



ENCOURAGE

Embedded iNtelligent COntrols for bUildings with Renewable generAtion and storaGE

Grant Agreement No.: 269354

D8.6 – Standardisation and project liaison plans

Luís Miguel Pinho, Luis Ferreira

Document Number	D8.6
Document Title	Standardisation and project liaison plans
Version	1.0
Status	Final
Work Package	WP 8
Deliverable Type	Report
Contractual Date of Delivery	M24
Actual Date of Delivery	M24 - 31/05/2013
Responsible Unit	ISEP
Contributors	ISEP
Keyword List	Standards, Liaison
Dissemination level	PU



Amendment History

Version	Date	Author (Unit)	Description
0.9	29.04.2013	Luis Miguel Pinho, Luis Ferreira (ISEP)	Draft
1.0	29.05.2013	Luis Miguel Pinho (ISEP)	Incorporation of partner comments and review



Executive Summary

This document relates to the activities within task 8.2 of the ENCOURAGE project, and presents the plan and report of the ENCOURAGE liaisons with relevant standardization bodies, and with other R&D projects in related topics.



Table of Contents

1. Introduction.....	5
2. Liaison with Standardization Initiatives	6
2.1. Standardization Initiatives.....	6
2.2. Liaison Activities	7
3. Liaison with Related Projects and Initiatives	8
3.1. Related Projects.....	8
3.2. Liaison Activities	8
4. Conclusions.....	10
References.....	11



1. Introduction

The liaison activities of the project are part of task 8.2 (Standardisation, dissemination and liaison activities). The main objective of WP8 is to make relevant stakeholders aware of project results and guide the exploitation strategy of the project, being the detailed objectives:

- a) Assess the market for new product and service offerings enabled by ENCOURAGE technologies, focusing primarily on energy management, distributed generation, and electricity distribution.
- b) Specify the exploitation plans of the project as a whole and for each partner individually.
- c) Promote and disseminate the results of the project as they become available.
- d) Actively participate in exhibitions and/or organise events (workshops, special issues in magazines / journals) to disseminate the evolving project results.
- e) Contribute to relevant standardisation forums and emerging initiatives.

This document relates to objectives c) and e) above.

The standardization and project liaison activities are important activities of the project, as they allow raising awareness of the project results in the community of stakeholders, increasing the impact of the work performed, and the potential exploitation of results.

It is important to interact with standardization, policy and regulatory organizations, as well as other national or international initiatives in this area. The objective is to provide inputs towards common activities and receiving feedback, contributing to area and portfolio analyses, offering advice, guidance and receiving information.

During the first year of the project, relevant standard initiatives and related projects were identified and the necessary steps were performed to start the interactions. During the second year of the project these contacts were consolidate. This document presents the report on the performed interactions.



2. Liaison with Standardization Initiatives

2.1. Standardization Initiatives

The landscape of standardization initiatives worldwide is widespread. Not only Smart Grids is a very broad domain, but also many of the concepts vary between countries or regions, which impacts in the standardization process.

In the scope of ENCOURAGE task 2.3, related to the design of the system architecture, a review of standardization efforts was undertaken. From all the international standardization initiatives related to smart grids, the ENCOURAGE project started by focusing in the three main ones from: the International Electrotechnical Commission (IEC), the USA National Institute of Standards and Technology (NIST) and the joint work of CEN (European Committee for Standardization), CENELEC (European Committee for Electrotechnical Standardization) and ETSI (European Telecommunications Standards Institute). Later, during the second year of the project, this was enlarged to include the initiatives in Japan, under the framework of the Japanese Industrial Standards Committee (JISC).

The IEC effort on Smart Grids is structured around the Strategic Group on Smart Grid (SG3) [1], which is responsible for monitoring new ideas and technologies, capable of being the basis for new standards in the area. The group is responsible for more than 100 standards, among them being particularly relevant the IEC 61968 standard, which defines the Common Information Model and the representation of physical entities in the software model, and the IEC 62056, which defines the data exchange protocols for meter reading.

The National Institute of Standards and Technology (NIST) [2] is also putting forward an initiative to coordinate the Smart Grids' standardization process in the USA. Its efforts are coordinated by the Smart Grid Interoperability Panel (SGIP) and by the Smart Grid Federal Advisory Committee, where the first is mostly responsible for the standard definition and the second is mainly responsible for the strategy and evaluation of the NIST effort. For the particular case of ENCOURAGE this organization is endorsing efforts to standardize SEP 2.0.

The CEN/CENELEC/ETSI [3] effort started with a Joint Working Group (JWG) on standards for Smart Grids, which produced in March 2011 a report addressing the landscape of standards [4] and recommendations for standardization in Europe [5]. On March 2011, the European Commission issued a standardization mandate M/490 requesting these organizations to develop the European standards framework in the field of Smart Grids. For that purpose, the three organizations created the CEN/CENELEC/ETSI Smart Grids Coordination Group (SG-CG), based on the previous working group.



Although initiatives had started before, after the Japan Earthquake, the Japanese Industrial Standards Committee (JISC) set up the “Subcommittee on Smart Grid International Standardization” in January, 2012, to address the Japanese response to the international standardization initiatives. The initial report [6] is also in line with the initiatives of NIST and CEN/CENELEC/ETSI SG-CG.

2.2. Liaison Activities

Of the standardization initiatives listed above, ENCOURAGE addressed particularly the European framework (CEN/CENELEC/ETSI), and the CIM object model (from IEC). The goal is twofold: firstly to be able to follow with more detail the evolution of the relevant standards; and secondly to be able to present ENCOURAGE results as inputs to the standardisation process.

Therefore, in the beginning of April 2012, contacts were established with the CEN/CENELEC/ETSI Smart Grids Coordination Group (SG-CG) and with the IEC Strategic Group on Smart Grid (SG3). ENCOURAGE requested Project Liaison status with the SG-CG, to be able to observe and collaborate with the work which is being undertaken, which was accepted in June 2012.

This liaison allowed to align the work in ENCOURAGE with the work of the SG-CG, and in particular to evaluate and position the ENCOURAGE model and architecture with the SG-CG general Smart Grid Architecture Model (SGAM) [7], which was reflected in the ENCOURAGE D2.3 Deliverable “ENCOURAGE platform reference architecture” [8].

Although the connection with the IEC Strategic Group on Smart Grid (SG3) was not possible to complete, the work relating to evaluating the CIM object model led to the decision on basing ENCOURAGE messages format on CIM (IEC 61968).

Smart home and building automation topics are still not fully addressed by these reference standards, work is being performed in this regard. There are numerous standards (and de-facto standards) for this purpose, but it is not clear how these can be incorporated in an overall, holistic, scenario, which is the goal of these initiatives. The NIST framework continues to be followed, related to the potential use of the Smart Energy Profile (SEP) 2.0, to interoperate the in-building devices with the Smart Grid. Nevertheless, due to the slower than expected evolution of the process that intends to standardize SEP2.0, the ENCOURAGE project decided to in parallel leverage in an existent simpler format, the EACS (Energy Automation and Control System) protocol, originally developed in the Homeport project [9] as an interim solution. This may also turn out to be an advantage for future market opportunities, and the consortium already started efforts to the standardization of this protocol at the national level (Denmark).



3. Liaison with Related Projects and Initiatives

3.1. Related Projects

Another objective of the ENCOURAGE consortium is to interact with related projects or initiatives, for information exchange, result dissemination, feedback gathering, and fostering joint initiatives. Those contacts were explored through direct interaction of WP8 with the respective contact points of other projects. Afterwards a few selected contacts were continued by relevant tasks and partners within ENCOURAGE to perform follow-up activities.

The following relevant projects were contacted during the second year of the project:

Projects	Date
ENERSIP Project (ENERgy Saving Information Platform for generation and consumption networks) www.enersip-project.eu/	June 2012
eDIANA Project (Embedded Systems for Energy Efficient Buildings) http://www.artemis-ediana.eu/ediana_contact.php	May/June 2012
FINSENY Project (Future Internet for Smart Energy) http://www.fi-ppp-finseny.eu/	Nov 2012
Internet of Energy for Electric Mobility http://www.artemis-ioe.eu	Nov 2012
eGotham Project	Nov 2012
Arrowhead Artemis AIPP	Mar 2013

Table 1 – List of projects connections

3.2. Liaison Activities

During the first year of the project, a data base of potential contacts has been created and ENCOURAGE approached several relevant projects and initiatives.



During the second year of the project, talks and connections were performed with the projects in Table 1. This allowed to identify commonalities and differences between the approaches.

In particular, ENCOURAGE adopted the concept of Cells and MacroCells, from eDIANA. Nevertheless, contrary to eDIANA, ENCOURAGE only specifies the interfaces provided by the building gateways and the functions of the devices themselves, and leaves the implementations completely out of scope. ENCOURAGE allows multiple hooks to be provided for a single Cell or MacroCell, being the ENCOURAGE platform capable of abstracting a single domain from the multiple hooks. Also, ENCOURAGE supports systems where Cells individually have a connection to the grid, thus holding a contract, whilst, if also arranged in a MacroCell, try to optimize in conjunction the local efficiency of energy.

Since ENCOURAGE abstracts from the implementation inside the buildings, and allows mixing multiple independent gateways in the same domain, it provides a dimension not present in ENERsip or FINSENY.

The eGotham project is using the same architectural approach as ENCOURAGE (message-based middleware) and technology (RabbitMQ), therefore an exchange of information was performed between both projects. It is expected that this connection will be continued in the third year of ENCOURAGE.

Finally, the results of ENCOURAGE are foreseen to be used in the scope of the Artemis Arrowhead AIPP, which started recently, and where some partners of the consortium continue to collaborate. It is expected that a strong connection between both projects will be part of the work in Year 3.



4. Conclusions

The purpose of the liaison activities is to ensure that the project will use the most relevant standards and existing results, so the work performed has the maximum potential impact to relevant stakeholders. These activities will provide a bidirectional flow of information between the project consortium and the external entities, allowing both to receive information and inputs to support the projects' technical tasks and to present the projects' results as inputs for standardisation and other activities.

This document presented the performed activities in the second year of the project in this regard.



References

- [1] <http://www.iec.ch/smartgrid/development/>
- [2] <http://www.nist.gov/smartgrid/>
- [3] <http://www.cen.eu/cen/Sectors/Sectors/UtilitiesAndEnergy/SmartGrids/Pages/default.aspx>,
<http://www.cenelec.eu/aboutcenelec/whatwedo/technologysectors/smartgrids.html>,
<http://www.etsi.org/website/Technologies/SmartGrids.aspx>,
- [4] Final report of the CEN/CENELEC/ETSI Joint Working Group on Standards for Smart Grids, available online: <ftp://ftp.cencenelec.eu/CENELEC/Smartgrid/SmartGridFinalReport.pdf>, last accessed April 2013.
- [5] Recommendations for smart grid standardization in Europe Standards for Smart Grids, available online: <ftp://ftp.cen.eu/PUB/Publications/Brochures/SmartGrids.pdf>, last accessed April 2013.
- [6] Subcommittee on Smart Grid International Standardization Report, Japanese Industrial Standards Committee, December 2012
- [7] CEN/CENELEC/ETSI, Smart Grids Coordination Group Technical Report, Reference Architecture for the Smart Grid, Version 2.0, August 2012
- [8] ENCOURAGE Deliverable 2.3, “ENCOURAGE platform reference architecture”, September 2012
- [9] J. Brønsted, P.P. Madsen, A. Skou and R. Torbensen: “The HomePort System”, IEEE Consumer Communications and Networking Conference (CCNC 2010), pp. 1 – 5, January 2010