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Action number: 101096511

Action Acronym: InterSTORE

Action title: Interoperable openN-source Tools to Enable hybRidisation, utiliSation, and moneTisation of stORage flExibility

Deliverable: D7.2 Project Management Plan

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Version: V1.3





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V1.3 – 27/03/2023

Project acronym	InterSTORE
Grant Agreement n°	101096511
Project Title	Interoperable open-source Tools to Enable hybridisation, utilisation, and monetisation of storage flexibility
Website	Not available yet

Deliverable	D7.2
Title of deliverable	Project Management Plan
Description	A project management plan will be provided to all the partners as project handbook to provide the basis of establishing a positive and durable collaboration during the entire project duration.
Work Package	WP 7
Dissemination level	PU
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List of abbreviations

AB	Advisory Board
EC	European Commission
GA	General Assembly
IPR	Intellectual Property Rights
PC	Project Coordinator
PO	Project Officer
WP	Work Packages

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Executive summary

This deliverable is a manual and reference document for the project partners, to reach a common understanding of project procedures, for an efficient implementation of the project, with the aim of achieving the objectives fixed in the Grant Agreement.

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1. Introduction

Project Management is a key aspect to achieve an optimal level of coordination and cooperation among the consortium partners. As most collaborative projects, InterSTORE is a complex construction in terms of both the structure of the consortium and the workflow between the different partners. For this reason, coordination and management aspects need to be detailed in depth.

This deliverable describes the strategy to implement an appropriate coordination framework, addressing general issues regarding project structure, governance, monitoring, partner responsibilities as well as specific guidelines about internal procedures and risk assessment. Moreover, this document defines procedures that go beyond those described in the Consortium Agreement. It will serve the project partners as a common understanding of the project procedures, facilitating an efficient implementation of the project and the objectives accomplishment.

The main sections developed in this deliverable are:

- Project structure
- Governance
- Internal Management Procedures
- Risk assessment



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2. Project Structure

InterSTORE is divided in seven Work Packages (WP) and each WP is divided in different tasks. Each WP has a defined leader (Lead Beneficiary) that will coordinate the progress of the corresponding WP in collaboration with the different task leaders. The task leaders will report to the WP leaders. WP leaders will report to the Project Management Team (PMT) and to the General Assembly (GA).

2.1 Work Packages inter-dependencies and Work Packages, tasks and responsibilities

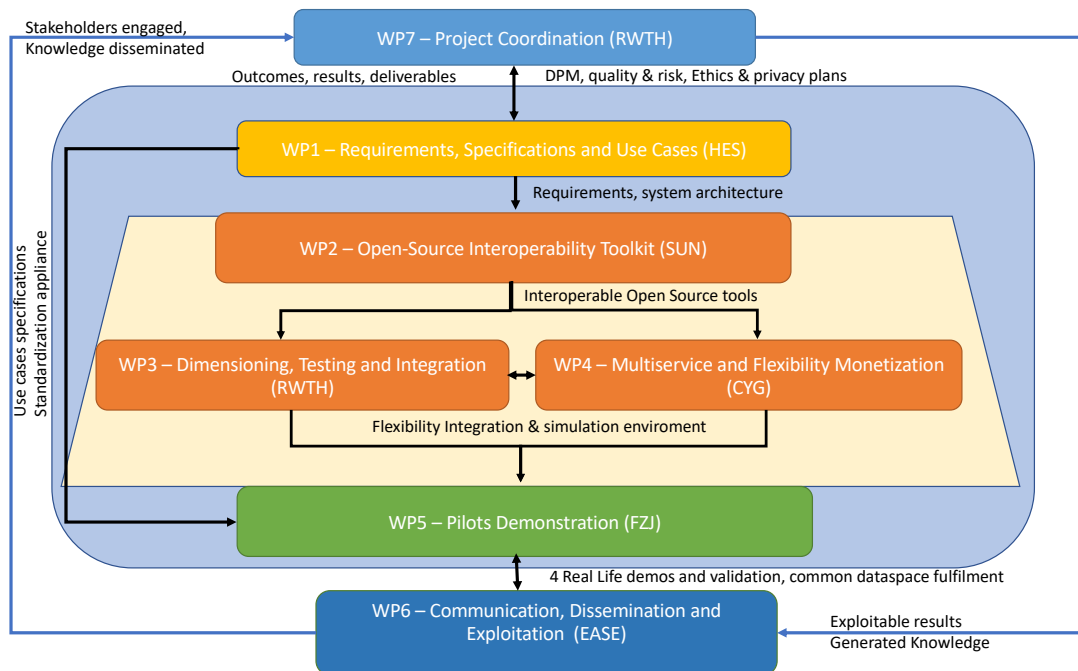


Figure 2 InterSTORE Pert



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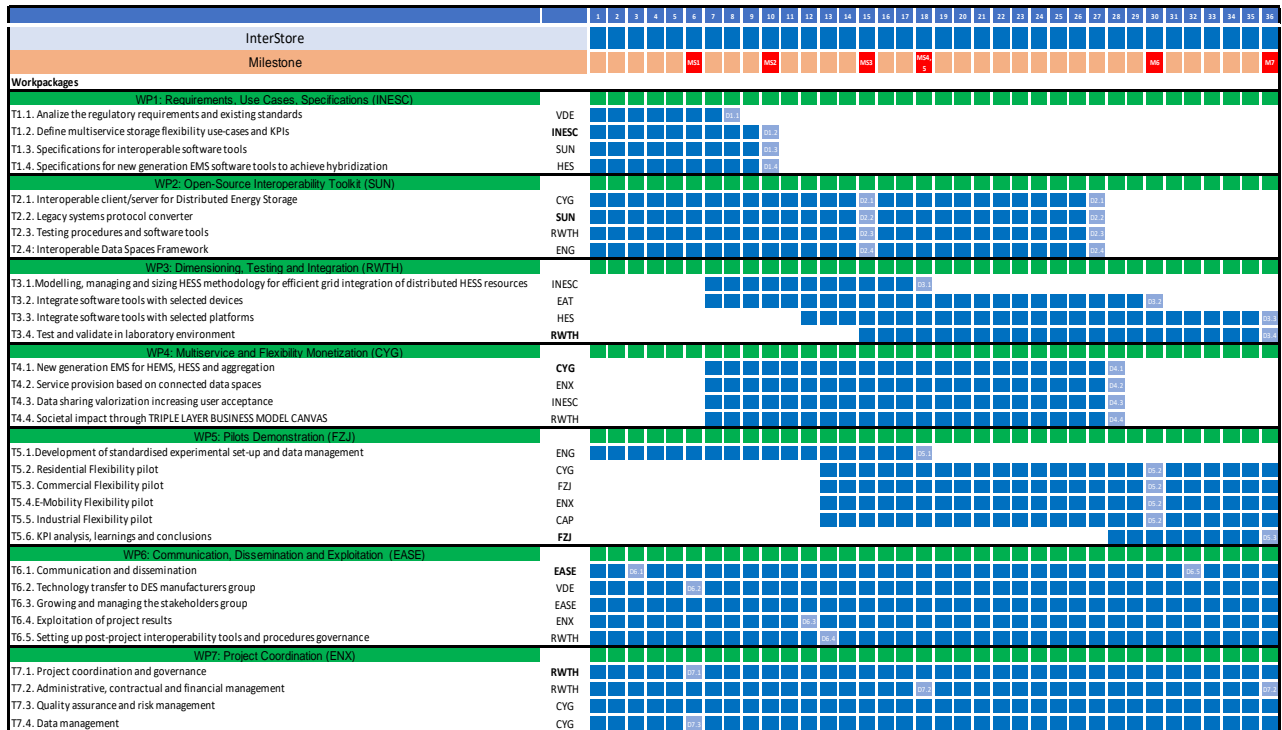


Figure 2 InterSTORE - Gantt

WP1 is the foundation of the project, where the regulatory requirements and standards will be assessed regarding interconnection compliance of distributed energy resources to achieve interoperability. The work will build upon the developments by IEEE 2030.5 standard and projects such as H2020 INTERCONNECT or OneNet, with the aim on Interoperability, the expansion of Ontologies such as SAREF and their ground-breaking Interoperability framework with the Knowledge Engine and OneNet connector while identifying gaps. WP 1 will design a collective set of use cases, which can cover different perspectives of multi-services that distributed storage can enable. These will be attained by the 4 demonstration sites with different assets at a commercial, residential and industrial level, covering small, large, different technologies and even EV assets. The specification of a toolkit, with the interoperable tools to be used, as well as the actors and roles to which they will be applied, will be specified in this task, including legacy systems converters.

In **WP2**, the building blocks for the interoperability will be assessed and defined. Based on the findings of WP1 and the assessment of standards the architecture and guidelines for interoperability and software interoperability solutions and resources (toolkits) will be developed. An interoperability toolkit will be developed and licensed as open-source for free community usage, and will represent the first technology pillar. The interoperable client/server for Distributed Energy Storage will be developed. An open-source legacy systems protocol converter will be developed. Automated testing procedures and software tools and the interoperable Data Spaces Framework will be defined.



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The overarching objectives of **WP3** are the HESS dimensioning as well as the Integration and Verification of developed software tools. The activities include the integration of the developed software tools with selected platforms and devices and the testing and validation of the integrated solutions in a laboratory environment.

In **WP4** we will focus on the second technology pillar of the InterSTORE project, namely the new generation of Energy Management Systems. Work will be based on existing, state-of-the-art ICT technologies developed by project partners and are being used either in various pilot projects or already in commercial applications. Following the interoperability and hybridization specifications from WP1, these ICT technologies will be enhanced with novel software tools (e.g. APIs, real-time data collectors, optimization, forecasting and control algorithms, analytics, etc.) to enable real-time operations with seamless multiservice utilization and monetization of storage flexibility.

WP5 objective is to deploy the developed software tools and products to test them with the defined use cases and collect data to evaluate the project objectives against the defined KPIs. The different operational and normative constraints as well as the different climate and economic conditions of the four demonstration sites provide a set of real-world data for the evaluation of the developed tools and products. The activities of this work package are so organized in six major tasks.

To conclude, **WP6** contains the measures to maximize the InterSTORE impact and involvement with the standardization committees. **WP7** is the project coordination with dedicated tasks for research data, ethics, and privacy management.

The technical WPs (WP1 – WP5) and their task interdependencies are described in more detail in the following sections. Output in terms of deliverables and other results is specified in chapter 2.2.

WP1 Requirements, Use Cases, Specifications

Figure shows the task input/output relationships within WP1.

T1.1 analyses regulatory requirements and existing standards regarding interoperability of distributed energy storage resources looking for potential gaps and for defining a standardization strategy.

T1.2 develops a set of use cases benefitting from an open approach to decentralized asset management as well as a respective set of KPIs for evaluation of their effectiveness.

T1.3 specifies the tools to replicate, adapt and improve interoperable open-source software to integrate hybrid energy storage systems.

T1.4 analyses and defines different software tools and algorithms to achieve hybridization of energy storage and determining the capability of providing a pool of flexibility grid services.

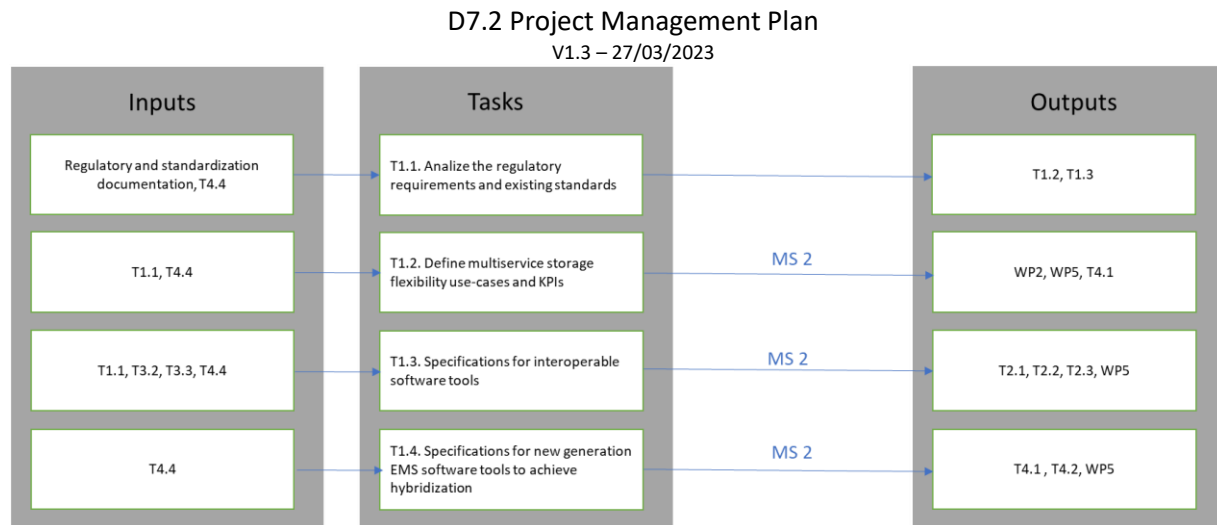


Figure 3 WP1 Interdependencies

WP2 Open-Source Interoperability Toolkit

Figure 44 shows the task input/output relationships within WP2.

T2.1 develops an open-source communication client/server software based on IEEE 2030.5 or similar for seamlessly connecting DES and DER and aligned with INTERCONNECT project.

T2.2 develops an open-source legacy systems protocol converter with the main purpose of converting, transforming and routing legacy protocols and exposing them via modern protocols and through messaging and event streaming middleware for asynchronous communication.

T2.3 defines and implements automated testing procedures to ensure interoperability of the developed software solutions while achieving high test coverage and fast testing cycles.

T2.4 provides a framework to enable and facilitate data interoperability across different stakeholders participating in the InterSTORE processes, leading to a set of interoperability services that could be executed in a local or cloud environment.

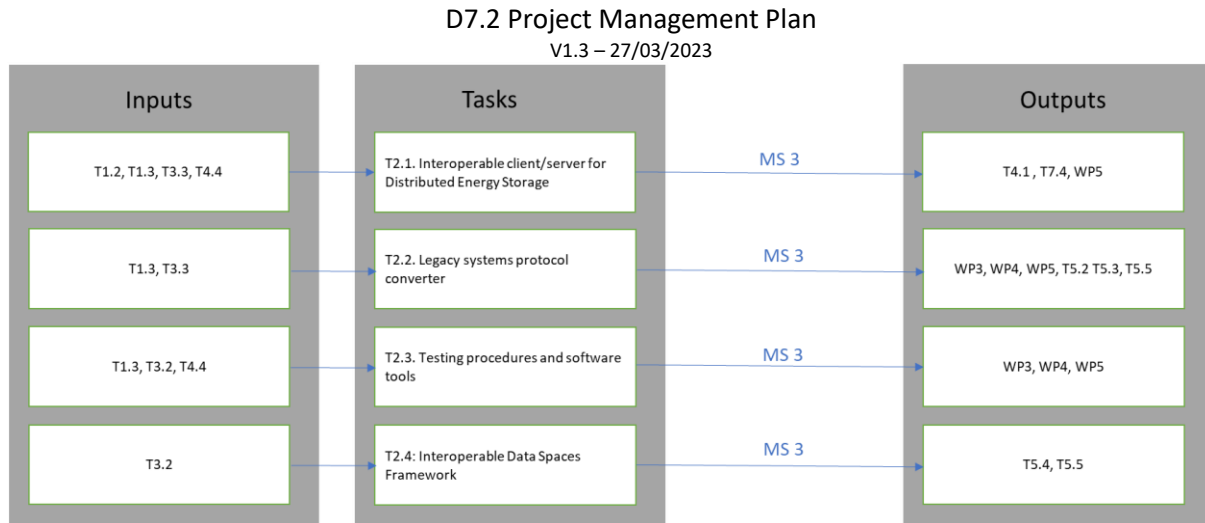


Figure 4 WP2 Interdependencies

WP3 Dimensioning, Testing and Integration

Figure 5 shows the task input/output relationships within WP3.

T3.1 develops a model for Hybrid Energy Storage Systems based on EV batteries, home batteries and/or thermal storage devices as well as its management and exploration strategy.

T3.2 integrates software tools with selected devices such as heat pumps, EV chargers and/or BESSs ensuring interoperability with different vendors' solutions.

T3.3 develops the strategy and related software tools for the proper interoperability of the different energy management systems that are part of the overall InterSTORE control architecture.

T3.4 tests and validates the integration of the W2 software tools in addition to selected devices and platforms in laboratory environment ensuring interoperability.

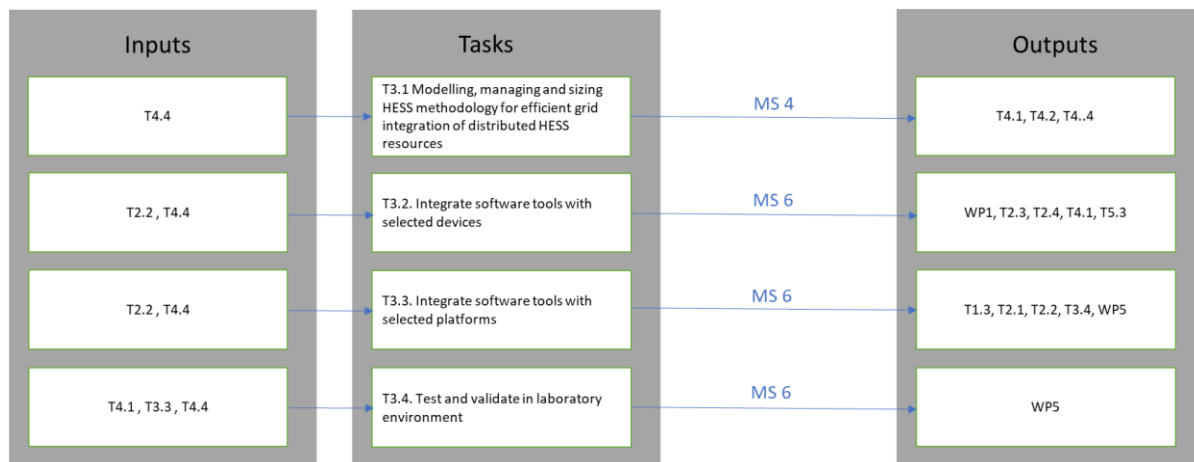


Figure 5 WP3 Interdependencies

WP4 Multiservice and Flexibility Monetization



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Figure 6 shows the task input/output relationships within WP4.

T4.1 defines and develops a new generation of energy management systems to meet defined technical and functional specifications with emphasis on multi-layer control architecture.

T4.2 implementing actions to provide a scalable, open, interoperable and cyber-secure ICT data-driven framework to leverage and upscale the BD4NRG data-driven framework compliant to IDSA and GAIA-X data space requirements and specifications.

T4.3 increases the user acceptance and awareness by increasing trust and reducing uncertainty regarding service provision and investment opportunities.

T4.4 identifies economically beneficial business models for all participants in the flexibility market including the environmental perspective.

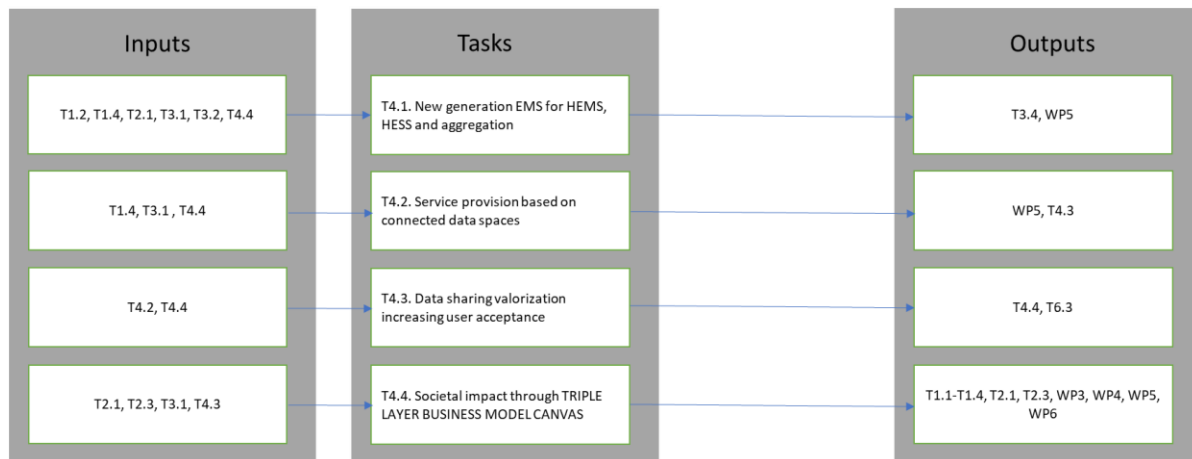


Figure 6 WP4 Interdependencies

WP5 Pilots Demonstration

Figure 7 shows the task input/output relationships within WP5.

T5.1 develops a shared testing approach and data management plan ensuring maximized potential for integration and harmonized results collection.

T5.2 demonstrates use cases within the residential flexibility pilot: a) DES flexibility market monetisation and b) Energy community DES utilisation

T5.3 demonstrates use cases within the commercial flexibility pilot: a) Grid-supporting BESS and b) Building Management Systems

T5.4 demonstrates a use case within the e-mobility flexibility pilot: Management of EV charging clusters as HESS

T5.5 demonstrates use cases within the industrial flexibility pilot: a) Hybrid floating storage flexibility monitoring and b) Management of battery systems for Node capacity increase in REC



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T5.6 collects data from all demo sites and makes them available on European level. The collected data will be used for post-analysis KPI calculations.

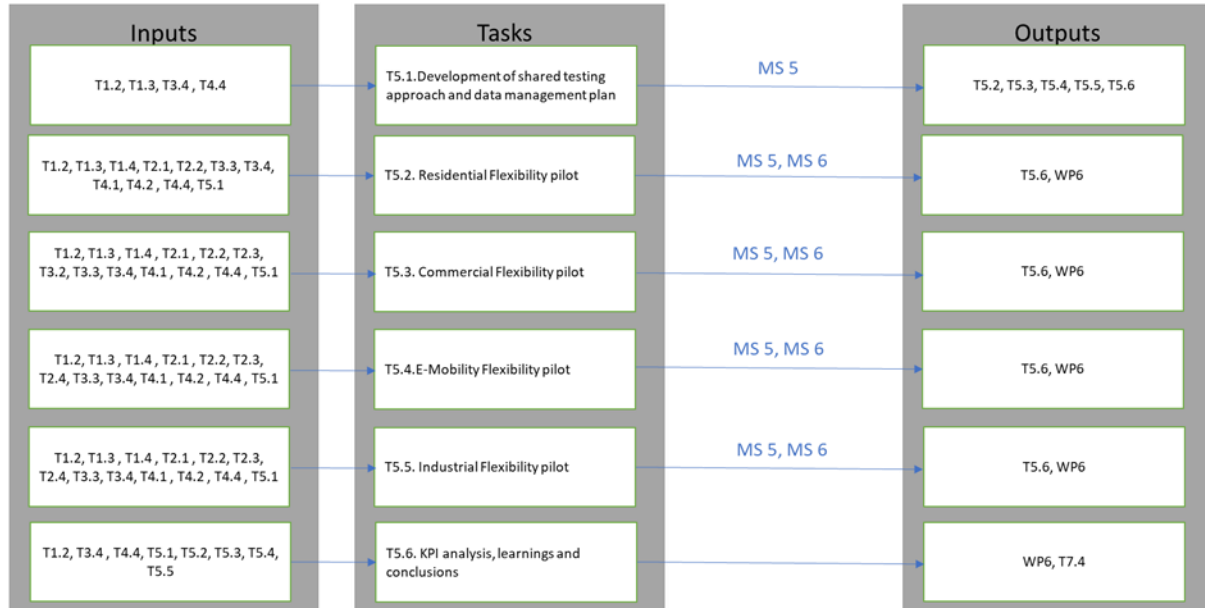


Figure 7 WP5 Interdependencies

The different WPs characteristics are summarized in Table 1 (according to the Grant Agreement):

Table 1 InterSTORE Work Packages

Work Package N°	Work Package name	Lead Beneficiary	Effort (Person-Months)	Start Month	End Month
WP1	Requirements, Use Cases, Specifications	INESC	50	1	10
WP2	Open-source Interoperability Toolkit	SUN	85	1	28
WP3	Dimensioning, Testing and Integration	RWTH	79	7	36
WP4	Multiservice and Flexibility Monetisation	CYG	90	6	28
WP5	Pilots Demonstration	FZJ	142	1	36
WP6	Communication, Dissemination and Exploitation	EASE	66	1	36
WP7	Project Coordination	RWTH	40	1	36
Total			552		



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Table 2 summarizes each WP task title, leader, participants and timeframe:

WP	Task	Task Leader	Task participants	Start Month	End Month
WP1	Task1.1 Analyze the regulatory requirements and existing standards	VDE	RWTH, CYG, ENX, FZJ, INESC, HES, SUN, ENG	01	08
WP1	Task 1.2 Define multiservice storage flexibility use-case and KPIs	INESC	RWTH, CYG, ENX, INESC, HES, FZJ, CAP, ENG	03	10
WP1	Task 1.3 Specifications for Interoperable software tools	SUN	RWTH, CYG, ENX, INESC, ENG, FZJ	01	10
WP1	Task 1.4 Specifications for new generation EMS software tools to achieve hybridization	HES	RWTH, CYG, ENX, EAT, INESC	01	10
WP2	Task 2.1 Interoperable client/server for Distributed Energy Storage	CYG	ENX, SUN	01	27
WP2	Task 2.2 Legacy systems protocol converter	SUN	CYG	01	27
WP2	Task 2.3 Testing procedures and software tools	RWTH	INESC, SUN	01	27
WP2	Task 2.4 Interoperable Data Spaces Framework	ENG	ENX, SUN	01	27
WP3	Task 3.1 Modelling, managing and sizing HESS methodology for efficient grid integration of distributed HESS resources	INESC	ENX, CYG, HES, FZJ	07	17
WP3	Task 3.2 Integrate software tools with selected devices	EAT	ENX, CYG, INESC, HES, RWTH	07	30
WP3	Task 3.3 Integrate software tools with selected platforms	HES	CYG, FZJ, EAT, RWTH	12	36
WP3	Task 3.4 Test and validate in laboratory environment	RWTH	CYG, ENX, HES, SUN, EAT, INESC, FZJ	15	36
WP4	Task 4.1 New generation EMS for HEMS, HESS and Flexibility Management	CYG	HES, INESC, EAT, ENX	06	28
WP4	Task 4.2 Service provision based on connected data spaces	ENX	INESC, HES, ENG	06	28
WP4	Task 4.3 Data sharing valorization increasing user acceptance	INESC	RWTH, ENG, SUN, ENX	06	28



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WP4	Task 4.4 Societal impact through triple layer business model Canvas	RWTH	ENX, CYG, EAT, SUN, EASE, ENG	06	28
WP5	Task 5.1 Development of shared testing approach and data management plan	ENG	RWTH, CYG, ENX, FZJ, INESC, HES, INESC	1	12
WP5	Task 5.2 Residential Flexibility pilot	CYG	SUN, ENG	13	36
WP5	Task 5.3 Commercial Flexibility pilot	FZJ	EAT, SUN, ENG	13	36
WP5	Task 5.4 E-Mobility Flexibility pilot	ENX	ENG, SUN, CYG	13	36
WP5	Task 5.5 Industrial Flexibility pilot	CAP	HES, INESC, SUN, ENG	13	36
WP5	Task 5.6 KPI analysis, learnings and conclusions	FZJ	RWTH, CYG, ENX, ENG, INESC, HES, EAT, CAP	28	36
WP6	Task 6.1 Communication and Dissemination	EASE	All	1	36
WP6	Task 6.2 Technology transfer to DES manufacturer group	VDE	SUN, CYG, RWTH, INESC, ENG	1	36
WP6	Task 6.3 Growing and managing the stakeholders' group	EASE	All	1	36
WP6	Task 6.4 Exploitation of project results	ENX	All	6	36
WP6	Task 6.5 Setting up post project interoperability community and procedure governance	RWTH	ENX, VDE, ENG, EASE	28	36
WP7	Task 7.1 Project coordination and governance	RWTH	All	1	36
WP7	Task 7.2 Administrative, contractual and financial management	RWTH	All	1	36
WP7	Task 7.3 Quality assurance and risk management	CYG	All	1	36
WP7	Task 7.4 Data management	CYG	All	1	36

2.2 Deliverables, milestones and responsibilities

During the InterSTORE project execution, the partners will be in charge of generating 54 deliverables detailing the development, results, and conclusions of the project activities. Also, 13 milestones indicate the achievement of key activities, results, and technology developments. These milestones serve as indicators of the successful progress of the project.



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Each deliverable features a due date and a lead beneficiary. The lead beneficiary will act as the responsible to coordinate and edit the document in a timely manner following the internal procedures that are defined in Section 4.2 of this deliverable. The deliverables will be submitted by the Project Coordinator (PC) through the Funding and Tenders Portal before the end of the due date month.

Table 3 lists the deliverables as stated in the Grant Agreement:

Deliverable No	Deliverable Name	WP	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	Report on Standardization, activities and regulatory requirements	WP1	VDE	R Document, report	— PU : Public	6
D1.2	System use cases for interoperable distributed hybrid storage systems.	WP1	CYG	R Document, report	— PU : Public	10
D1.3	Specification for the interoperable software tools	WP1	SUN	R Document, report	— PU : Public	10
D1.4	Specification for the new Energy Management System for hybrid storage	WP1	HES	R Document, report	— SEN: Sensitive	10
D2.1	Interoperable client/server for Distributed Energy	WP2	CYG	OTHER	PU : Public	27
D2.2	Legacy systems protocol converter	WP2	SUN	OTHER	PU : Public	27
D2.3	Testing procedures and software tools	WP2	RWTH	OTHER	PU : Public	27
D2.4	Interoperable Data Spaces Framework	WP2	ENG	R Document, report	— PU : Public	27
D3.1	HESS dimensioning methodology for efficient integration Report	WP3	INESC	R Document, report	— PU : Public	18
D3.2	Report on the Software Tool integration with selected Devices	WP3	EAT	R Document, report	— PU : Public	30
D3.3	Report on the Software Tool integration with selected Platforms	WP3	HES	R Document, report	— PU : Public	36
D3.4	Report on Testing and Validation in Laboratory Environment	WP3	RWTH	R Document, report	— PU : Public	36



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D4.1	New generation EMS for HEMS, HESS and flexibility management report	WP4	CYG	R Document, report	— PU : Public	28
D4.2	Service provision based on connected data spaces report	WP4	ENG	R Document, report	— PU : Public	28
D4.3	Data sharing valorization concepts for validation of user acceptance report	WP4	INESC	R Document, report	— PU : Public	28
D4.4	Corporate social and environmental responsibility business models	WP4	RWTH	R Document, report	— PU : Public	28
D5.1	Report on planning of demonstration actions across the pilot sites	WP5	ENG	R Document, report	— PU : Public	18
D5.2	Report on software tools integration and test execution across the pilot sites	WP5	CYG	DEM Demonstrator, pilot, prototype	— PU : Public	30
D5.3	Report on evaluation of use cases and KPIs evaluation	WP5	FZJ	R Document, report	— PU : Public	36
D6.1	Report on project identity and website	WP6	EASE	R Document, report	— PU : Public	3
D6.2	First Communication and Dissemination Plan	WP6	EASE	R Document, report	— PU : Public	6
D6.3	First draft of the Exploitation Strategy, Plan and IPR report	WP6	VDE	R Document, report	— SEN: Sensitive	12
D6.4	Final Exploitation Roadmap including Business Plan and IPR report	WP6	RWTH	R Document, report	— SEN: Sensitive	32
D6.5	Final Communication and Dissemination Plan	WP6	EASE	R Document, report	— PU : Public	32
D7.1	Quality Management Plan	WP7	ENX	R Document, report	— PU : Public	6
D7.2	Project Management Plan	WP7	RWTH	R Document, report	— PU : Public	3



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D7.3	Data Management Plan	WP7	CYG	DMP — Data Management Plan	SEN: Sensitive	6
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Each milestone has been defined with a due date and a lead beneficiary. The lead beneficiary will act as the responsible to report the milestone achievement to the WP leader and to the PMT.

Table 4 shows the list of milestones as stated in the Grant Agreement. The milestone achievement is verified by the European Commission (EC) review board through the document reported in the column “Means of Verification” in Table 4.

Table 4 lists the Milestones as stated in the Grant Agreement:

Milestone No	Milestone Name	Work Package No	Lead Beneficiary	Means of Verification	Due Date (month)
1	Project Set up: Project website, dissemination channel ready	WP6	EASE	Successful submission of D6.2, D6.2, D7.1	6
2	User Need Use Cases, Requirements, KPIs, Specifications	WP1	INESC	Successful submission of D1.2, D1.3, D1.4	10
3	SW Tools: 4 open sources interoperability tools	WP2	SUN	Release of early version of D2.1, D2.2, D2.3, D2.4	15
4	InterSTORE method and models: HESS methodology for efficient grid integration of distributed HESS resources	WP3	RWTH	Successful submission of D3.1	18
5	Real Life Demonstration: 4 country Pilot testing set up	WP5	FZJ	Successful submission of D5.1	18
6	Validation Results: InterSTORE tools integrated and evaluated	WP3 and WP5	FZJ	Successful submission of D5.2, D3.2	30
7	InterSTORE finalization: standardised recommendation drafted and final product adopted for further adoption as per exploitation plan	WP6	VDE	Successful submission of D6.5	36



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2.3 Summary of effort

Finally, the estimated effort (in Person-Month) per partner at WP level is summarized in Table 5 as stated in the Grant Agreement:

Table 5 lists the effort in person months as stated in the Grant Agreement:

Participant	WP1	WP2	WP3	WP4	WP5	WP6	WP7	Total Person-Months
RWTH	6.00	12.00	12.00	15.00	6.00	3.00	11.00	65
CYG	10.00	10.00	8.00	12.00	18.00	2.00	4.00	64
ENX	2.00	6.00	8.00	15.00	22.00	7.00	12.00	72
FZJ	3.00	0.00	9.00	0.00	30.00	3.00	3.00	48
INESC	7.00	3.00	11.00	13.00	11.00	1.00	1.00	47
HES	4.00	0.00	20.00	20.00	10.00	3.00	1.00	58
EAT	2.00	0.00	11.00	2.00	8.00	2.00	1.00	26
SUN	6.00	36.00	0.00	3.00	6.00	2.00	2.00	55
VDE	4.00	0.00	0.00	0.00	0.00	17.00	1.00	22
CAP	2.00	0.00	0.00	0.00	18.00	4.00	1.00	25
ENG	4.00	18.00	0.00	6.00	13.00	9.00	2.00	52
EASE	0.00	0.00	0.00	4.00	0.00	13.00	1.00	18
Total Person-Months	50	85	79	90	142	66	40	552



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3. Governance

3.1 Project Bodies

InterSTORE governance structure aims to establish an effective framework in the decision-making processes in order to achieve the project objectives.

InterSTORE is a collaborative objective-driven project and its management structure involves two decision levels:

- Strategic level: The General Assembly
- Operational level: The Project Coordinator assisted by the project management team.

Moreover, the consultative body so called Advisory Board (AB) will provide external advice.

Both Grant Agreement and Consortium Agreement define the project bodies. All the bodies have been formally nominated and constituted during the Kick-off meeting that took place in January 2023.

A summary of the roles and members of each management body is given below:

Body	General Assembly
Definition and tasks	Ultimate decision-making body: proposal for changes to Grant Agreement (annexes 1, 2, 3 and 5), entry or withdrawal of a partner, identification of a breach by a partner, appointment of AB members, among others...
Members	One representative of each partner

Table 6 lists representatives and their function in the InterSTORE General Assembly:

N°	Partner	Representative	E-mail	Function
1	RWTH	Antonello Monti	amonti@eonerc.rwth-aachen.de	Coordinator
2	CYG	Peter Nemcek	peter.nemcek@cyber-grid.com	Quality responsible + pilot owner
3	ENX	Francesco Guaraldi	francesco.guaraldi.external@enel.com	Technical Coordinator + Pilot owner
4	FZJ	Andrea Benigni	a.benigni@fz-juelich.de	Pilot leader + pilot owner
5	INESC	Alexandre Lucas	alexandre.lucas@inesctec.pt	Requirements Coordinator + CAP pilot supporter
6	HES	Rafael González Nieves	rgonzalez@hesstec.net	Simulation leader
7	EAT	Martina Josevski	MartinaJosevski@eaton.com	Tech provider + FZJ pilot supporter



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8	SUN	Matjaz Juric	matjaz.juric@sunesis.si	Tech provider
9	VDE	Sebastian Kosslers	sebastian.kosslers@vde.com	Standardization leader
10	CAP	Pedro Matos	pmmatos@capwatt.com	Pilot owner
11	ENG	Vincenzo Croce	Vincenzo.Croce@eng.it	Tech provider + ENX pilot supporter
12	EASE	Stefani Krecar	s.krecar@ease-storage.eu	Dissemination leader



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Body	Project Management Team
Definition and tasks	Responsible for the overall progress and deliverables of the project: execution of the GA's decisions, seeking solutions to all technical matter of importance, monitoring the development and implementation of the technical activity, ensure good communication and information flow, implementation of the exploitation activities, among others...
Members	WP leaders and PC

Table 7 lists representatives and their function in the InterSTORE Project Management Team:

N°	Partner	Representative	E-mail	Function
1	RWTH	Antonello Monti	amonti@eonerc.rwth-aachen.de	Coordinator and WP Leader
2	CYG	Peter Nemcek	peter.nemcek@cyber-grid.com	Data manager and WP leader
3	ENX	Francesco Guaraldi	francesco.guaraldi.external@enel.com	Technical Coordinator
4	FZJ	Andrea Benigni	a.benigni@fz-juelich.de	WP Leader
5	INESC	Alexandre Lucas	alexandre.lucas@inesctec.pt	WP Leader
8	SUN	Matjaz Juric	matjaz.juric@sunesis.si	WP Leader
12	EASE	Stefani Krekar	s.krekar@ease-storage.eu	WP Leader



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Body	Advisory Board
Definition and tasks	Consultative body providing external advice and ensuring the proper exploitation of results.
Members	External advisors covering the value chain of the automotive industry and mobility-related clusters

It has been agreed during the Kick-off Meeting that the AB would be defined during the first six months of the project.

Body	Project Coordinator
Definition and tasks	Responsible for the overall progress and deliverables of the project: execution of the GA's decisions, seeking solutions to all technical matter of importance, monitoring the development and implementation of the technical activity as well as controlling and monitoring of project finances and reporting on time to the European Commission.
Members	Project Coordinator, Financial Coordinator, Technical Coordinator

Table 8 lists representatives and their function in the InterSTORE Project Coordinator Team:

Beneficiary	Representative	E-mail	Functions
RWTH	Antonello Monti	amonti@eonerc.rwth-aachen.de	Project Coordinator
RWTH	Ulrike Gohil	Ulrike.gohil@zhv.rwth-aachen.de	Financial Coordinator
ENX	Francesco Guaraldi	francesco.guaraldi.external@enel.com	Technical Coordinator

3.2 Internal communication

Project monitoring refers to the necessary tasks to ensure that the project is within scope, on time and on budget. The PC is in charge of the coordination of project monitoring, with the support of the GA, the PMT and the partners as consortium. To that end, the following points need to be considered at any time during the project implementation and any partner must immediately inform the PC — who is bound to inform the EC and the other partners — of any of the following situations:

- Events which are likely to affect significantly or delay the implementation of the action or the EC's financial interests, in particular:
 - o Changes in its legal, financial, technical, organizational or ownership situation (or those of its affiliated entities);
 - o Changes in the name, address, legal form, organization type of its affiliated entities.
- Circumstances affecting the decision to award the grant or compliance with requirements under the Agreement.



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RWTH, as PC, is responsible for managing and maintaining the contacts list of the project, covering technical staff and at least one person from each partner dealing with financial, contractual and legal issues. It is the responsibility of the partners to appoint the appropriate people to be part of the list. It is important to mention that each partner is responsible for keeping information stored and up to date in the Funding and Tenders Portal, in particular, its name, address, legal representatives, legal form and organization type.

Mailing will be preferably used to communicate project results, organize meetings, common activities and all actions that require a fast and effective coordination and synchronization among partners. The e-mail subject must contain all the useful information to allow an easy and rapid classification of the messages received. Specifically, the subject must always start with 'InterSTORE'. An 'URGENT' label in the email subject should identify any deliverable and decision deadline as well as urgent information coming from the EC. Users of the mailing lists should avoid an improper usage of the list. Mail intended for specific purposes or communications to restricted groups should not be sent to the list but only to the interested partners.



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4. Project Management Procedures

InterSTORE internal management procedures aim to establish an effective day-to-day activity monitoring and of the development of the work plan in to achieve the project objectives.

The standard decision-making process among partners is fixed in the Consortium Agreement. Nonetheless, additional procedures are defined in the present section to cover specific less-critical situations that are not included in the Consortium Agreement. If needed, new mechanisms will be established by the GA in agreement with the Consortium Agreement and the EC.

4.1 Meetings

Several types of meetings will be organized. The main ones are listed and described in the following lines.

GENERAL ASSEMBLY MEETINGS

As defined in the Consortium Agreement, the GA is the decision-making body of the consortium. The GA will meet at least once every six months. GA meetings will be held physically (in a venue previously chosen by consensus among partners) or remotely (hybrid). It is mandatory for all the partners to provide at least one representative to these meetings. The PC shall also convene extraordinary GA meetings at any time upon written request of any partner.

They are scheduled in order to inform the partners on the WP development status, the obtained results and conclusions, check the completion of the milestones and the status of the tasks. These meetings will comprise (but not limited to) the following slots:

- One slot to describe briefly the general status of the project, as an introduction to the rest of specific WP slots. Chaired by the PC;
- One slot per WP to follow up the progress of work, inform on the obtained results and conclusions (if any), analyze risks and plan the next actions. Chaired by the WP leaders;
- Wrap-up and next steps: to recap all the agreements and actions, outcomes of the meeting;
- Optional slots to discuss specific cross-issues affecting the whole project.

PMT MEETING

It has been decided during the kick-off meeting to have a monthly PMT meeting (starting in April 2023). This meeting will be held online. It is mandatory for all WP leaders to provide at least one representative to these meetings. Any decision of the PMT with effects on the Annex I must be approved by the GA.



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REHEARSAL MEETINGS

Rehearsal meetings will be scheduled to prepare the Technical Review Meetings. The goal is to rehearse the presentations that will be showed out in front of the Project Officer (PO) and EC reviewers. Besides, a slot devoted to deal with last minute problems will be foreseen in the agenda. Likely issues and requests coming from the PO and the reviewers should be anticipated during these meetings.

TECHNICAL REVIEW MEETINGS (with PA)

They take place once per reporting period. The date and place for the meeting is previously agreed with the Project Advisor (PA). Each partner must provide the needed staff to give the presentations and contribute to the discussions. The PA will likely appoint some people to act as reviewers during the meeting. As a result of the meeting, a report assessing the progression of the project is sent to the PC by the EC.

The PC, with the support of WP Leaders and all partners, will organize and prepare the review meetings in advance, following these guidelines:

- Preparing the agenda for review preparation and for the meeting;
- Liaising with participants, making sure that all necessary participants will attend the event
- Chairing all review presentations;
- Presenting an overview of the project/activity at the beginning of the review;
- Ensuring the taking of minutes and providing the final version of minutes;
- Sending all partners the review report from the EC;
- Following up all comments and recommendations from the reviewers and the PO.

GENERAL FOLLOW-UP CALLS

The PC or any decision board reserve the right to organize at any time a meeting (virtual or face-to-face) for the overall follow-up of the project if any significant deviation or risk is identified. This meeting will be led by the PC and leaders of WPs in progress. Attendance of WP leaders and Deliverable leaders is mandatory. Any critical decision that may involve a project amendment shall be conveyed to the PC and GA for them to decide on it, according to the rules specified on the Consortium Agreement. Minor decisions shall be approved with simple majority (one vote per partner), considering that at least 2/3 of the involved partners attend the meeting.

WP MEETINGS

The same organizational model applicable to the partners as consortium applies at WP and Task levels. The leaders will be responsible to organize the internal working mode in the best possible way to guarantee the proper implementation of the work, informing the PC about the methodology. Any critical decision that may involve a project amendment shall be conveyed to the PC and GA for them to decide on it, according to the rules specified on the Consortium Agreement. Minor decisions shall be approved with simple majority (one vote per partner), considering that at least 2/3 of the involved partners attend the meeting.

MINUTES



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The partner chairing the GA and PMT general follow-up calls and WP meetings shall produce minutes of the meetings. The detail level of the minutes will depend on the transcendence of the meeting; e.g., the GA minutes will be more detailed than the WP meeting minutes. Nonetheless, the minutes shall reflect at least the meeting date, attendees list and the decisions agreed and can be produced as a word-processor document or email. The GA and PMT minutes, once accepted, shall be sent by the PC to the engaged partner. The follow-up calls and WP meetings minutes shall be distributed to the relevant partners within 15 calendar days of the meeting. The minutes shall be considered as accepted if, within 15 calendar days from receipt, no partner has sent (by written notice) an objection to the accuracy of the minutes. Minutes produced as word-processor document shall be uploaded to the InterSTORE repository.

4.2 Documentation and quality assurance

DOCUMENTATION

Two main actors participate in the deliverable production: the deliverable lead partner, also known as the deliverable editor and the contributors, which are the partners participating in the tasks linked to the deliverable. The deliverable editor and contributors must agree the table of contents, the work that each contributor must provide and a tentative schedule for closure. The deliverable editor is responsible for the overall quality of the work, including the appropriate issue of the document and communication management procedures: coordinating, requesting and collecting contributions, as well as integrating them in the different releases. Nonetheless, it is also important to emphasize that each partner is responsible for the quality of its own contribution.

The WP leader will support the deliverable editor by checking the alignment of the deliverable with the following points:

- Assignment of the deliverable sections to the involved partners is consistent with the roles of the partners in the work package;
- Proposed deliverable development timeframe is realistic according the expected deadline;
- Proposed contents are compliant with objectives stated in the work plan.

InterSTORE outputs (deliverables, reports, presentations) will be produced using the templates created by the communication and dissemination partner. The templates will be made available at the InterSTORE project repository for all the partners. If necessary, these templates will be improved and/or updated.

All relevant documents and all communication in the framework of InterSTORE will be done in English. Nevertheless, dissemination materials (such as press releases or technical publications) can be translated to other languages (mainly the partners' languages). In this scenario, each partner is responsible for translation of official InterSTORE documents to its language of interest.

All project-related documentation will be stored in the InterSTORE private project repository. This tool was created as an internal management tool for communication and documentation between the partners.



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Documents should be identified with a unique coded name, regardless of the filenames and referencing conventions each partner uses in local archives. Document coded names are recommended to be structured into the following fields:

[Project Acronym - DX.Y Title of the Deliverable_VU.V]

Example: InterSTORE - D1.1 Project Management Handbook_V0.1

Where:

- DX.Y stands for the Deliverable ID, in agreement with the Grant Agreement;
- VU.V stands for the versions of the document, where *U* reflects the document status and *V* indicates the document release number for the current status, with:
 - *U* = 0 indicates *draft* status; i.e., an intermediate versions of the document.
 - *U* = 1 indicates *review* status; i.e., the version for internal review.
 - *U* = 2 indicates *final* status; i.e., the version for official submission to the EC.

The file name can be completed with any add-on information which may be useful for external readers.

Examples:

InterSTORE – D1.1 Project Management Handbook_V0.1_15092022

QUALITY ASSURANCE

A well-established quality assessment methodology is required to ensure the good attainment of the project, this will be done at M6 in the D7.1 Quality Management Plan. At the same time, this methodology needs to be based on a very simplified procedure, which ensures good results while avoiding non-essential procedures. The quality assessment procedure for the content validation of the deliverables is described as follows:

- a. The quality review procedure for documents should start at least 4 weeks before the official submission of the deliverable to the EC. The draft is uploaded to the InterSTORE repository for any interested partner to review and provide constructive feedback.
- b. The deliverable editor will request the WP leader, WP members and PC (i.e., the internal reviewers) to review the document. Reviewers are requested to provide a reviewed version of the document with 'track of changes'.
- c. Then, the deliverable editor must consolidate a revised version of the deliverable and request the internal reviewers their approval, at least one week before the submission deadline.
- d. Finally, the deliverable undergoes a subsequent release check by the PC. This later step might call for additional quality improvements from the deliverable authors.



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Table 9 lists the InterSTORE deliverables quality assessment:

Document Status	Starting	Duration	Participants
Writing	-	-	Editor + Contributors
Review	4 weeks before deadline	2 weeks	Editor + Reviewers + PC
Revision consolidation and final document approval	2 weeks before deadline	1 week	Editor + Reviewers + PC
Quality check	1 week before	1 week	Editor + PC

Table 11: INTERSTORE Deliverables quality assessment

The internal reviewers are expected to review the documents and provide feedback according to the criteria shown in Table 10.

Table 10 lists the criteria for internal reviews:

Criteria	Points to consider
Technical	<ul style="list-style-type: none"> - The appropriateness of the document in relation to the expected contribution (i.e. deliverable description). - Technical decisions are appropriately elaborated and justified.
Innovation	<ul style="list-style-type: none"> - Innovative aspects are sufficiently illustrated and well explained. - Described work is clearly exposed and presents technical innovation and improvements ahead of the state-of-the-art. - Described work is expected to have a significant impact (e.g. to the EV market, society, environment, EU economy, etc.). - The deliverable will lead to further outputs, such as papers, standards contributions, or exploitable outcomes.
Style and format	<ul style="list-style-type: none"> - Deliverables must include an executive summary. This allows readers to understand document objectives and scope. - Clear writing and logical order: easy to read and to understand by different types of public, but specially it targets adequately the intended audience. - Content is focused on key issues, with a suitable level of detail. - Completeness: there are no significant omissions. - Suitable conclusions. - Appropriate references. - Template compliance. - Correct English spelling and grammar. - Content-free of relative temporal references. - Ideal document page count is between 20 and 50.

A high production quality is expected for those deliverables with *Public* dissemination level. Internal reviewers must put special effort in the quality assessment of these documents.



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During the document production and especially during the review process several issues might arise:

- Any expected delay of N days must be notified by the document editor to the PC and WP leader at least $2*N$ days before the due date. Mitigation actions must be defined and agreed between the deliverable editor and the WP leader in order to reduce the impact of the delay as much as possible. The WP leader will brief the PC about the decision.
- If the PC does not accept the deliverable before delivery date due to lack of quality or due to other reasons:
 - Deliverable editor, WP leader and PC will agree on a mitigation plan.
 - GA could be reached for corrective actions if PC deems the issue is serious.
 - If needed, PC will inform PO about the issue and the corrective measures.

Table 11 lists the peer reviewers per deliverable:

Deliverable (number)	Deliverable name	Work package number	Short name of lead participant	Delivery date	Peer Reviewer 1	Peer Reviewer 2
D1.1	Report on Standardization, activities and regulatory requirements	WP1	VDE	6	CYG	ENG
D1.2	System use cases for interoperable distributed hybrid storage systems.	WP1	INESC	10	CYG	RWTH
D1.3	Specification for the interoperable software tools	WP1	SUN	10	CYG	RWTH
D1.4	Specification for the new Energy Management System for hybrid storage	WP1	HES	10	CYG	RWTH
D2.1	Interoperable client/server for Distributed Energy Storage (software with documentation)	WP2	CYG	15	SUN	ENG
D2.2	Legacy systems protocol converter	WP2	SUN	15	CYG	ENG



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	(software with documentation)					
D2.3	Testing procedures and software tools (software with documentation)	WP2	RWTH	15	SUN	ENG
D2.4	Interoperable Data Spaces Framework – set of interoperability services	WP2	ENG	15	SUN	ENX
D2.1	Interoperable client/server for Distributed Energy Storage (software with documentation)	WP2	CYG	27	SUN	ENG
D2.2	Legacy systems protocol converter (software with documentation)	WP2	SUN	27	RWTH	ENG
D2.3	Testing procedures and software tools (software with documentation)	WP2	RWTH	27	SUN	ENG
D2.4	Interoperable Data Spaces Framework – set of interoperability services	WP2	ENG	27	SUN	ENX
D3.1	HESS dimensioning methodology for efficient integration Report	WP3	INESC	18	HES	EAT
D3.2	Report on the Software Tool integration with selected Devices	WP3	EAT	30	HES	INESC
D3.3	Report in the Software Tool	WP3	HES	36	INESC	EAT



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	integration with selected Platforms					
D3.4	Report on Test and Validation in Laboratory Environment	WP3	RWTH	36	HES	EAT
D4.1	New generation EMS for HEMS, HESS and aggregation report	WP4	CYG	28	HES	INESC
D4.2	Service provision based on connected data spaces report	WP4	ENG	28	HES	ENX
D4.3	Data sharing valorisation concepts for validation of user acceptance report	WP4	INESC	28	HES	ENX
D4.4	Corporate social and environmental responsibility business models	WP4	RWTH	28	EAS	VDE
D5.1	Report on planning of demonstration actions across the pilot sites	WP5	ENG	18	FZJ	HES
D5.2	Report on software tools integration and test execution across the pilot sites	WP5	CYG	30	FZJ	HES
D5.3	Report on evaluation of use cases and KPIs evaluation	WP5	FZJ	36	FZJ	HES
D6.1	Report on project identity and website	WP6	EASE	3	ENX	RWTH
D6.2	First Communication	WP6	EASE	6	ENX	RWTH



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	and Dissemination Plan					
D6.3	First draft of the Exploitation Strategy, Plan and IPR report	WP6	VDE	12	ENX	CYG
D6.4	Final Exploitation Roadmap including Business Plan and IPR report	WP6	RTWH	32	ENX	CYG
D6.5	Final Communication and Dissemination Plan	WP6	EASE	32	ENX	VDE
D7.2	Project Management Plan	WP7	RWTH	3	INESC	FZJ
D7.1	Quality Management Plan	WP7	ENX	6	INESC	FZJ
D7.3	Data Management Plan	WP7	CYG	6	INESC	FZJ
D7.2	Project Management Plan	WP7	RWTH	36	INESC	FZJ

4.3 Reporting and payments

INTERNAL REPORTING

WP leaders shall provide at least once a month a technical report to the PMT with regards to the ongoing activities in their WPs. These reports can be in form of a presentation with slides or just a discussion during the PMT meetings. The WP leaders shall indicate deviations from the GA and possible risks due to the deviations during the meeting.

Furthermore there are internal financial reports planned. As decided during the kick-off meeting besides the periodic reports which are due in month 18 and 36, all partners will have to provide information on their use of resources in month 9 and 27 for the internal financial reporting. The internal reports will not be submitted to the EC but used by the PC for the internal monitoring and controlling of the overall project finances. These internal financial reports shall contain:



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- Summary of the resources consumption for project monitoring purposes, consisting of an estimate of efforts spent per WP compared to planned efforts and major eligible cost items incurred in the interval;
- Any foreseen deviation of the effort or costs foreseen for the interval;

The PC will define a template for collecting the report to monitor potential effort deviations from internal resources planning. This template will be distributed to the partners and will be available at the InterSTORE repository. The PC will compile all inputs and will generate reports that will be presented during the GA Meetings. This monitoring action will help understand the project status and apply corrective measures when necessary.

PERIODIC REPORTS

InterSTORE is divided in 2 reporting periods in which the PC must submit to the EC, the technical and financial reports as set out in the Grant Agreement. These reports will be submitted through the Funding and Tenders Portal.

- Reporting period 1 (RP1): from month 1 to month 18
- Reporting period 2 (RP2): from month 19 to month 36

The PC must submit the corresponding periodic report within 60 days following the end of each reporting period. The periodic report includes:

- a. Technical report (main content):
 - Description of the work carried out by the partners;
 - Overview of the progress towards the objectives, including milestones and deliverables identified in the Description of the action. This report must justify the differences between work expected to be carried out in accordance with Annex 1 and work actually completed. The report must also detail the exploitation and dissemination of the results;
 - Summary for publication
- b. Financial report:
 - Individual financial statement from each partner for the reporting period concerned, detailing the eligible costs for each budget category according to the “Estimated budget for the action”.
 - The partners and affiliated entities must declare all eligible costs, even if they exceed the amounts indicated in the estimated budget. Amounts which are not declared in the individual financial statement will not be taken into account by the EC. Consequently, amounts which are not declared in the individual financial statement will not be funded by the EC.
- c. Each partner must certify that:
 - The information provided is full, reliable and true;



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- The costs declared are eligible;
 - The costs can be supported by adequate records and supporting documentation.
- d. Explanation on the use of resources and the information on subcontracting and in-kind contributions provided by third parties from each partner and from each affiliated entity, for the reporting period concerned;
- e. Periodic summary financial statement, created automatically by the electronic exchange system, consolidating the individual financial statements for the reporting period concerned and including the request for interim payment.

FINAL REPORT

The PC must submit a final report within 60 days following the end of the project. The final report will include the following contents:

- a. Technical Report (main content)
- Overview of the results and their exploitation and dissemination;
 - Conclusions on the action;
 - Socio-economic impact of the action.
- b. Financial Report
- Final summary financial statement, created automatically by the electronic exchange system, consolidating the individual financial statements for all reporting periods and including the request for payment of the balance;
 - Certificate on the financial statements (CFS) for each beneficiary and for each affiliated entity that requests a total contribution of EUR 430 000 or more, as reimbursement of actual costs and unit costs calculated on the basis of its usual cost accounting practices. The CFS must cover all reporting periods of the partner or affiliated entity indicated above;
 - The CFS is composed of two separate documents:
 - The Terms of Reference to be signed by the partner and the Auditor;
 - The Auditor's Independent Report of Factual Findings to be issued on the Auditor's letterhead, dated, stamped and signed by the Auditor (or the competent public officer) which includes the agreed-upon procedures to be performed by the Auditor, and the standard factual findings to be confirmed by the Auditor.

EC evaluations may start during implementation of the action and up to five years after the payment of the balance.

PAYMENTS

The PC is responsible for payments to partners according to Consortium Agreement agreed procedures. The PC will receive the payments from the EC and will distribute them to the partners:



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- Pre-financing payment;
- Interim payment/s;
- Payment of the balance

The PC will distribute the corresponding payments to the partners. Partners with Affiliated Entity are responsible to distribute them the corresponding payment.

Partners may not add costs not included in Annex 1 of GA, unless such additional costs have been previously validated by the PO or approved by an amendment in accordance with the Grant Agreement.

4.4 Dissemination of Results

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The protection of Intellectual Property Rights (IPR) and the associated procedures have been agreed and signed by the Partners in the Consortium Agreement. Ownership of results are defined in the Consortium Agreement.

Prior notice of any planned publication (paper in case of publications, abstract in case of participation in conferences) shall be given to the other partners at least 45 calendar days before the publication, by sending publication draft by e-mail to the PC and he will distribute it to the members of the GA of InterSTORE. Any objection to the planned publication shall be made in accordance with the Grant Agreement in writing to the PC and to the partner or partners proposing the dissemination within 30 calendar days after receipt of the notice. If no objection is made within the time limit stated above, the publication is permitted.

4.5 Visibility of EC funding

Any dissemination of results (in any form, including electronic) must:

- Display the European Union emblem in any of the forms shown in Figure 8.



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Figure 8 EU emblems

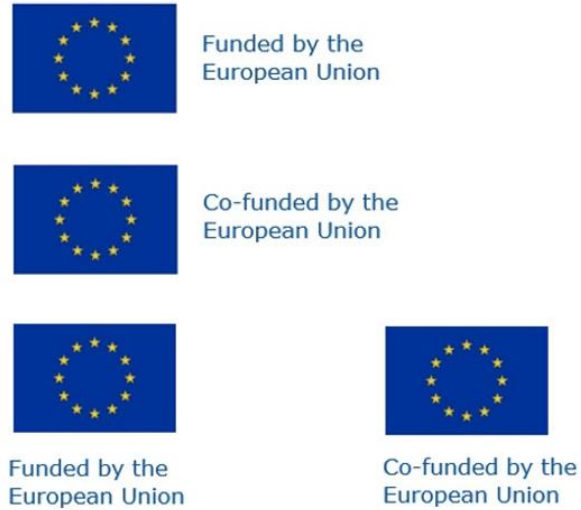


Figure 8: EU emblem

- Include the following disclaimer:
- *This project has received funding from the European Commission Horizon Europe Programme under Grant Agreement No. 101096511 Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.*



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5. Risk Assessment

Risk Assessment is a continuous process oriented to early identification of any deviation in the achievement of objectives and/or scope of the project work plan, in the foreseen timing with the allocated resources, and with the expected quality. Risk assessment intends to apply the right countermeasures and considers the steps shown below to minimize the unwanted effects.

In order to successfully accomplish this Risk Assessment process, the cooperation of the partners is mandatory. Partners must participate by providing risk input (any issue that might have negative impact over the success of the project) and supporting risk mitigation planning and execution activities. In this sense, Risk Assessment is a shared responsibility among all partners.

Each deliverable editor is responsible for the risk management of the deliverable. She/he is in charge of, and directly reports to its WP leader. At WP level, each WP leader is responsible for the compliance of his/her WP and reports directly to the PC regarding quality, scope, time, and cost. If a WP leader is not able to manage a certain risk, it will be immediately raised to the PMT. Risks involving any interdependency between WPs will be directly managed by the PMT. The PMT can escalate to the GA, depending on the risk nature and severity.

Non-technical risks (e.g., administrative, financial, legal) may affect multiple WPs and the partners of the project (such as a partner withdrawing from the project, overspending, IPR conflicts, etc.). These risks will be directly managed by the PMT in close collaboration with the GA.

A preliminary list of risks is shown in Table 13 and are also present in the Grant Agreement. If any new risk or challenge is identified, it will be monitored accordingly and the table of risks will be adequately updated when necessary.

Table 12 lists the risks and mitigation measures:

Risk nº	Description	WP nº	Proposed Mitigation Measures
1	Requirements and technical specifications are not in the state needed for the verification stage.	WP6, WP5, WP4, WP2, WP3, WP7	All partners shall actively participate in T2.3 “Requirements and use cases management”, which is devoted to tackle this issue. WP5 participants shall timely adapt to T7.1, T7.2, T7.3, T7.4.
2	Delay on the delivery of the WBG power semiconductor devices	WP4	Alternative Si devices in bare-die format will be used for setting-up the technological development tasks required for CE integration.
3	SCs and converter legs not working properly after manufacturing	WP4	Additional time extensions (3-4 months) and spare components must be foreseen for a second batch of manufactured SCs and converter legs.
4	Final prototypes cannot be delivered on time or are unfeasible to manufacture	WP6	The voltage rating of the mock-up converters will match that of the final converter prototypes. This way, the mock-up converters can act as a replacement for the final prototypes.



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5	Design and development WP does not deliver ontime the systems to be verified by WP7.	WP6, WP5, WP4, WP3, WP7	Monitor carefully, use dashboards to estimate the activities completion time, use earlywarning indicators.
6	Test environments are not ready to begin the verification or do not cover the necessities of all testcases.	WP7	Monitor carefully T7.1, T7.2, T7.3, and T7.4: start timely (if possible, anticipate the preparationfor the basilar/critical tests), and at the end of the first month of the tasks assure that what necessary for their continuation is ready.
7	Partners are unable to perform their disseminationduties to the full extent.	WP8	Development of a Dissemination and Exploitation Strategy with opportunities for each partner and guidance on project promotion; regularly informing partners of new informationavailable.
8	Budget underestimated for the proper activity realization	WP1	Budgets for each partner/task have been carefully calculated and checked by both technical and financial personnel within the partner's organization. This has minimized the probabilityof cost under/overestimation.
9	Key Deliverable delays	WP1	Whenever a deadline cannot be met, a provisional draft will be realized allowing any interdependency actions to be carried out. Milestones are placed to proactively control the higher risk technical portion of the work program where interdependencies may become critical.
10	Financial risk, bankruptcy of any of the partners	WP1	All partners are financially sound.

6. Conclusion

This deliverable is a manual and reference document for the partners to reach a common understanding of project procedures for an efficient implementation of the project with the aim of achieving the objectives fixed in the Grant Agreement. In addition, project responsibilities and schedule are presented and well defined within the document. Finally, it is worth noting that this document makes reference to the Grant Agreement and Consortium Agreement, and will need to be updated in the event of an amendment as well as other potential project modifications.