Report on the interaction with the standardization system

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Executive Summary

This document specifies an action plan for the next tasks on Communication with technical standardization bodies (Subtask 8.1.1) and Contribution to standardization (Task 7.5).

Following the main conclusions of deliverable D2.2 regarding the European and international standardization landscape in relation to the OPENTUNITY project objectives, this document describes the actions that may be carried out to disseminate the project towards possible future standardization activities.

Finally, it establishes a schedule for the development of the proposed actions and specifies the relevant responsibilities.

Copyright statement

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2 Introduction

2.1 Purpose of the document

This document aims to define a strategy for the next standardization related tasks (T8.1.1 Communication with technical standardization bodies, and T7.5 Contribution to standardization) and to establish a schedule for the development of the proposed actions and those responsible for them.

It will be updated with the progress of the different actions and its outcomes and will be the basis for the part of Deliverable D7.2 (Replication strategy, M48) related to task T7.5.

2.2 Scope of the document

As shown in the conclusions of Deliverable D2.2 "Standardization landscape and socioeconomic context", there are several European and international technical committees, standards, and standards under development, related to OPENTUNITY project that may be helpful for the different work packages. Several actions were also introduced to interact with the standardization system for disseminating the project results, as well as to contribute to current, under development or future standards.

This document defines a strategy for the contribution to standardization from OPENTUNITY project, considering the most relevant technical committees that were identified and the different possible collaboration activities. It includes the steps towards a successful contribution to standardization, the actions for its implementation, what is needed from OPENTUNITY partners and a tentative schedule. It will be updated with the progress of the different actions and its content will be included as a part of Deliverable D7.2 (Replication strategy, M48). The schedule of the actions described in this document is open to changes according to the progress of the project and the standardization landscape.

2.3 Structure of the document

This document presents the definition of the strategy to be followed in order to achieve a successful contribution to standardization (Chapter 3), and its foreseen implementation (Chapter 4), followed by the conclusions of the report (Chapter 5).

References and acronyms can be found in Chapter 6.

3 Definition of the strategy

The following subjects shall be defined:

3.1 First contact with standardization technical committees

The objective is to raise awareness about OPENTUNITY among the relevant standardization committees and to ease the subsequent contacts. Different categories of stakeholders at European/international level are present in these committees, so the standardization system is used as a key dissemination channel.

Since the first version of this document, several committees has been asked for feedback, to gather any view, opinion or advise about the project, standardization possibilities or needs. Additionally, these first contacts are useful to determine the best path towards the initiation of a standardization process.

This first step comprised the selection of the technical committees to be contacted and the content to be disseminated, which was agreed with the consortium. This first step is expected to ease future contacts if this process is launched within a standardization committee.

The selected Technical Committees for this first contact, as well as the new committees that have been contacted afterwards, are listed in *Table 1 later in this document.*

In case new relevant committees arise, they will be contacted in the same way.

3.2 Subsequent interactions with the technical committees

Different relationships can be stablished with the relevant CEN/CENELEC, ISO/IEC technical committees. Two factors determine the more suitable interactions: the impact/relevance of the standardization works of the committees and the possibility of initiating a standardization process within a committee or a standardization workshop. The different ways of interaction with the committees include:

3.2.1 Follow-up the activity of the relevant standardization committees.

This allows to detect the start of standardization works that can be relevant for OPENTUNITY and the progress of significant standards under-development. This is achievable through a periodical monitoring of the standardization activity made by UNE.

At the moment of this revision of the document (M26), this monitoring has led to un updated list of relevant standards (shared in M24), and the detection of the standardization activities relating important topics for the project such as the Digital Product Passport (DPP) and Dataspaces in JTC 24 and JTC 25 respectively.

3.2.2 Further contact with the standardization committees to update the progress of OPENTUNITY.

This is achievable by delivering reports, by attending relevant technical committees' meetings or by joint events. On the one hand, this action contributes to further dissemination of the project and

can guide the initiation of the standardization process, on the other hand this further contact is mandatory towards the standardization committees directly covering the subject that will be promoted by OPENTUNITY to undergo a standardization process.

TCs that answered to the first contact showing interest in the project have been reported with an updated version of the summary for standardization committees (Summary for Standardization committees_v2, M25).

As a result of these contacts, OPENTUNITY project was presented by ETRA in the meeting of CEN-CLC-ETSI CoG Smart-Grid/WG Set of Standards (March 3rd, 2025). This presentation was recorded and has been published for dissemination purposes.

3.2.3 The participation of one or more OPENTUNITY partners in the standardization technical committees.

Standardization is an open activity, and all interested parties may participate in the technical committees through the designation of their National Standardization Body. This option allows for a deeper follow-up of the activity of a standardization committee and is valuable if the standardization process is going to be initiated within the standardization committee.

3.2.4 The establishment of a formal liaison of OPENTUNITY with the standardization committees.

It is recommended only when the work of the standardization committee is closely linked with the main goals of the project and a direct technical contribution from the project is expected. The figure of project liaison is recognized in CEN/CENELEC, but it is not very effective in ISO/IEC,

3.3 Standardization process

The main objective of the standardization activities in OPENTUNITY is to facilitate the market acceptance of the results by transferring these results and findings to standards that have a wide recognition in the market. With the collaboration of the relevant partners, the feasible results that may be standardized will be identified. Different options to contribute to standardization shall be considered depending on the kind of the results and the standardization context (existence of closely related standards and reactions of the standardization committees):

3.3.1 Development of a new standard within a standardization workshop.

A standardization workshop is a group of entities with a common interest in developing a standard about a specific issue. It is the equivalent figure to the standardization committee, but the number of participants is typically smaller and the working procedures faster and more flexible. A standardization workshop is created when there is a need of developing a precise standard in an innovative field that is not covered by the existing standardization committees or when these committees are not interested in developing such standard (e.g., it does not fit in their work programme). If the subject is close to the field covered by a standardization committee, it shall be informed and allow the standardization workshop to be launched.

Considering that the standardization workshop option is interesting for OPENTUNITY mainly in the European environment, the standardization workshop will be named hereinafter as CEN Workshop or CENELEC Workshop. The standard produced by a CEN/CENELEC Workshop is called CEN Workshop Agreement or CENELEC Workshop Agreement, typically named as CWA. The nature and timeline for the development of CWAs is very suitable for the framework of the RDI projects.

Recently, the possibility of collaborating with another European project (FEDECOM) in the development of one or more CWAs has arisen and is currently being studied by both Consortiums.

3.3.2 Standardization within a technical committee.

It may be interesting or needed that the results of OPENTUNITY are standardized within a standardization committee in some cases:

3.3.2.1 Development of a new standard.

When there is a result of OPENTUNITY to be promoted to a standard in a field covered by a standardization committee and such committee decides to include this development in its work programme. The resulting standard would have the support of the standardization committee, but the work shall be adapted to the internal timeline of such standardization committee and could go beyond the timeframe of the project.

3.3.2.2 Contribution to an on-going standard.

Because of the monitoring of the standardization landscape, it may be found that the results of OPENTUNITY are covered by an on-going draft of a standard, but the results do not fit in it. Gaps may be found both in standards being developed from a new initiative and standards already published that are going under a review process towards a new version.

3.3.2.3 Modification request for a standard that is not under development or review.

Gaps may also be found in published standards that are not under revision within the standardization committee. In this case, a fully justified modification request can be made to the standardization committee.

3.3.2.4 Outline of a future standard.

Only when there is not a clear view on a full roadmap for the contribution to standardization (like lack of agreement within the Consortium or lack of the expected results).

4 Implementation

4.1 First contact with standardization technical committees

For the implementation of the actions foreseen in the previous chapter of this document, the relevance of the standardization committees identified in D2.2 shall be considered. From all technical committees identified in D2.2, some are just mentioned for consideration of their standards which may be useful in terms of compatibility of the developments of OPENTUNITY.

On the other hand, committees related with innovations foreseen in OPENTUNITY project shall be considered for the "Contribution to standardization".

OPENTUNITY will innovate in the next topics:

- Data exchange infrastructure to enhance the valorisation potential of flexibility in energy system – Software.
    - Decentralized Identifiers.
    - Interoperability with other platforms and management of their historical data.
- Technologies to boost flexibility in prosumer's environment – Software.
    - HEMS and BEMS flexibility and DR optimization including initial setting algorithms.
    - AI Non-Intrusive load monitoring algorithms as a low-cost technology for sensorless prosumers.
    - Optimal selection of available flexibility.
    - Flexibility market design and management.
- Supporting technologies for DSOs/TSOs to better manage grid issues – Software.
    - Topology identification and state estimation via machine learning.
    - Low-cost real-time thermal rating.
    - Advanced asset management.
    - Grid planning methodologies.
- Procedures for enhancing interoperability – Methodologies.
    - Plug and play recognition for flexibility devices.
    - Integration of DSO and TSO ICT infrastructures into energy management systems.

Figure 1 OPENTUNITY innovations

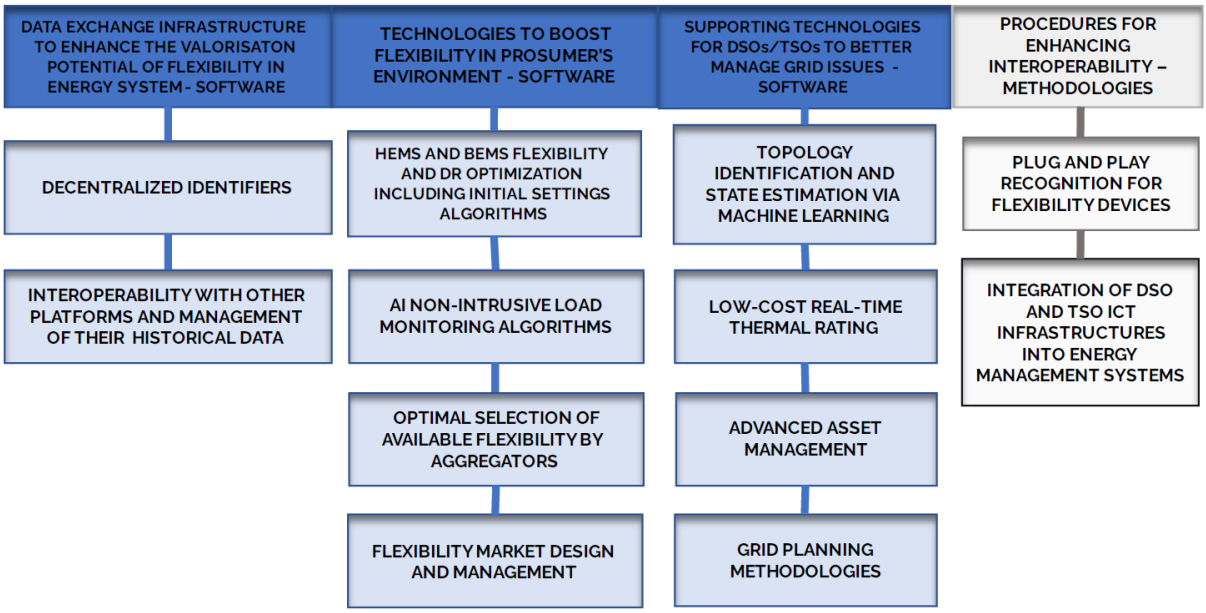

Table 1 includes the standardization committees selected for the first contact.

Table 1: TCs reached on the first contact

Technical Committee	Subtopics (D2.2)	Related innovations	Answer
CEN/CLC Focus Group 'Data, Dataspaces, Cloud and Edge'*[1] *CLC Focus Groups do not develop standardization deliverables but ensure the interaction between all relevant European stakeholders interested in potential standardization in a new field or subject.	-Energy dataspaces (added to the ones in D2.2)	-Interoperability with other platforms and management of their historical data	Offered OPENTUNITY to collaborate via a liaison. (For the time being this liaison is not considered the best way to maintain contact, as there is not a direct contribution to standardization expected in the group)
CEN/CLC/ETSI/ Coordination Group on	-SGAM - Baseline Calculation	-Interoperability with other platforms and management of their historical data	Offered to make a presentation at WG Set of Standards meeting.

[1] This Focus Group has been disbanded and the newly formed CEN-CLC/JTC 25 "Data management, Dataspaces, Cloud and Edge" has taken over its activities.

Smart Grids (CG-SG) *[2] *CLC Coordination Groups do not develop standardization deliverables, but coordinate and advise on standardization activities on a specific topic, involving multiple technical bodies.	- Prosumers electrical installations -Household appliances network and grid connectivity - Home and Building Electronic Systems (HBES) - Meter data management - Sensing devices for NILM systems	-HEMS and BEMS Flexibility and DR optiminzation including initial settings algorithms. -AI non-intrusive load monitoring algorithms as a low-cost technology for sensorless prosumers. -Optimal selection of available flexibility. -Flexibility market design and management. -Topology identification and state estimation via machine learning. -Low cost real time- thermal rating. -Advanced asset management. -Grid planning methodologies.	
CLC TC 8X System aspects of electrical energy supply	-Power quality	-Grid planning methodologies -Topology identification and state estimation via machine learning	
CLC/TC 13 Electrical energy measurement and control	-Meter data management	-HEMS and BEMS and DR optimization including initial setting -AI non-intrusive load monitoring algorithms as a low-cost technology for sensorless prosumers	Feedback has not been received from the experts.
CLC/TC 57 Power systems management and associated information exchange	- Communication networks and systems for power utility automation - Framework for energy market communications - Energy Management Systems	-HEMS and BEMS and DR optimization including initial setting	Offered any support needed.

[2] CG-SG has been renamed as COG-SG, it is under study its possible transformation to COG AES (All Electric Society) incorporating new standardization responsibilities.

CLC/TC 205 Home and Building Electronic Systems (HBES)	-Home and Building Electronic Systems (HBES)	-Optimal selection of available flexibility	
ISO/IEC JTC 1/SC 38 **Cloud computing and distributed platforms**	-Energy dataspaces (added to the ones in D2.2)	-Interoperability with other platforms and management of their historical data	
CEN/TC 247 Building Automation, Controls and Building Management	-Home and Building Electronic Systems (HBES)	-HEMS and BEMS Flexibility and DR optiminzation including initial settings algorithms. -AI non-intrusive load monitoring algorithms as a low-cost technology for sensorless prosumers. -Optimal selection of available flexibility. -Flexibility market design and management.	

Table 2: TCs subsequently contacted

Technical Committee	Subtopics (D2.2)	Related innovations	Answer
CEN/CLC JTC 24 Digital Product Passport - Framework and System	-Digital Product Passport (added to the ones in D2.2)	-Interoperability with other platforms and management of their historical data -Plug and play recognition for flexibility devices	Offered OPENTUNITY to collaborate via a liaison. (For the time being this liaison is not considered the best way to maintain contact, as there is not a direct contribution to standardization expected in the group)
CEN/CLC/JTC 25 Data management, Dataspaces, Cloud and Edge (DDCE)	-Energy dataspaces (added to the ones in D2.2)	-Flexibility market design and management. -Interoperability with other platforms and management of their historical data	

4.2 Subsequent interactions with the technical committees

Subsequent interactions include:

4.2.1 Follow up of the Standardization activity

For the technical committees and standards identified on D2.2, and those spotted afterwards, a periodic update of the standardization landscape and applicable standards will be done by UNE.

What is needed from partners?

- Information on standards related to OPENTUNITY being used.
- Information on technical committees or standardisation activities related to OPENTUNITY tasks of interest.

When is this needed?

- All along OPENTUNITY project.

4.2.2 Dissemination of the OPENTUNITY project

All technical committees identified on Table 1 and Table 2 have been contacted and OPENTUNITY project has been introduced to their members. Subsequently, OPENTUNITY progress and results (content agreed to be shared with the partners) will be disseminated with the ones that showed interest in the project by delivering reports to the TCs secretaries.

What is needed from partners?

- Information agreed to be shared on OPENTUNITY progress and findings for specific WPs.

When is this needed?

- When requested by UNE or considered useful by the partners.

4.2.3 Attendance at TC meetings

Attending relevant technical committees' meetings when invited to introduce the project and to establish personal contacts with relevant industry representatives or when required to contribute to standardization. This can be performed by any OPENTUNITY partner, being also important the participation of the project coordination and specific partners to present the most technical aspects.

What is needed from partners?

- Availability to travel (if needed) and present OPENTUNITY project.

When is this needed?

- When invited by a TC.
- When required to make a contribution to standardization.

4.3 Standardization process

A dedicated session (internal Standardization Workshop) is foreseen to explain standardization benefits, procedures and options to the partners, identify project results with potential for standardization and select the most suitable roadmap. This session could take place during a physical project meeting or on-line. Although the time plan for the Task T7.5 Contribution to standardization is

from M37 to M48, due to the previous end date of WP3, WP4 and WP5 activities on M30, it was suggested M31 as a tentative date for the session in the first version of this document.

After this first version a new date was fixed for the end of WP3 and WP4 (M34).

Moreover, the possibility to collaborate with FEDECOM project in one or more CWAs has recently arised and is being studied in both Consortiums.

For these reasons a new tentative date could be soon proposed before M31 (in case collaboration with FEDECOM for the drafting of these CWAs is possible, and can be initiated in the near future).

In case of a negative outcome of this proposal, it could be maintained in M31 or delayed to M34 (if it is needed to wait for WP3 and WP4 results).

Based on the results of the project and the standardization landscape at that moment, the best way to proceed will be selected from the ones mentioned in 3.3 Standardization process. The respective standardization proposals and standardization deliverables will be developed from M37 to M48 (or before if possible, depending on the Standardization workshop date).

What and When is needed from partners?

- Identification of gaps in existing standards being used, and needed standards for the future exploitation of OPENTUNITY **(All along OPENTUNITY project).**
- Participation on the Standardization Workshop **(M31, tentative date).**
- Availability to adapt OPENTUNITY deliverables according to common standard drafting rules **(M31/37-M48).**
- Availability to study and comment eventual draft standardisation deliverables **(M31/37-M48).**

5 Conclusions

With all the previously presented information, the following action plan including actions, responsibilities and dates can be drafted, to help the contribution to standardisation of OPENTUNITY and deliverable D7.2 which are expected to be finished on M48:

Table 3: Action Plan

Action	Related TCs	Responsible	Date
Follow up of TCs standardization activities	D2.2 identified TCs	UNE	Continuous (M1 to M48)
Delivery of reports to TCs	TCs in Table 1	UNE	Relevant milestones (M30, M34, when needed)
Presentation of the project in TCs meetings	Interested TCs in Table 1	All relevant partners	When needed
Participation in a TC	Relevant TCs in Table 1	All relevant partners	If decided, continuous
Identification and elaboration of standardization proposals	Relevant TCs in Table 1	All partners	Continuous (M1-M48)
Development of standardization deliverables	Relevant TCs in Table 1	All partners	Once finished standardizable results (M31/M37 – M48, depending on the Standardization workshop date)

This action plan will be continuously adapted to the project needs and partners' feedback, as well as completed with available information. At this moment it is not possible to define each action timing more accurately, but it establishes the next steps regarding the contribution to standardization (Task 7.5) as well as communication with technical Standardization bodies (Subtask 8.1.1).

6 References and acronyms

6.1 References

1. *Opentunity Grant Agreement. EC, 2022.* (s.f.).

6.2 Acronyms

Table 4: Acronyms

TC	Technical committee
UNE	Spanish Association for Standardization
CEN	European Committee for Standardization
CENELEC	European Committee for Electrotechnical Standardization
ETSI	European Telecommunications Standards Institute
CSA	Connectivity Standards Alliance
ISO	International Organization for Standardization
IEC	International Electrotechnical Commission
ITU	International Telecommunication Union Telecommunication
CWA	CEN/CENELEC Workshop Agreement
RDI	Research, Development and Innovation
DPP	Digital Product Passport
CG-SG/COG-SG	Coordination Group
AES	All Electric Society