSER in the internal bi-monthly 'energy projects' alignment meeting. In this Philips meeting, different departments (Philips Consumer Lifestyle, Philips MiPlaza, Philips Research, and Philips Innovation Services) come together to exchange information regarding energy related projects. In this way the FIEMSER output is shared within the organization.

## 2.2 Project website

The FIEMSER website is available at the following URLs: <a href="http://www.fiemser.eu/">http://www.fiemser.eu/</a> and <a href="http://www.fiemser.com">http://www.fiemser.com</a>. The web site provides two areas:

- The public Internet area for wide dissemination of the results and papers, and information about the project throughout the European Union and beyond. This area is open without any access restriction.
- The protected Intranet site for partners, to exchange information for the proper development of the tasks in the project

The public Internet area is the most relevant in relation with dissemination activities and provides the following information:

- Main objectives of the project.
- Workpackages structure
- Project team and contact person for each partner
- Schedule of public deliverables. Those that are already issued can be directly downloaded form the website.
- FIEMSER papers, which can be directly downloaded from the web site or through the link to the conference web site.
- Events about ICTs for energy efficiency in buildings

The following image shows the FIEMSER's homepage:

FIEMSER: GA no.: 248605

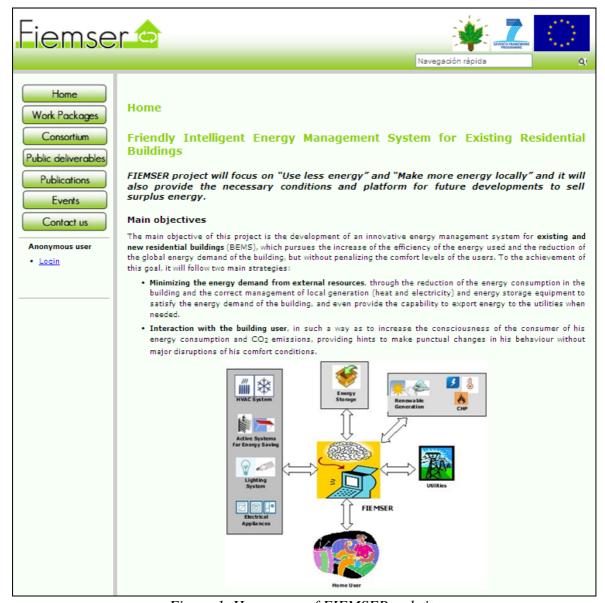


Figure 1. Homepage of FIEMSER website

The FIEMSER website is permanently updated with the last project achievements. Currently, a new version of the website is under development in order to make it more attractive not only to the research community, but also to the industry and end users.

### 2.3 Leaflet

The FIEMSER brochure is available in the public area of the project website. The full-resolution PDF document can be retrieved at <a href="http://www.fiemser.eu:8080/attach/Publications/FIEMSER\_fact-sheet%20v3.pdf">http://www.fiemser.eu:8080/attach/Publications/FIEMSER\_fact-sheet%20v3.pdf</a> .

**FIEMSER**: GA no.: 248605





# Friendly Intelligent Energy Management System for Existing Residential Buildings

FIEMSER project will focus on "Use less energy" and "Make more energy locally" and it will also provide the necessary conditions and platform for future developments to sell surplus energy.

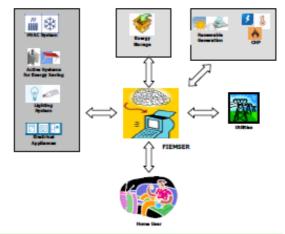


#### Main Objectives

The main objective of this project is the development of an innovative energy management system for existing and new residential buildings (BEMS), which pursues the increase of the efficiency of the energy used and the reduction of the global energy demand of the building, but without penalizing the comfort levels of the users. To the achievement of this goal, it will follow two main strategies:

Increasing energy
efficiency in
residential buildings
without penalizing
comfort, through
intelligent control and
friendly user
interfaces

- Minimizing the energy demand from external resources, through the reduction of the energy consumption in the building and the correct management of local generation (heat and electricity) and energy storage equipment to satisfy the energy demand of the building, and even provide the capability to export energy to the utilities when needed.
- Interaction with the building user, in such a way as to increase the consciousness of the consumer of his energy consumption and CO<sub>2</sub> emissions, providing hints to make punctual changes in his behaviour without major disruptions of his comfort conditions.



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FIEMSER - September 2010

Figure 2. FIEMSER brochure

# 2.4 Events Organization

• "European Workshop on ICT for Energy-Efficiency in Buildings" at NUID UCD facilities, Dublin, 8 June 2010

One major dissemination achievement of FIEMSER project has been the organization of a European workshop in conjunction with other ICT projects.

	European Workshop on ICT for Energy-Efficiency	y in Building	gs	
Event	http://www.csi.ucd.ie/content/european-workshop-ict-energy-efficiency-buildings			
	8 June 2010			
	University College Dublin (Ireland),			
	Information and Communication Technology significant energy reduction in new and exist accomplish the European energy policy toward and more sustainable energy.	ing building Is a low co	gs, which is key to insumption economy	
Description	The School of Computer Science and Informati Workshop on ICT for Energy-Efficiency in Build facilitate synergy and harmonization between the and FIEMSER projects funded by the Europea call 4.	dings as a the EnPRO an commis	networking event to VE, Energy Warden sion during the FP7	
	The workshop is also an opportunity for earlier funded projects to share their experience, achievements and possible pitfalls to avoid. To this end, the workshop will feature short presentations and a panel discussion from 7 main funded European and Irish projects in the topic ICT for Energy efficiency in buildings.			
Purpose	Introducing the FIEMSER objectives to the rest of EU funded projects in order to identify possible synergies.			
Туре	☑ Technical    Marketing    Training			
Form	☐ Paper ☑ Presentation ☐ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:			
Frequency	□ Quarterly □ Semi-annually □ Annually	☑ Other:	EnPROVE, Energy Warden and FIEMSER projects initiative	
Responsibility	☑ TECNALIA ☐ CSTB ☐ FRAUNHOHER ☑ UCDNI ☐ PCL ☐ TC	UID 🗖 AC	CIONA <b>I</b> TENESOL	
Audience	□ Academia ☑ Researchers □ Industry	□ Other:		
Nº of Attendants	20			
Conclusions	FIEMSER project research lines are confirmed as projects are working in the same direction.	very promi	sing because several	

Table 1. DAR of European Workshop on ICT for Energy-Efficiency

## 2.5 Presentations and publications

The FIEMSER project has given visibility to its technical activities through several presentations and publications in numerous international conferences. A summary view is provided in Table below. Then, for each event, a Dissemination Activity Report (DAR) is provided which gives many relevant details (e.g., scope, participant partner, number of attendants, impact, etc.)

Event	Date, Venue	Type
HotEmNets 2010	June 28-29, 2010 Killarney, Ireland	Workshop
ICT Networking Sessions – REEB & ICT4E2B Forum	September 28, 2010 Brussels, Belgium	Conference
BuildSys 2010	November 2, 2010 Zürich, Switzerland	Workshop
ICT for Sustainable Homes	November 18-19, 2010 Nice, France	Conference
ICT4E2B Forum on Data Models	January 24, 2011 Brussels, Belgium	Workshop
Münchener SolarTage	April 2-3, 2011 München, Germany	Congress
Model Predictive Control in Buildings Workshop	June 24-25, 2011 Montréal, Canada	Workshop

Table 2. Recap of presentation/publication dissemination events for FIEMSER (M1-M18)

• FIEMSER poster presentation at the "6th Workshop on Hot Topics in Embedded Networked Sensors - HotEmNets 2010", 28-29 June 2010, Killarney, Ireland

Event	HotEmnets http://www.hotemnets2010.org June 28-29 2010 Killarney, Ireland		
Description	The Sixth Workshop on Hot Topics in Embedded Networked Sensors (HotEmNets 2010) brings together wireless sensor network researchers from academic and industrial backgrounds to present groundbreaking results that will shed light on present and future research challenges. The workshop emphasizes results from experiments or deployments that quantify the challenges in the wireless sensor systems of today as well as early results from new ideas that introduce promising approaches that will define the challenges in the wireless sensor systems of tomorrow. We especially welcome papers reporting on results that refute common assumptions, deployment experiences, novel and original approaches, and, more generally, papers that will help inform and guide research.		
Purpose	Disseminate some research activity correlated to the open source building management framework for TinyOS sensor networks, which can be used to gather sensor data for the FIEMSER		
Туре	∗Technical □ Marketing □ Training		
Form	☐ Paper ☐ Presentation ☐ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☒ Other: Poster		
Frequency	□ Quarterly □ Semi-annually ★ Annually □ Other:		
Responsibility	□ LABEIN □ CSTB □ FRAUNHOHER ※ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC		
Audience	□ Academia ♣ Researchers □ Industry □ Other:		
No of Attendants	~50		
Conclusions	The poster was well received by the workshop attendees and it has set the basis for a dissemination activity in a larger conference or jornal.		

Table 3. DAR of the HotEmNets 2010 Conference

# • "FIEMSER and the REEB Technological Roadmap", ICT2010 Networking Sessions, Sept 28th 2010, Brussels

	ICT2010 – Networking Sessions - REEB & ICT4E2B Forum: a European-wide initiative for long-term Strategic Research in ICT-enabled Energy Efficiency in Buildings.	
Event	http://ec.europa.eu/information_society/events/ict/2010/index_en.htm	
	28 September 2010	
	Brussels (Belgium)	
Description	The ICT2010 event is the place to be to discover Europe's exciting and ground-breaking developments in ICT. It gathers more than 5000 researchers, innovators and influencers who will focus on policy priorities such as Europe's Digital Agenda and the 2011-2012 financial programme (€2.8 billion) of the European Union for funding research and innovation in ICT.  The "REEB & ICT4E2B Forum" networking sessions focuses on a R&D technology roadmap on ICT for energy efficiency in construction to accelerate the adoption, development and take-up of ICT technologies in buildings and associated services for enhanced energy management. The roadmap has been developed by REEB (European strategic research roadmap to ICT-enabled energy efficiency in buildings and construction) with input from the European ICT4E2B community. ICT4E2B intends to update the roadmap by establishing a stakeholders' forum. This networking session is designed to prepare the ground for future developments in the ICT4E2B forum and provide a platform for discussions on research and technical development proposals for the upcoming EEB-ICT calls in 2010 and 2011.	
Purpose	FIEMSER is introduced to the industrial and technological European stakeholders that are working in the area of ICT for energy efficiency in buildings. Also the alignment of the FIEMSER project with the REEB technological roadmap is also analyzed.	
Туре	☑ Technical ☐ Marketing ☐ Training	
Form	☐ Paper ☒ Presentation ☐ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:	
Frequency	□ Quarterly □ Semi-annually ☑ Annually □ Other:	
Responsibility	☑ LABEIN ☑ CSTB ☐ FRAUNHOHER ☐ UCDNUID ☐ ACCIONA ☐ TENESOL ☐ PCL ☐ TC	
Audience	□ Academia ⊠ Researchers ⊠ Industry □ Other:	
Nº of Attendants	50 aprox.	
Conclusions	There was a lot of interest in the project, with questions about the use of simulation tools, the type of actuators that will be used or what will be the development in the area of wireless sensors	

Table 4. DAR of the ICT2010 Conference

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## • BuildSys 2010, November 2nd 2010, Zürich, Switzerland

The FIEMSER project was presented by UCD at ACM BuildSys 2010, a selective forum for the presentation of research results on systems' issues in the area of building controls, energy management, embedded, and networked sensors. The workshop provided an ideal convergence venue for the Sensor, Building and Energy research communities to address the research challenges facing the design, deployment, use, and fundamental limits of these systems.

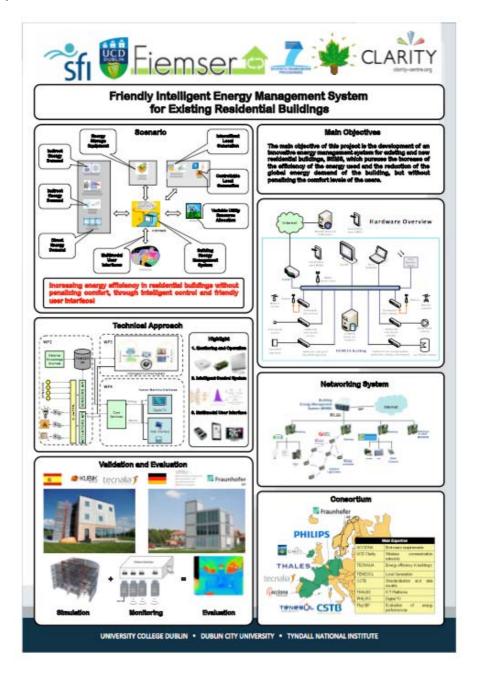


Figure 3. FIEMSER Poster presented in BuildSys 2010

• Submission of the paper "Friendly Intelligent Energy Management System for Existing Residential Buildings" to the "ICT for Sustainable Homes" conference, 18-19 November 2010, Nice, France

	ICT for Sustainable Homes 2010 http://ict-sustainablehomes.org/past-events/edition-2010/		
Event	18-19 November 2010		
	Nice, France		
Description	The 2010 edition of ICT for Sustainable Homes Conference included thematic sessions and scientific workshops devoted to energy efficient homes and neighbourhoods and ICT for energy efficiency at large.		
Purpose	This Conference was chosen to present the first results of the FIEMSER project to a large audience of people concerned by ICT4EE in buildings, as well as to exchange and find potential collaboration with other similar or complementary initiatives. To that respect, particular contacts have been made with manufacturers working on smart household appliances such as white goods.		
Туре	☑ Technical ☐ Marketing ☐ Training		
Form	☑ Paper ☑ Presentation ☑ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:		
Frequency	☐ Quarterly ☐ Semi-annually ☐ Other:		
Responsibility	□ LABEIN ☑ CSTB □ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC		
Audience	<ul><li>☑ Academia</li><li>☑ Researchers</li><li>☑ Oth er:</li><li>☑ Standardization bodies, policy makers</li></ul>		
Nº of Attendants	Around 100		
Conclusions	This Conference was a good opportunity to present FIEMSER ideas and compare our approach to other projects in the same field (BeyWatch, BeAware, EnerSip).		

Table 5. DAR of the ICT for Sustainable Homes 2010 Conference

## • ICT4E2B Forum on Data Models, January 24th 2011, Brussels

Event	ICT4E2B Forum – Workshop on Data Models 24 January 2011 Brussels, Belgium	
Description	Workshop launching a Forum on Data Models in ICT for Energy Efficiency in Buildings, organized in the context of the ICT4E2B Forum, a Coordination and Support Action aimed at bringing together all relevant stakeholders involved in ICT systems and solutions for Energy Efficiency in Buildings, identifying and reviewing their needs in order to design a multi-annual technology roadmap to foster the future research on the topic. The aim of this new Forum is to merge (or ensure interoperability) the data models and semantics of BEMS systems to allow for a seamless model that operates from the Building design phase to the Building operational phase.	
Purpose	The FIEMSER project and FIEMSER Data Model (deliverable D5) were introduced during this workshop. Other similar initiatives were presented and discussed: Intube, eDiana, HESMOS, MIRACLE.	
Туре	☑ Technical    Marketing    Training	
Form	☐ Paper ☐ Presentation ☑ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:	
Frequency	☐ Quarterly ☐ Semi-annually ☐ ☐ Other: Not yet defined	
Responsibility	□ LABEIN ☑ CSTB □ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC	
Audience	☐ Academia ☐ Researchers ☐ Oth er: ☐ Industry ☐ EC	
N⁰ of Attendants	Around 10	
	This workshop was a good opportunity to present and discuss FIEMSER results in terms of data modelling. Following this workshop a new collaborative space, dedicated to Data Models, has been opened within the ICT4E2B Forum website.	

Table 6. DAR of the ICT4E2B Forum, 1st Workshop on Data Models

# • Münchener Solartage 2011, April 2-3 2011, München

	Münchner Solartage 2011
Event	<u>http://www.muenchner-</u> solartage.de/tl_files/Solartage/PDF/11/flyer_solartage_2011.pdf
	02.April 2011
	Munich, Germany (Bauzentrum der Stadt München)
Description	Combination of fair and presentation across solar energy encouragement in residential buildings
Purnose	Inform some of the future users (inhabitants, craftsmen, architects) of a FIEMSER system. Hear the opinion from this target group about the acceptance of utilization schedules and the FIEMSER system at all
Туре	☐ Technical ☑ Marketing ☐ Training
Form	□ Paper ☑ Presentation □ Workshop □ Fact-sheet □ Email □ Internet □ Other:
Frequency	□ Quarterly □ Semi-annually □ Annually □ Other:
Responsibility	□ LABEIN □ CSTB ☑ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC
Audience	□ Academia □ Researchers ☑ Industry ☑Other: Users, craftsmen, architects
N⁰ of Attendants	45
Conclusions	Good feedback of the audience about the general idea. Doubts of some potential user because of the effort for the daily creation of the utilization schedules.

Table 7. DAR of the Münchener Solartage 2011 Conference

## • Model Predictive Control in Buildings Workshop, June 24-25, 2011, Montréal

Event	Model Predictive Control in Buildings Workshop
	http://www.ibpsa.us/MPCinBuildingsWorkshopAnnouncement.pdf
Event	24./25.June 2011
	Montreal / Canada
Description	International scientific workshop about "Model Predictive Control in Buildings"
Purpose	Give an overview about the current project state to the international research community – here especially at the building simulation field. Find possible scientific and/or industrial cooperation partners for the further project development. Sample new ideas and approaches.
Туре	☑Technical ☐ Marketing ☐ Training
Form	☐ Paper ☑ Presentation ☑Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:
Frequency	□ Quarterly □ Semi-annually ☑ Annually □ Other:
Responsibility	□ LABEIN □ CSTB ☑ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC
Audience	☑ Academia ☑ Researchers ☑ Industry ☐ Other:
No of Attendants	85
Conclusions	My presentation detected interest by the audience, because it was the only presentation about a concrete application of the more theoretical presentations of the other attendees.  Got five new contacts after the presentation. Offer from a weather service provider for free weather forecast data. Discussions with other attendees about new methods to figure out, whether inhabitants are in a room or not (3 sensor model: combination of motion detector, CO2 detector, acoustic detector = 95% secure prognostication, if somebody is in the room or not.). New function modules for "Energy Plus" as Plug-ins. Further interesting approaches

Table 8. DAR of the Model Predictive Control in Buildings Workshop

#### 2.6 Standardization

In this chapter, we review the efforts done in terms of liaison with some representative standardization bodies.

## **2.6.1 BIM (Building Information Models)**

FIEMSER project participated in the Data Models for Energy-Efficient Buildings Workshops (see above-mentioned dissemination events), organized at the beginning of 2011 by the ICT4E2B Forum Project. This workshop gave us the opportunity to present the FIEMSER Data Model and discuss about it with other researchers, contributing to the elaboration of a dedicated data model to support energy management systems, which could interoperate with existing BIM standards (IFC, gbXML). Such an initiative paves the way to the setting-up of standards supporting semantic interoperability in the area of Buildings Energy Efficiency.

### 2.6.2 IETF WG ROLL & 6LowPAN

In 2010, Anthony Schoofs from the CLARITY team at UCD contributed to the 6LowPAN standardization with a draft known as draft-martocci-6lowapp-building-applications-01 for Commercial Building Applications Requirements. Although this draft in not fully in line with the requirements of FIEMSER, the project helped identifying common requirements between commercial and residential buildings, which were included in the draft. In the future, UCD may look for opportunities to contribute to the standardization bodies with a possible contribution for residential buildings derived from the FIEMSER requisites.

# 3. Dissemination plan (M19-M36)

In the upcoming period, that is the second half of the project, the FIEMSER Consortium has an ambitious plan to give high visibility to the project outcomes. In the following, we provide insights about the main dissemination activities that are already planned.

#### 3.1 Internal dissemination

In the next period, partners will continue promoting the FIEMSER project through their corporative dissemination channels. For example, the PHILIPS's bi-monthly 'energy projects' alignment meetings.

## 3.2 Project website

Currently, a new version of the website is under development in order to make it more attractive not only to the research community, but also to the industry and end users.

## 3.3 Workshops

Following the successful experience of the "European Workshop on ICT for Energy-Efficiency in Buildings" (June 2010), it is foreseen organizing a second edition of this workshop, also in collaboration with the EnPROVE and EnergyWarden projects by the end of 2011 or beginning of 2012.

## 3.4 European Commission dissemination actions and concertation meetings

Every 2 years, the EC organizes one of the most relevant ICT conferences in Europe. Next one will take place by 2012 and we plan presenting the FIEMSER project in this conference.

# 3.5 Conferences and publications

The FIEMSER project has already submitted publications to the events listed in the table below. New dissemination actions will be defined during the next months.

Event	Date, Venue	Туре
EUPVSEC	September 5-9, 2011 Hamburg, Germany	Conference
ECTP-E2BA-Eracobuild	October 4-5, 2011 Warsaw, Poland	Workshop
CIB W78 / W102	October 26-28, 2011 Sophia Antipolis, France	Conference
CIB W78 / W102	October 26-28, 2011 Sophia Antipolis, France	Workshop
IRES 6 <sup>th</sup> International Renewable Energy Storage Conference and Exhibition,	November 28-30, 2011 Berlin, Germany	Conference

Table 9. Preliminary planned dissemination event for FIEMSER (M19-M36)

• Submission of the paper "Friendly Intelligent Energy Management System for Existing Residential Buildings" to the "EUPVSEC" conference, 5 - 9 September 2011, Hamburg, Germany

Event	26 <sup>th</sup> European Photovoltaic Solar Energy Conference and Exhibition 5 <sup>th</sup> to 9 <sup>th</sup> of September 2011
	Hamburg, Germany
Description	The most important yearly European scientific event in photovoltaic solar energy including the bigger PV exhibition
Purnose	This Conference was chosen to introduce the first results of the FIEMSER project to a large audience of people of the solar community concerned by photovoltaic systems particularly with building integration (BIPV), as well as to exchange and find potential deployment of the FIEMSER solution. The presentation is within the PV architecture division.
Туре	☑ Technical □ Marketing □ Training
Form	□ Paper □ Presentation □ Workshop □ Fact-sheet □ Email □ Internet ☑ Other: Poster
Frequency	□ Quarterly □ Semi-annually □ Annually □ Other:
Responsibility	□ LABEIN □ CSTB □ FRAUNHOHER □ UCDNUID □ ACCIONA ☑ TENESOL □ PCL □ TC
Audience	☐ Academia ☐ Researchers ☐ Othe Industry ☐ Standardization bodies, policy makers
Nº of Attendants	Around 300
Conclusions	This Conference was a good opportunity to present FIEMSER concept to the solar community dealing with BIPV and smart buildings including PV generation.

Table 10. DAR of the 26th European Photovoltaic Solar Energy Conference and Exhibition

A poster has been accepted and will be introduced by TENESOL.

FIEMSER: GA no.: 248605



Grant agreement no.: 248605



## Friendly Intelligent Energy Management System for Existing Residential buildings

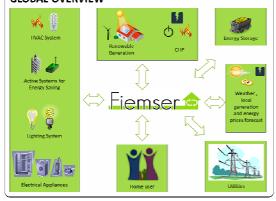


ne LAURENT (1) Jean-Christian MARCEL (1) (1) TEMESOL 12-1A, allée du Levant 69890 La-To ANN CRACHENDONCK (2) (2) PFEUPS Communer Lifestyle HTC37, 5656AF

#### **OBJECTIVE**

The development of an innovative energy management system for existing and new residential buildings (BEMS), which pursues the increase of the efficiency of the energy used and the reduction of the global energy demand of the building, but without penalizing the comfort levels of the users.

#### **GLOBAL OVERVIEW**



#### **FIRST RESULTS**

#### **Technical Specifications**

- Energy generation, consumption and storage in buildings
- System Architecture & Technical Specifications FIEMSER data model

#### **Monitoring & Operation Tool**

- Definition of the wireless control network
- Implementation of the wireless control network and of the FIEMSER data manager

#### Intelligent control system

Forecasting

(irradiance prediction from weather forecast for photovoltaic production)

- Loads Manager
- Energy dispatch

#### Multimodal User Interface (UI)

Definition of the architecture of the UI Implementation of core services, web based UI and digital TV UI

#### **System Integration**

Interfaces development

Public deliverables are available on our website: www.flenser.eu

#### TWO MAIN STRATEGIES

Minimizing the energy demand from external resources:

- reduction of the energy consumption in the building,
- correct management of local generation (photovoltaic, solar heater collector, wind mill and/or CHP systems) and energy storage.

#### Interaction with the building user:

increase the consciousness of the consumer of his energy consumption and CO<sub>2</sub> emissions.

### FORECASTED FIEMSER IMPLEMENTATION

#### Intelligent control

- Holistic control strategies
- Taking user and buildings activities into account
- Production & Consumption predictive control by considering weather forecast
- Integration of simulation tools in BEMS
- Reduce energy consumption with wireless sensor
- Plug & Play concept

#### User awareness and decision support

- Interfaces for energy display

## **Energy management & trading**

- Energy awareness impact on user behavior
- Real-time self assessment

#### Integration technologies

- Integration service platform
- Integration with existing building information modeling and communication standards



Figure 4. FIEMSER poster to be presented in 26th EUPVSEC by Tenesol

• Dissemination of the FIEMSER leaflet in the "ECTP-E2BA-Eracobuild Conference 2011", October 4-5 2011, Warsaw (Poland)

Event	ECTP-E2BA-Eracobuild Conference 2011 http://www.ectp.org/warsaw2011.asp
	October 4-5 2011,
	Warsaw (Poland)
Description	This 5 <sup>th</sup> Conference of the European Construction Technology Platform, combined with a Conference of the Era-Net Eracobuild, will show how the Construction sector contributes to EU2020 ambitions and illustrate the ECTP objectives to develop Innovative Buildings and Infrastructures to construct Europe's future, to innovate through research and integration of inputs from other sectors using appropriate tools (such as PPPs) in the next Common Strategic Programme, and to conduct two major European Initiatives:  • E2B: "Energy-Efficient Buildings" European Initiative  • reFINE: "Infrastructure Networks of Europe" Initiative  The conference is addressing stakeholders of the Construction sector interested in Research and Development activities and their turning over to Innovation (RDI) and future business opportunities. They include SMEs, big industry players and RTD performers, as well as decision makers and other important actors of the sector.  Stakeholders from other related sectors contributing to innovation dedicated to be implemented in the Construction sector are also concerned.
Purpose	Aware the building sector about the functionalities and advantages of the new generation of BEMS. for new and existing buildings, and how FIEMSER support them.
Туре	☑ Technical ☑ Marketing ☐ Training
Form	☐ Paper ☐ Presentation ☐ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☑ Other: Leaf-let
Frequency	☐ Quarterly ☐ Semi-annually ☐ ☐ Other: Every 2 years
Responsibility	☑ TECNALIA □ CSTB □ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC
Audience	<ul><li>□ Academia</li><li>☑ Researchers</li><li>☑ Other:</li><li>EC</li></ul>
Nº of Attendants	To be completed after the conference
Conclusions	To be completed after the conference

Table 11. DAR of the ECTP-E2BA-Eracobuild Conference 2011

• "FIEMSER: Energy Efficiency in Smart Residential Buildings" CIB W78 / W102 2011 paper, October 26-28 2011, Sophia-Antipolis

Event	Computer Knowledge Building - CIB W078–W1022011 joint conference <a href="http://2011-cibw078-w102.cstb.fr/">http://2011-cibw078-w102.cstb.fr/</a> 26-28 October 2011	
	Sophia Antipolis - France	
Description	Convergence, interoperability and integration of ICT are key today to face the increasing complexity of components and systems sustaining the future products and services that will be deployed in the built environment, in a knowledge-based. Increasing regulations, consideration for a sustainable development where buildings have to play a key role in satisfying societal expectations, the need to improve the competitiveness of the Building industry to drive and stimulate product, service and process innovation and deployment: all those growing priorities are to generate an impact never achieved so far in the Built environment and the Construction processes, while at the same time, will lead in a near future to unprecedented research and business opportunities for innovative companies to deliver ICT-based solutions for future so-called "smart buildings and cities", for the benefits of citizens, industry and governments.  This is why the joint organization of CIB W078 and CIB W102 conferences is to be a unique and exciting event, introducing to the broad achievements in research, development, standardisation and industrial implementation of advanced Computing, Information and Communication Technology and Knowledge Management in the Building sector, and providing an ideal forum for future collaborative innovation and creativity.	
Purpose	Promoting the FIEMSER projects results in a technological forum that involves the main stake holders in relation to ICTs and building sector.	
Туре	☑ Technical ☑ Marketing ☐ Training	
Form	☑ Paper ☑ Presentation ☐ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:	
Frequency	□ Quarterly □ Semi-annually □ Annually □ Other: Every 2 years	
Responsibility	☑ TECNALIA ☑ CSTB <b>□</b> FRAUNHOHER <b>□</b> UCDNUID ☑ ACCIONA ☑ TENESOL <b>□</b> PCL ☑ TC	
Audience	□ Academia □ Researchers □ Industry □ Other:	
Nº of Attendants	To be completed after the conference	
Conclusions	To be completed after the conference	

Table 12. DAR of the CIB W078–W1022011 joint conference

The paper has been accepted.

• "Energy and Behavioural Modelling for Managing Energy Resources in Residential Buildings" CIB W78 / W102 2011 paper - WS on EEB Data Models organized by Rogelio Segovia. October 26-28 2011, Sophia-Antipolis.

	CIB W78-W102 joint Conference – 2 <sup>nd</sup> Workshop on eeBuildings Data Models (E2BDM)
Event	http://2011-cibw078-w102.cstb.fr/
	27 October 2011
	Sophia Antipolis, France
Description	This eeBuildings Data Models workshop will gather European leaders together, many of whom run research activities under FP7, working in the area of Buildings Energy Efficiency semantic interoperability. The objective of the event is to have an overview of the mapping case, to collect current practice, and to encourage all the semantic approaches to be expressed according to ontology engineering methodologies. This is a preliminary stage towards standardisation, essential for ICT to be successful in the area.
Purpose	At this workshop the Data Model developed in the context of the FIEMSER project will be presented, as a semantic extension of standard BIM representations to deal with concepts specific to energy management systems. The related paper has been accepted.
Туре	☑ Technical ☐ Marketing ☐ Training
Form	☑ Paper ☐ Presentation ☑ Workshop ☐ Fact-sheet ☐ Email ☐ Internet ☐ Other:
Frequency	☐ Quarterly ☐ Semi-annually ☐ ☐ Other: Not yet defined
Responsibility	□ LABEIN ☑ CSTB □ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC
Audience	<ul><li>☑ Academia</li><li>☑ Researchers</li><li>☑ Other:</li><li>EC</li></ul>
Nº of Attendants	To be completed after the Workshop
Conclusions	To be completed after the Workshop

Table 13. DAR of the CIB W078–W1022011 joint conference – Workshop on Data Models

# • IRES 6th International Renewable Energy Storage Conference and Exhibition, November 28-30, 2011

Event	IRES 6th International Renewable Energy Storage Conference and Exhibition (Organizer: EUROSOLAR - the European Association for Renewable Energy) <a href="http://www.eurosolar.de/en/images/stories/pdf/Conference_Programme_IRES2011.pdf">http://www.eurosolar.de/en/images/stories/pdf/Conference_Programme_IRES2011.pdf</a> 28-30. November 2011  Berlin / Germany	
Description	The view in the professional energy storage world is that IRES has meanwhile developed into the central platform for sharing knowledge and exchanging ideas on one of the key issues of future energy supply. IRES 2010 attracted attendance from 41 countries with 600 attendees.	
Purpose	Give an overview about the current project state to the international research and renewable energy community – here especially at the energy storage field. The FIEMSER system is actually not a storage system, but FIEMSER takes through its control strategy a similar effect like conventional storage systems. On the other hand storage systems for thermal and electrical should be included in FEIMSER. We hope to find possible scientific and/or industrial cooperation partners for the further project development. Sample new ideas and approaches.	
Туре	☑Technical ☐ Marketing ☐ Training	
Form	□ Paper ☑ Presentation Workshop □ Fact-sheet □ Email □ Internet ☑ Other: Poster	
Frequency	□ Quarterly □ Semi-annually ☑ Annually □ Other:	
Responsibility	□ LABEIN □ CSTB ☑ FRAUNHOHER □ UCDNUID □ ACCIONA □ TENESOL □ PCL □ TC	
Audience	<ul><li>☑ Academia</li><li>☑ Researchers</li><li>☑ Industry</li><li>☑ Other:</li></ul>	
Nº of Attendants	Estimated 600-700 (to be updated after conference)	
Conclusions	To be updated after conference.	

Table 14. DAR of the IRES 2011 Conference

### 3.6 Standardization

Once the FIEMSER developments are validated, the FIEMSER project will contact with standardization bodies in the domain of BIM (Building Information Models) and wireless communications in order to provide them feedback about the difficulties that could be identified in the adoption of their standards and suggesting them potential improvements in future versions.

In the BIM domain, "buildSmart Alliance" (<a href="http://www.buildingsmartalliance.org/">http://www.buildingsmartalliance.org/</a>), who manages the IFC data model, and "gbXML.org" (<a href="http://www.gbxml.org/index.php">http://www.gbxml.org/index.php</a>), who manages the gbXML data model, have been identified as the most relevant organizations.

In the wireless communications domain, "IPv6 over Low power WPAN (6lowpan) - Internet Engineering Task Force (IETF) Working Group" (<a href="http://datatracker.ietf.org/wg/6lowpan/charter/">http://datatracker.ietf.org/wg/6lowpan/charter/</a>) has been identified as the most relevant organization because FIEMSER considers 6LowPAN as one of the most promising wireless communication protocol for buildings due to its compatibility with IPv6 and its low energy consumption.

## **Conclusion**

In this deliverable, we have presented the dissemination achievements over the first half of FIEMSER project. We have given details about the dissemination support materials (e.g., website, leaflet), as well as the main outcomes in terms of dissemination events (e.g., workshops, conferences). Also, we have mentioned the efforts made towards the liaison with standardization bodies. At last, we have focused on the dissemination plan for the second half of project duration.

As a final word, there are currently about 800 Google references to the FIEMSER project, which proves a significant level of visibility for the project.

# Acknowledgements

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