

Deliverable 9.3.1

First draft of the dissemination and exploitation plan



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Author(s)	Jörg Benze – T-Systems Andrea Schröder – FGH
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Executive Summary

This deliverable provides an overview and first report about the dissemination and exploitation activities. Furthermore, a report about the cooperation with the OS4ES User group is given:

- Section 1 provides an introduction and shows the scope of this document.
- Section 2 describes the dissemination activities that the OS4ES project undertakes:
 - Project website,
 - OS4ES User Group,
 - publications in professional journals and conference proceedings and
 - participation in conferences and exhibitions.
- Section 3 describes the exploitation activities and shows the first draft of the exploitation plan.

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1 Introduction

Aim of this deliverable is to give an overview and first report about the dissemination activities, to provide a first exploitation plan and to report about the cooperation of the OS4ES consortium with the OS4ES user group.

1.1 Scope of the document

This deliverable features the dissemination activities undertaken during the first year of the project and planned for the future (section 2).

Special emphasis is given to the user-group activities and the impact of the user group on the progress of the project achieved so far (section 3).

Additionally, this deliverable presents a first draft of the exploitation plan for project results based on the preliminary exploitation plan provided in the DoW [1] (section 4).

1.2 Notations, abbreviations and acronyms

OS4ES	Open System for Energy Services
UG	User Group
DoW	Description of Work
VDE	V erband d er E lektrotechnik E lektronik I nformationstechnik e.V. (Association for Electrical, Electronic & Information Technologies)

Table 1 : Acronyms list

2 Dissemination activities

Dissemination in the OS4ES project takes place in various ways:

- Project website,
- OS4ES User Group,
- publications in professional journals and conference proceedings and
- participation in conferences and exhibitions.

Results of the project are disseminated via the project website presenting the project's key features and the public deliverables. This website has been continuously updated up to now and will be continuously updated until the end of the project.

Moreover, the project is promoted by publications in journals and by participation of OS4ES consortium partners in conferences.

Besides, a user group of potential users of an Open System for Energy Services has been formed. The members have been invited to physical meetings and web meetings in which the project results obtained so far have been presented.

2.1 OS4ES project website

2.1.1 Public OS4ES website

2.1.1.1 Objective of the public website

At the start of the project an OS4ES website has been set up (see <http://www.OS4ES.eu>). In accordance with the development of the project the contents of the website have been adjusted.

The public-webserver-system makes the project visible to the outside world. It gives a general overview of the OS4ES project, allows interested parties to contact the project manager in order to receive the latest project results and/or to join the OS4ES user group. Technically, the web-page has been optimized for media PCs/Tablets, Smartphones and Smart-TVs. The objective was to design a clearly structured, appealing website to represent the project activities. The following screenshot (Figure 1) shows the latest version of the home page with the navigation bar on the left side.

2.1.1.2 Description of public website



Figure 1 : Home page of the public OS4ES website

This navigation bar leads to subpages with the content described below:

- **Home** introduces the OS4ES project mentioning the initiator, project scope, duration and the main aim of the project.
- **Objectives** illustrate and describe the OS4ES targets in detail.
- **Project-Plan** gives an approach for fulfilling the OS4ES project targets and provides a detailed description of the nine work packages (WPs) within the submenus.
- On the **Partners** site all involved partners are listed with organization name, contact person, logo, corresponding sector and nationality. The logo itself is linked to the partners' home page.
- The **User-Group** section shows logos of involved organizations in the user group and includes a possibility to register as user group participant.
- The **News & Events** section holds up-to-date information about performed and planned activities.
- The **Disseminations** site implies already exploited dissemination channels und shows several pictures of different events.
- The **Sitemap** provides an overview of the pages for better navigation.
- **Contact** site gives information about the project manager and contact information of the responsible persons. In addition, it provides a contact form for interested parties.
- **Imprint** fulfils the legal guidelines for operating a website.

Via the Members Area "Login" the OS4ES user group members get access to their private user group space.

2.1.1.3 Next Steps for the OS4ES Public Website

To expand the Project webpage following next steps are planned:

- Refresh the page in accordance with the current results and activities.
- It is intended - apart from the OS4ES-project results - to provide information generated by other sources related with the project objectives (other event, news, related ongoing projects).
- At the moment OS4ES is the first hit in a search with Google or Bing. We will optimize for some other searching engines to increase the visibility of the website.
- Switch on Website activity monitoring (i.e. Google analytics).

2.1.2 OS4ES User group website

The OS4ES user group web site is a web space service for the closed user group of the OS4ES User Group based on a SharePoint Team space. It is used for

- the exchange of organizational information within the UG,
- the exchange of documents between the consortium and the OS4ES User Group and
- offline discussion.

The screenshot shows the entry page of the OS4ES User Group website. The page has a dark green header with the OS4ES logo and the text 'OS4ES User Group Home'. Below the header, there is a search bar and a navigation menu on the left. The main content area is divided into several sections:

- Welcome to OS4ES:** A section with a heading and a paragraph describing the project's funding and duration.
- OS4ES in a nutshell:** A section with a heading and a detailed paragraph explaining the project's goals and objectives.
- Calendar:** A table showing a 'User Group Meeting' on 5/22/2015 from 9:00 AM to 10:00 AM.
- Getting Started:** A section with four links: 'Share this site', 'Change site theme', 'Set a site icon', and 'Customize the Quick Launch'.

Title	Location	Start Time	End Time	All Day Event
User Group Meeting	Web meeting	5/22/2015 9:00 AM	5/22/2015 10:00 AM	

Figure 2 : Entry page of the User Group OS4ES non-public website

2.1.2.1 Current status of the OS4ES User group website

The member-webserver-system acts as a 'data-hub' and enables a rapid exchange of documents between consortium members. A file-sharing system has been set up along with an OS4ES WIKI that holds all relevant project details and links to the file-sharing system. This allows an effective co-operation with the consortium. Furthermore, the user group receives up-to-date information on the project and is able to interact with the OS4ES consortium. Also the EC has access to the complete list of OS4ES project deliverables.

The structure and content of the OS4ES user group website includes:

- a description of all work packages and tasks with the corresponding deliverables (abstract of the DOW),
- a document library (i.e. final deliverables, meeting minutes of the UG Meetings),
- a calendar,
- a contact list of the OS4ES user group,
- a discussion section.

At the moment the library includes the documents which are shown in Table 2. All these documents are available for the UG and can be downloaded.

 D1.1: Requirement Specification For An OS4ES (final)	5/5/2015 10:27 AM
 D1.2: OS4ES system architecture, component requirements and communication infrastructure	5/5/2015 10:27 AM
 D2.1: Requirement specification for communication infrastructure	5/5/2015 10:29 AM
 D4.1: The OS4ES Security and Privacy Concept and the Distributed DER Registry System Architecture	5/22/2015 4:08 PM
 D5.1: Algorithms for DER clustering and management for network operation and market participation	6/9/2015 9:11 AM
 OS4ES 1st User Group Meeting 14-11-21 Slides (Webinar)	5/29/2015 12:37 PM
 OS4ES 2nd User Group Meeting 14-11-21 Minutes	5/29/2015 12:38 PM
 OS4ES 2nd User Group Meeting 15-01-28 Minutes	5/29/2015 12:39 PM
 OS4ES 2nd User Group Meeting 15-01-28 Slides	5/29/2015 12:39 PM
 OS4ES 2nd User Group Meeting 15-02-20 Minutes	5/29/2015 12:39 PM
 OS4ES 2nd User Group Meeting 15-04-23 Slides DemandResponse	5/29/2015 12:40 PM
 OS4ES 2nd User Group Meeting 15-04-23 Slides MBGM	5/29/2015 12:40 PM
 OS4ES 5th User Group Meeting 15-05-22 Minutes	6/9/2015 9:00 AM
 OS4ES Conference Post of ETG Congress 2015 in Kassel (german)	5/5/2015 10:28 AM
 OS4ES_UserGroup_D4.1_Registry	5/29/2015 12:15 PM
 OS4ES_UserGroup_Registry_DER-Energy-Services_Draft	5/29/2015 12:17 PM
 Project Presentation of OS4ES (Poster, german)	5/5/2015 10:26 AM
 Use Case Questionnaire	5/29/2015 12:16 PM

Table 2 : Document downloads for the OS4ES User Group

Every member of the OS4ES User group is listed in the contact list of the UG Web site. In this way, partners or UG members can find each other.

Figure 3 represents an extract of the OS4ES User group contact list. In addition to the data contained below the complete list contains the business phone and mobile phone number, the email address and the company address.

First name	Last name	Company
Hauke	Beeck	Vattenfall
Henry	Cheung	Eneco
Michael	Conrad	IDS GmbH
Henry	Dawidczak	Siemens AG
Thomas	Fischer	E.ON New Build & Technology GmbH
Carsten	Franke	ABB
Sebastian	Gerhard	Vattenfall
John	Gillerman	GRID CLOUD SYSTEMS
Torsten	Göbel	DVGW Service & Consult GmbH
Andrej	Grguric	Ericsson Croatia
Gunter	Grosch	Senertec
Onnen	Heitmann	Hamburg Energie
Christian	Hübner	Institut für Automation und Kommunikation e.V. Magdeburg
Darko	Huljenic	Ericsson Croatia
Knud	Johansen	Energinet.dk
Wolfgang	Klinker	b-Quadrat Vertrags GmbH & Co. KG
Holger	Krings	Phoenix Contact
Prodromos	Makris	Computer Technology Institute (CTI)
Martin	Näf	ABB Switzerland Ltd.
Michael	Niemann	MVV
Jan	Sudeikat	Hamburg Energie
Holger	Wiechmann	EnBW Energie Baden-Württemberg AG

Figure 3 : Extract of the OS4ES User Group address list

2.1.2.2 Planed activities of the OS4ES User group website (nonpublic)

Following next steps are planned for the Project webpage:

- the entire content is kept permanently up to date,
- future final versions of the deliverables are provided in the library for download and
- future activities of OS4ES User Group will be planned (calendar) and documented (minutes).

2.2 User Group

Already in the stage of project proposal setup the consortium analyzed which companies might be interested in the OS4ES project and be potential customers of the project results. The massive interest of the approached companies resulted in the establishment of a preliminary OS4ES stakeholder Industrial User Group. Nine companies have at this time already declared their interest (see Table 3).

Company	Type of company	Country
Energinet.dk	TSO	Denmark
Ericsson Croatia	telecommunication provider	Croatia
Hamburg Energie	municipal energy provider	Germany
Phoenix Contact	industrial company	Germany
Senertec	CHP manufacturer	Germany
IDS	control system provider	Germany
E.ON Ruhrgas	supply company	Germany
IFAK	Institute for Automation and Communication	Germany
ABB	research centre	Switzerland

Table 3 : Preliminary list of User Group members

Out of this group the following five companies have signed letters of intent, which had been attached to the DoW [1]: ABB, Hamburg Energie, IDS, Senertec and IFAK.

During the OS4ES project start up until now the existing preliminary OS4ES user group has been transformed into a permanent user group and has been further extended with companies interested in the project's scope and results (see Table 4). These new members of the User Group have been attracted by

- participation in conferences,
- existing business contacts of consortium partners and
- the OS4ES web site.

Company	Name of UG member	Country	Main interest
ABB	Carsten Franke, Martin Näf	Switzerland	Communication protocols as well as lab and field tests
b-Quadrat Vertrags GmbH % Co. KG	Wolfgang Klinker	Germany	General interest in the project
DVGW Service % Consult GmbH	Torsten Göbel	Germany	General interest in the project
E.ON New Build & Technology GmbH	Thomas Fischer	Germany	General interest in the project
EnBW Energie Baden-Württemberg AG	Holger Wiechmann	Germany	General interest in the project
Eneco	Henry Cheung	The Netherlands	General interest in the project
Energienet.dk	Knud Johansen	Denmark	Generic interface for DER components, Open System for Energy Services
Ericsson	Andrej Grguric, Darko Huljenic	Croatia	Communication protocols, Distributed Registry System, Open Middleware Implementation
Grid Cloud Systems	John Gillermann	US	Communication protocols
Hamburg Energie	Onnen Heitmann, Jan Sudeikat	Germany	Generic interface for DER components, Distributed registry system and Open System for Energy Services
IdE – Institut dezentrale Energietechnologien	Nermin Brgulja	Germany	General interest in the project
IDS	Michael Conrad	Germany	Communication protocols, Registry, Generic interface for DER components and field tests
Institut für Automation und Kommunikation e.V.	Christian Hübner	Germany	Communication protocols, Distributed Registry System, Open Middleware Implementation

Company	Name of UG member	Country	Main interest
Computer Technology Institute	Prodromos Makris	Greece	ICT-Based Solutions for the Smart Energy Grid in general (The Computer Technology Institute is a project partner of the EU FP7 research project VIMSEN)
MVV	Michael Niemann	Germany	Field tests
Phoenix Contact	Holger Krings	Germany	Communication protocols, Generic interface for DER components, Registry
Senertec	Gunter Grosch	Germany	Generic interface for DER components, Communication protocols and lab and field tests
SIEMENS	Henry Dawidczak	Germany	Registry, Data model
Vattenfall	Sebastian Gerhard, Hauke Beeck	Germany	General interest in the project

Table 4 : Current list of UG members

Members of the user group have been invited to physical meetings and web meetings in which the results of the project have been presented (see Table 5).

Number of UG meeting	Date/Type	Scope	UG members participating
1	21.11.2014 / web meeting	Introduction to OS4ES Report on D1.1 Identification of benefits for UG members	H. Krings (Phoenix Contact) G. Grosch (Senertec) H. Kirrmann (ABB)
2	28.01.2015 / physical meeting in Hamburg, Germany	Presentation of the results of D1.1 and D2.1 Impact of the UG	H. Beek G. Grosch O. Heitmann and J. Sudeikat (Hamburg Energie) H. Krings (Phoenix Contact) H. Schäfer (HUAS) H. Wiechmann (EnBW) per web meeting: M. Conrad (IDS) H. Dawidczak (SIEMENS) C. Franke (ABB) U. Hofmann (University of Salzburg)
3	20.02.2015 / web meeting	Sequence diagrams of the following UCs annotated with communication requirements: Volt/VAr, Dwelling information exchange, Primary control	M. Conrad (IDS) J. Sudeikat (Hamburg Energie)
4	24.4.2015 / web meeting	Presentation of the use cases "Marketization of balance group management" and "Demand response"	H. Cheung (Eneco) M. Conrad (IDS) H. Dawidczak (SIEMENS) H. Krings (Phoenix Contact) H. Wiechmann (EnBW)
5	22.05.2015 / web meeting	Registry and Energy Services	H. Cheung (Eneco) M. Conrad (IDS) H. Dawidczak (SIEMENS) H. Wiechmann (EnBW)

Table 5 : Participation in conferences

At the first web meeting in November 2014 and at the physical meeting in Hamburg in January 2015 it has been agreed between participating user group members and the OS4ES consortium to go for monthly web meetings (every 3rd Friday in a month). These web meetings are documented in the calendar of the UG website. A week before the scheduled meeting the consortium sends the agenda along with a Doodle to check the availability of UG members for the next meeting. Given that at least 2 members intend to participate, the access data for the web meeting is sent 2 days in advance. The slides presented at the meeting as well as the minutes of the meeting are uploaded to the User Group web site and the UG members are notified of those documents by email.

The decision to go for monthly web meetings has resulted in regular web meetings since the physical meeting in Hamburg except for one web meeting in March which had to be cancelled because of lack of participants and the 19th June web meeting that needed to be postponed.

Apart from the regular monthly web meetings a web meeting dedicated to communication protocols has been conducted with SIEMENS at 7th May 2015. In this meeting it has been analyzed with two XMPP specialists from SIEMENS which implications it would have on the detailed OS4ES architecture when using the XMPP approach suggested for standardization by TC57 WG17. From 22nd – 26th June IT4 and FGH participated in an IEC 61850 meeting in Frankfurt where discussions with these specialists have been continued and the OS4ES draft DER semantic data model has been presented both in a Task Force meeting of WG17 and to the whole WG17 group.

Interaction with the user group has not be limited to physical meetings and web meetings but has also been accomplished by providing a specific user group section on the website through which this group of people is provided the latest information on the project results and where they find a platform for discussion and feedback.

Besides, consortium partners also contacted members of the user group by phone on a bilateral basis to discuss special issues of interest for this user group member and to giving the project work for a better exploitation of results.

2.3 Publications and conference participations

The following sub-chapters give an overview of

- articles that will be published in professional journals,
- presentations that have been given and are planned to be given at conferences and
- conferences and exhibitions that are planned to be attended by OS4ES partners.

At the public OS4ES website the published documents are listed and can be downloaded.

2.3.1 Publications in professional journals

In the first year one publication for a journal has been written and submitted to the editor end of March. The publication date will be in autumn 2015.

Journal	Title of publication	Date of publication	Authors
at (German magazine)	OS4ES – Open System for Energy Services	Autumn 2015	Andrea Schröder (FGH) Martin Zanner (FGH) Christoph Kahlen (FGH)

Table 6 : Publications in journals

The following publications in journals are planned:

Journal	Title of publication	Date of publication	Authors
PACWorld (IEC 61850 magazine)	OS4ES Communication protocol	Autumn 2015	Stjepan Sucic (Koncar) Markus Breuers (FGH)
PACWorld (IEC 61850 magazine)	OS4ES Data model for Energy Services	Winter 2015	Christoph Brunner (IT4) Andrea Schröder (FGH)
VDE Dialog (German magazine)	Open System for Energy Services (OS4ES) - Entwicklung einer Service Delivery Plattform für Energiedienstleistungen	Spring 2016	Jörg Benze (T-Systems) Andrea Schröder (FGH)
IEEE Transactions on Sustainable Energy	TBD	TBD	Antonis Papanikolaou (Hypertech), others TBD
IET Generation, Transmission & Distribution	TBD	TBD	Antonis Papanikolaou (Hypertech), others TBD
IEEE Transactions on Power Systems	TBD	TBD	Antonis Papanikolaou (Hypertech), others TBD
ew (Journal for the power industry)	TBD	TBD	Andrea Schröder (FGH), others TBD

Journal	Title of publication	Date of publication	Authors
etz (Journal for Electrical Engineering and Automation)	TBD	TBD	Andrea Schröder (FGH), others TBD
IEEE Transactions on Smart Grid	TBD	TBD	TBD
IEEE Smart Grid	TBD	TBD	TBD
IEEE Power and Energy Magazine	TBD	TBD	TBD
Energy and Buildings (Elsevier)	TBD	TBD	TBD
Energy Efficiency Journal	TBD	TBD	TBD

Table 7 : Planed publications in journals

2.3.2 Participation in conferences

OS4ES partners took part in the following conferences:

Conference	Title of publication	Type of publication	Date	Presenter
3. workshop of VDE focus group "Energy Information Networks and - Systems" Frankfurt, Germany	OS4ES-project	Presentation	22.09.2014	J. Benze (T-Systems)
VDE Congress Frankfurt, Germany	Open System for Energy Services (OS4ES) - Die Plattform im Energiebereich	Booth in the exhibition hall	20.- 21.10.2014	J. Benze and B. Sigmund (T-Systems)
IEC 61850 Europe 2014 Prague, Czech Republic	IEC 61850 and DER – Successfully implementing IEC 61850 as the standard communication protocol for distributed energy resources	presentation	14-16 October 2014	Stjepan Sucic
ETG Fachtagung Kassel, Germany	OS4ES – Offenes System für Energiedienstleistungen	poster presentation and paper	25.- 26.03.2015	Wolfgang Renz (HUAS) Martin Zanner (FGH)
PowerTech Eindhoven, The Netherlands	OS4ES: Increasing awareness of DG-RES and demand response processes by registry enabled services	Paper and presentation	29.6. – 02.07.2015	Gerben Venekamp, René Kamphuis and Joost Laarakkers (TNO) Michiel van den Berge (Stedin)
PAC World Glasgow, Scotland	IEC 61850 beyond the substation applied to the EC project OS4ES	presentation	29.06. – 02.07.2015	Christoph Brunner

Table 8 : Participation in conferences

Currently the following conferences are in the focus of the OS4ES consortium. As shown in Table 9, abstracts and full papers, respectively, have already been submitted for these events.

Conference	Title of publication	Type of publication	Conference Date	Presenter	Status
IEEE CAMAD 2015 Guildford, UK	Flexibility provision in the Smart Grid era using the USEF and OS4ES frameworks	paper and presentation	07.-09.9. 2015	M. van den Berge B Derksen (Stedin), A. Papanikolaou, Ch. Malavazos (Hypertech)	Full paper submitted
ETG Congress 2015 Bonn, Germany	DER Registry System as an infrastructural component	paper and presentation	03.-04.11. 2015	T. Dethlefs and W. Renz (HUAS), Ch. Brunner (IT4)	abstract accepted full paper in preparation
IECON 2015 Yokohama, Japan	An architecture for a distributed smart grid registry system	paper and presentation	9.-12.11. 2015	T. Dethlefs and W. Renz (HUAS),	Full paper submitted
D-A-C-H Konferenz Karlsruhe, Germany	Energy Service Description for Capabilities of Distributed Energy Resources	paper and presentation	12.-13.11. 2015	T. Dethlefs and W. Renz (HUAS), Ch. Brunner (IT4), A. Schröder (FGH)	Full paper submitted
ISGT 2015 Warschau, Poland	Registry and usage of energy services	presentation	mid October 2015	TNO, Stedin	Planned to submit
SmartGrid Com2015 Miami, US	Open System for Energy Services (OS4ES)	paper and presentation	02.-05.11. 2015	J. Benze (T-Systems)	Full paper submitted
IEEE-PES	general meeting	paper	18-21.06. 2016	TNO, Stedin	Planned to submit
Distributech	Improve the integration of DER Systems in the grid through Energy Services	abstract	09.-11.02. 2016	Ch. Brunner	Waiting for acceptance of abstract

Table 9 : Planned participation in conferences

Besides, various other events are in the focus of the OS4ES project, e.g. CeBIT, CIRED Annual Conference & Exhibition, CIGRE Annual Sessions, PSCC, ICT Event by the EC, etc. However, concrete steps for these events have to be defined in the next OS4ES project meetings.

3 Exploitation activities

One of the main outcomes of the OS4ES is the continued usage of the elaborated results and the knowledge gained from project. The results of this research must be integrated into further products and services of the OS4ES partners and the members of the OS4ES User Group. The following table gives an overview about the exploitable results and their exploitation potential in the draft of the OS4ES exploitation plan. Development, testing and launch of new and innovative products and services are medium-term activities of the participating partners, which take a few years to complete. For this reason at the present time only the exploitation potential of emerging research results is shown in this deliverable.

3.1 Draft of the OS4ES exploitation plan

No.	Project Exploitable Result	Responsible Partner(s)	Product Type / Exploitation Potential	Open Source	Time To Market
1	Contribution and implementation of the OS4ES interface in the respective standardization bodies	FGH, it4, KONCAR	Standardization The technical expertise and results of the OS4ES project concerning the generic registry interface and the web based communication protocol will be brought in IEC 61850 TC57 WG17 and will be actively promoted by FGH, IT4 and Končar.	Yes (however standards are commercial products)	6 months
		TNO	TNO is active in Smart Grid and e-Mobility standardization and will bring in concepts and ideas from this project where applicable.		
		T-Systems	T-Systems holds the coordinator role of the VDE working group "Energy Information Networks and -Systems" and is furthermore strong involved in the German and European standardization process with many committee memberships, e.g. "CEN/CENELEC/ETSI Smart Grid Coordination Group (SG-CG)". It will bring in the new concepts and ideas from this project to the committees and support an exchange of knowledge between the project and the European smart grid standardization process.		
		FGH	In the IEC 61850 TC57 WG17 meeting at 22.06.15 in Frankfurt the current data modelling approach for DER systems and the Registry has been presented at the meeting of TF90-15 "DER Grid Integration		

			<p>consulting.</p> <ul style="list-style-type: none"> Tailoring the open-source web based communication protocol of the OS4ES project according to the needs of concrete future customers with financial contribution of future customer(s). 		
3	Generic information model based on the IEC 61850 standard	HUAS	<p>Training and Consulting</p> <p>The IEC 61850 Standard is part of the teaching in the Courses in Electrical Engineering and Smart Grid Technologies. Bachelor, Master, PhD. students and postdocs will use the OS4ES WP1/2 project results within R&D projects for several companies.</p>	Yes	0 month
4	Requirements and Test specifications as well as implementation of the OS4ES Registry and the OS4ES Middleware	HUAS	<p>Software & Documentation</p> <p>Based on the outcome of WP1-2 and WP4-6 EMS components like VPP/DSM-Algorithm-based services or DB services will be constructed or extended in projects and cooperation with regional companies and universities with Bachelor, Master, Ph.D. Students and post-docs.</p> <p>In particular these results will be used in the infrastructure of the smart grid lab as part of the Hamburg Energy Campus within which part of WP7 will be carried out.</p>	Partly	6 month
5	Semantic Based DER Management Middleware	HYPERTEC	<p>Software & Documentation</p> <p>HYPERTECH will further enhance and incorporate the OS4ES Semantic in its mainstream line of products for automation, DER management and smart grid interoperability. These products and services will address both commercial and private customers. HYPERTECH expects that OS4ES components will strengthen its software and consultancy offerings within a number of key areas for Internet of Things:</p> <ol style="list-style-type: none"> Data Fusion & Analysis Cloud Computing – “Big data” Device Connectivity Efficient IoT Architectures End user services <p>Finally, HYPERTECH also intends to sell consultancy services around the OS4ES platform to build tailored solutions for</p>	Yes	9 month

			customers.		
6	OS4ES Common Information Model	HYPERTECH	<p>S/W & Documentation</p> <p>HYPERTECH will exploit OS4ES CIM in order to enhance their commercial service package for DSM/DR. The tools for the aggregator/utilities developed in the project will be offered as part of the HYPERTECH's service package for Demand Side Management / Demand Response and overall grid optimization. Other project modules can be offered as part of this as per other partners' and customers' wishes. This package will be marketed mainly to Utilities/DSOs, ESCOs and Facility Managers both in Greece and along the EU. HYPERTECH will also investigate the possibility of providing the module as a service for commercial cases where other partners want to exploit their results.</p>	Yes	6 months
		HYPERTECH	<p>HYPERTECH plans to use the OS4ES CIM in two exploitation routes: i) build upon the gained know-how in order to prepare its service portfolio to Smart Grid actors and make it compatible with upcoming standards, ii) leverage the model in further R&D project proposal to improve model maturity and completeness.</p>		
7	Business use case scenarios, generic information model and distributed registration	It4	<p>Training and Consulting</p> <p>it4power will expand its IEC 61850 and Smart Grid training portfolio based on the achievements of the project. Based on the experience, further exploitation of the project results will be done through the world wide consulting activities of it4power.</p>	No	0 month
8	DER management / grid optimisation	Stedin	<p>Service</p> <p>Stedin will integrate the OS4ES results in order to provide improved demand side management / demand response and overall grid optimization for its customers and help to reduce their investment costs for their operational activities.</p> <p>This exploitation goal is investigated in the field test, the development of the field</p>	no	6 months

			test site is still in a preliminary phase.		
		TNO	Energy Services TNO will integrate the concept and definition of energy services as offered by the DER systems to the flexibility aggregator into the framework of their existing demand response technologies.	no	
9	DER Management Prototype applications	TECNALIA	S/W & Documentation TECNALIA will explore the possibility to integrate/further develop the prototype applications for aggregator companies serving either as simulator for off-line studies aimed to analyze customer portfolio, business opportunities, etc., or as core decision support system.	no	24 month
		TECNALIA	TECNALIA will explore the possibility to exploit the software prototype application developed for the aggregator in the frame of the project. This application will manage the DER resource services registered in the OS4ES system accordingly to the requests issued by the smart grid stakeholders so as to optimize its portfolio (BRP) or to relief grid congestion and provide frequency and voltage support to the grid (DSO/TSO). Therefore the added value of the aggregator in the market structures will be enhanced by the provision of these new services by means of DER resources, which is something that nowadays is missing due to the lack of harmonized DER management tools. For this purpose, different business models are being considered, as offering this application as software as a service or as a licensed application.		
10	OS4ES open source oriented middleware	TNO	Open Source OS4ES software TNO will promote from their experiences (e.g. in Foundations or Alliances) that this OS4ES Open Source software will be published and as far as possible also maintained	Yes	3-12 months
11	Distributed DER Registry concept knowledge	TNO	TNO plans to use the Distributed DER Registry concept knowledge in related areas. Distributed Registry architecture and algorithms for matching of DER	No	3 – 18 months

12	Development of the technology for open cloud based service delivery platforms for energy services	T-Systems	capabilities will be used in scientific and consultancy activities. T-Systems MMS will explore the resulting knowledge regarding the architecture and concepts of service delivery platforms for energy services and the corresponding security concepts in further project for custom software.		6 month
	Connection to the internet of things	T-Systems	The T-Systems wants to specialize in particular towards Internet of things. The experiences and results of the project play an important role in this direction. In particular the experience in the analysis of risk and security aspects can be incorporated into in further work. Therefore, the OS4ES employee of T-Systems will inform more T-System colleagues about their experiences and approaches.	No	12 month

Table 10 : Draft of the OS4ES exploitation plan

3.2 Perspectives of a detailed exploitation plan

After running the project for roughly one year we can update the preliminary exploitation strategy of the DOW (see 3.1). The last section gives an overview about the exploitation activities and points out the exploitation potential of emerging research results. This chapter aims to consider which information could be provided in the exploitation plan up to at the end of the project in month 36 and furthermore which activities should be planned to reach this purpose.

For this, it is useful to consider the following points:

1. Evaluation and definition of the potential markets (what are the customer's needs that are satisfied by OS4ES results?) should help to validate and define the OS4ES functionalities to generate a value proposition and fulfill the expected benefit for the customers. Furthermore an identification of competitors (are customer needs satisfied by existing products in the market?) should help to sharpen the value proposition of OS4ES. For processing this aspect the cooperation with the user group is very important.
2. A definition of actions to achieve potential markets is useful for the exploitation of the OS4ES project. This aspect is directly associated with dissemination activities (scientific and commercial). Regarding this point activities with more commercial aspects are especially interesting, in which potential stakeholder could participate (round tables, open discussions, etc.)
3. One year after the project started, partner have gathered more knowledge about project objectives and potential results, so based on the more accurate information about partner's exploitable intentions an individual exploitation strategy can be developed from now on. To organize the aspects like foreseen income, foreseen expenditures, calculation of the expected profitability indexes (revenue model), and the use of the Business Model Canvas seems to be useful, to evaluate the possibilities of different exploitation scenarios.

References

- [1] Description of Work OS4ES