



Swappable Container Waterborne Transport Battery

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Reducing the Cost of Large Batteries for Waterborne Transport

D10.2

Data Management Plan

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GLOSSARY OF TERMS

Term	Definition
AB	Advisory Board
CD	Current Direct
DMP	Data Management Plan
EaaS	Energy as a Service
EC	European Commission
EEAB	External Expert Advisory Board
EMC	Electromagnetic Compatibility
EU	European Union
FAIR	Findable, Accessible, Interoperable and Reusable
GA	General Assembly
PC	Project Coordinator
PMP	Project Management Plan
PSC	Project Steering Committee
RAID	Risks, Actions, Issues, Decisions
RP	Reporting Period
TL	Task Lead
TPM	Technical Project Manager
WP	Work Package
WPL	Work Package Lead

DOCUMENT PROPERTIES

Project Information	
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Type (Distribution Level)	☒ PU, Public
	☐ CO, Confidential, only for members of the consortium (including the Commission Services)
	☐ EU-RES, Restricted, Classified Information
	☐ EU-CON, Confidential, Classified Information
	☐ EU-SEC, Secret, Classified Information

REVISION HISTORY

Version	Issue Date	Changes Made / Reason for Issue
0.1	19-Jan-23	Initial Version Submitted
1.0	23-Dec-24	Adapted version as per Request for revision comment

"This document reflects only the author's view and the Agency is not responsible for any use that may be made of the information it contains".

PROJECT SUMMARY

The transport sector contributes to almost a quarter of Europe's greenhouse gas (GHG) emissions. Compared to other sectors, such as agriculture or energy industries, it is the only sector with emissions higher than that of 1990. Waterborne transport emissions represent around 13% of the overall EU greenhouse gas emissions from the transport sector. Moreover, waterborne transport emissions could increase between 50% and 250% by 2050 under a business as-usual scenario, undermining the objectives of the Paris agreement. The challenge for a large-scale adoption and implementation of batteries for waterborne transport is mainly related to the high costs of the battery systems and cells.

The Current Direct project addresses these challenges by proposing an innovative lithium-ion cell optimized for waterborne transport, using novel manufacturing techniques allowing for a consistent cost reduction compared to the current market prices. Additionally, a swappable containerized energy storage system optimized for cost and operation in the waterborne transport industry will be developed.

The overarching aim of the Current Direct project is to develop and demonstrate an innovative interchangeable waterborne transport battery system and EaaS Platform in an operational environment at the Port of Amsterdam at TRL7 that facilitates fast charging of vessels, fleet optimization and novel business models. The Current Direct project is dedicated to (i) significantly reduce the total cost of waterborne transport batteries, (ii) cut GHG emissions of the marine transport sector through electrification of vessel fleets, (iii) increase the energy density of waterborne battery cells and (iv) trigger investments for innovation, job and knowledge creation in the European marine transport and battery sector.

The Current Direct EcoSystem is shown in

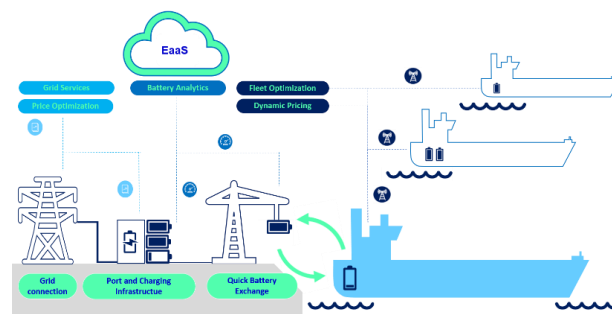


Figure 1. Current Direct EcoSystem

EXECUTIVE SUMMARY

This document outlines the Data Management Plan for the Current Direct project, providing an overview of what data will be created and how, and describe the plan for sharing and conservation. This includes restrictions for sharing data within the consortium and to external parties. Data management is meant to facilitate the sharing of results and knowledge thus enhancing collaboration between partners and promoting the EU's open science objectives by sharing data beyond the CD consortium. This research data management is done according to the FAIR principles.

The present document details the types of data have been generated and expected to be generated during the project and how they will be managed, following an established DMP template. The first version of the plan has been reviewed by the EC and this is a revised version that incorporates changes due to the termination of participation by Blackstone and Spear, and the addition of Leclanché to the project. This also resulted in the change of platform used by the CD consortium to share data and information, The Box has been replaced by an MS Share Point. Section 3.4 has been updated accordingly.

This document also includes an updated project summary, an executive summary, explanation on how we handle FAIR data, allocation of resources, data security measures, Ethical aspects, and a conclusion.

1. INTRODUCTION

This deliverable contains the Data Management Plan for the Current Direct project.

The deliverable has been structured to follow the European Commission guidelines on Data Management along the following aspects:

- Data Summary
- FAIR Data (Findable, Accessible, Inoperable, Reusable)
- Ethical Aspects

These are split out in the concrete topics:

- Meta Data
- Data description
- Data Access
- Data Sharing
- Data Security

For every relevant beneficiary, there has been made a Data Management summary table along these topics in Chapter 3.

2. DATA MANAGEMENT SUMMARY PER DATASET

The following sections describes the various data the Current Direct project will collect. This table explains the format used to describe each data set.

	Data owner	Responsible of storing and maintaining the information
	Identifier	Name and reference of the data set
	WP / Task	If relevant, provide the name of the WP and task/s for which this dataset will be used.
Metadata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	Keyword(s) that categorize data to make it linked/searchable
	DOI	Digital Object Identifier (if any)
	Conventions	1. Naming format 2. Versioning format
	Ontology	Ontology used to structure data (if any) and relevance to the data set and the project
Description	Source	Description of the origin and nature of the data
	Purpose	Main usage of the data being acquired/generated
	Objective	Link to CURRENT DIRECT objectives
	Acquisition	Acquisition/Generation protocol
	Formats	Format of the raw data (JSON, CSV, XML, ...)
	Size	1. Current (or foreseeable) size of the data set 2. Envisaged size of the data set by M36
	Utility	Stakeholders that will use this data and how will each of them use it
	Standards	List any standard/terminology/ontology/model that is relevant to your Use Case and specify: - How you would like to use it in your Use Case - URLs or references for more info, if any Specify if there are dictionaries with non-standard/custom codes (e.g.: 0 means male/ 1 means female)?

	Confidentiality	Private (just for data owner), Restricted (available for CURRENT DIRECT partners) or Open (accessible as Open Data)
Data Access	Open data	Yes/No (Part of the data) If not open access, explain why. If any legal issue is identified, explain in full detail, referring to regulation
	Access interface	Method (e.g.: Web service, FTP, SDK) or Software needed to access the information (if any)
	Location of source code	Source code repository used
	Restrictions	License restrictions. Need for aggregation and anonymization
Data sharing	Mechanisms	Adaptation to community standards for research.
	Location	Repository where it is stored
	Re-use License	Re-use license (if any)
	Time frame	Time period when data is made available. Point out potential embargo periods. Specify if it will be available after the project end.
	Storage and backup	Long-term preservation procedure, expected size of the backup, and associated costs of preservation.
Security	Privacy	Existence of personal or sensitive data
	Auditing	Audit mechanism used to record transactions
	Certification	Certification or standard used for security

2.1. Battery Cell Data

Data owner		Leclanché GmbH
Identifier		Battery Performance Data
WP / Task		WP3 T3.1, T3.3; WP4 T4.1; WP5 T5.1, T5.2 ; WP6 T6.3, T6.5, T6.6
Metadata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	Lithium ion, state of health, battery
	DOI	Digital Object Identifier (if any)
	Conventions	1. Naming format – to be defined in T5.1 2. Version format – to be defined in T5.1
	Ontology	To be defined in T5.1
Description	Source	Performance and life cycle data for state-of-the-art marine lithium cell, Current Direct prototype cell, and back up cell candidates collected by Leclanché . Battery pack data collected by Leclanché during integration testing and during demonstration.
	Purpose	Determine if Current Direct prototype cell, commercial back up cell, and the Current Direct battery system meet project KPIs. Parameterize and validate physics based and data driven cell models for SOH.
	Objective	Validate cell and battery performance (SO1 and SO2 of the GA). Support the creation and validation of SOH models. Cell models will support the battery analytics platform that contributes to the fleet optimization and payment engine of the EaaS platform.
	Acquisition	Data will be captured real time by battery cyclers for cells and the Leclanché BMS for battery systems. In the following steps the data from multiple Arbin cyclers will be automatically copied to a networked file store (MS Sharepoint) and translated into a software system. The resulting storage format will be immediately available for further processing and web presentation.
	Formats	The data is stored in SQL tables but indirectly managed by an implemented Data Model system.
	Size	During cell testing we will generate 16.6 million data points per day (3 per second for 64 cells). Battery testing during the

Data owner		Leclanché GmbH
		demonstration will generate 291 million data points per day (2 per second for 1680 cell groups plus 7 current measurements). 12 months of each will generate 112 billion data points.
	Utility	Leclanché and U Hasselt will use the data to parameterize and validate the battery aging models. Blackstone will use the data to determine the cell prototype meets project KPIs. Leclanché will use the data to determine the battery system meets project KPIs.
	Standards	No relevant standards identified
	Confidentiality	Private
Data Access	Open data	No. Data is restricted contractually by cell manufactures. It presents a competitive commercial exploitation advantage for consortium partners as discussed in section 2.2.2.1 of Annex 1, Part B of the GA.
	Access interface	The data operators will access the data through a Web Portal. The portal will allow to review the data in the form of plots and diagrams and to download the original data in CSV files for external processing.
	Location of source code	The source code of the data management system is versioned in a git repository managed by Leclanché GmbH.
	Restrictions	Data is aggregated and anonymized for publications.
Data sharing	Mechanisms	N/A
	Location	VPS hosted by DigitalOcean
	Re-use License	To be determined
	Time frame	N/A
Security	Storage and backup	The entire database is backed up daily to server(s) away from the original VPS and the provider's network. A copy of the database will be stored on Leclanché's network storage infrastructure
	Privacy	No personal data is used or stored
	Auditing	Audit mechanism used to record transactions
	Certification	TBD

2.2. Vessel Operational Data

Data owner		Kotug & Leclanché GmbH
Identifier		Vessel operational data
WP / Task		WP6 T6.5, T6.6; WP8 T8.2
Metadata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	Inland waterway transport, barge, tanker, bulker, container ship
	DOI	Digital Object Identifier (if any)
	Conventions	1. Naming format – to be defined in T5.1 2. Version format – to be defined in T5.1
	Ontology	To be defined in T5.1
Description	Source	Data collected by Kotug
	Purpose	Data will help to refine the algorithms in the EaaS platform predicting required demand to better allocate battery container placement and charge state.
	Objective	Support creation and demonstration of the EaaS platform, SO5 and SO7 of the GA.
	Acquisition	To be determined
	Formats	To be determined
	Size	To be determined
	Utility	Kotug will use it to refine and optimize operational decisions. Leclanché GmbH, Foreship, and Rhoe will use it to adjust EaaS algorithms for battery distribution and charge state.
	Standards	N/A
	Confidentiality	Private
Data Access	Open data	No. Data presents a competitive commercial exploitation advantage for consortium partners as discussed in section 2.2.2.1 of Annex 1, Part B of the GA.
	Access interface	To be determined
	Location of source code	To be determined
	Restrictions	Data is aggregated and anonymized for publications.
	Mechanisms	N/A

Data owner		Kotug & Leclanché GmbH
	Location	Hosted by DigitalOcean
	Re-use License	To be determined
	Time frame	N/A
	Storage and backup	To be determined
Security	Privacy	No personal data is used or stored
	Auditing	Audit mechanism used to record transactions
	Certification	To be determined

2.3. Stakeholder Contact Information

	Data owner	EDP New
	Identifier	Current Direct Stakeholders
	WP / Task	WP9 T9.2, T9.3
Metadata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	Inland Waterway Transport, Shipping
	DOI	N/A
	Conventions	TBC
	Ontology	N/A
Description	Source	Stakeholders who volunteer their contact information.
	Purpose	Dissemination of results
	Objective	S08 of the GA
	Acquisition	Collected via https://www.current-direct.eu/contact/
	Formats	CSV
	Size	Currently 150 lines, we don't anticipate more than 300-400.
	Utility	EDP and Leclanché GmbH for stake holder engagement and dissemination
	Standards	N/A
	Confidentiality	Restricted to CURRENT DIRECT partners
Data Access	Open data	No. Personal data is protected by GDPR from dissemination
	Access interface	TBD
	Location of source code	TBC
	Restrictions	N/A
Data sharing	Mechanisms	N/A
	Location	TBC
	Re-use License	N/A
	Time frame	Data will be retained for 6 months following the end of the project then will be no longer available.
	Storage and backup	The size is trivial, less than 1000 records.

Data owner		EDP New
Security	Privacy	This data set is personal data protected by GDPR restrictions.
	Auditing	N/A
	Certification	TBC

2.4. EIS data for quality assurance and BMS (TBD)

Data owner		
	Identifier	EIS data for quality assurance and BMS
	WP / Task	TBD
Metad ata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	TBD
	DOI	TBD
	Conventio ns	TBD
	Ontology	TBD
Descrip tion	Source	The data mainly originate from ...
	Purpose	TBD
	Objective	TBD
	Acquisitio n	TBD
	Formats	TBD
	Size	TBD
	Utility	TBD
	Standard s	TBD
	Confident iality	TBD
Data Access	Open data	TBD
	Access interface	TBD
	Location of source code	TBD
	Restrictio	TBD

	ns	
Data sharing	Mechanisms	TBD
	Location	TBD
	Re-use License	TBD
	Time frame	TBD
	Storage and backup	TBD
Security	Privacy	No personal data is used or stored.
	Auditing	TBD
	Certification	TBD

2.5. Smart Cell Supervisor EMC performance

Data owner		Vito
Identifier		Smart Cell Supervisor
WP / Task		WP4, T4.3, D4.2
Metadata	General	European Union H2020 CURRENT DIRECT GA 963603
	Specific	Smart Cell Supervisor, BMS Components, EMC Performance, Battery Passport
	DOI	N/A
	Conventions	TBC
	Ontology	N/A
Description	Source	The data mainly originate from laboratory experiments and testing at Vito.
	Purpose	Develop Smart Cell Supervisor to ensure safe operation of Batteries in a cost effective way. Innovative distributed approach monitoring and managing individual cells.

Objective	BMS cost Reduction by eliminating cabling etc, Performance enhancement of Battery. Implementation of Battery Passport concept.
Acquisition	Data were captured real time, processed and copied to a networked file store (MS Share Point) accessible to Leclanché GmbH.
Formats	Original data from measuring devices are processed and stored in Word Excel and Power point formats for an easy exploitation by Leclanché GmbH.
Size	Tbc
Utility	Data can be used for Battery Management and Battery diagnostics
Standards	N/A
Confidentiality	Report on D4.2 is public The data are only open to Current Direct consortium
Open data	Report on D4.2 is public The data are only open to Current Direct consortium
Access interface	
Location of source code	The source code of the data is versioned in an online repository (MS Share Point) managed by Leclanché GmbH.
Restrictions	Part of data is aggregated and anonymized for publication.
Mechanisms	N/A
Location	TBD
Re-use License	TBD
Time frame	N/A
Storage and	The data are stored in Vito server with a copy online in MS Share Point accessible to Leclanché.

Security	backup	
	Privacy	No personal data is used or stored.
	Auditin g	N/A
	Certific ation	N/A

2.6. Composite Structure mechanical properties

Data owner		VUB
Metadata	Identifi er	Composite Structure Mechanical Properties
	WP / Task	WP4, T4.4
	Gener al	European Union H2020 CURRENT DIRECT GA 963603
	Specif ic	Composite Materials; Anisotropic properties; thermal barrier; in plane thermal conductivity; mechanical properties.
	DOI	N/A
	Conve ntions	Non-disclosure agreement between Leclanché and VUB.
	Ontol ogy	N/A
	Sourc e	The data mainly originate from laboratory experiments and testing at VUB.
	Purpo se	Develop composite material with adequate thermal and mechanical properties to be used in battery cell. The composite is made of 2 thermally conductive layers (skin layers) and one core thermally insulating layer.
	Objec tive	Reduce material and assembly costs of battery systems without compromising safety and supporting easy recyclability.
Description	Acqui sition	Data were captured real time, processed and copied to a networked file store (MS Share Point) accessible to Leclanché.
	Form	Original data from measuring devices are processed and stored in Word Excel

	ats	and Power point formats for an easy exploitation by Leclanché.
	Size	122 files / total size ca 5 Gb
	Utility	The key properties considered in Composite Material development included anisotropic thermal properties, structural properties, design features (cell / assembly alignment to support automation), low cost, volume and mass.
	Standards	The composite material should meet the requirement defined by Leclanché.
	Confidentiality	The data are only open to Leclanché.
Data Access	Open data	No. Data are restricted to Leclanché. Part of data are anonymized for publication.
	Access interface	
	Location of source code	The source code of the data is versioned in an online repository (MS Share Point) managed by Leclanché.
	Restrictions	Part of data is aggregated and anonymized for publication.
Data sharing	Mechanisms	N/A
	Location	https://rhoe.sharepoint.com/sites/currentdirect/Shared%20Documents/Forms/AllItems.aspx
	Reuse License	To be determined.
	Time frame	N/A

Security	Storage and backup	The data are stored in VUB one drive with a copy online in MS Share Point accessible to Leclanché.
	Privacy	No personal data is used or stored.
	Auditing	N/A
	Certification	N/A

2.7. Third party data

In addition to the data generated by the project, the project will also use third party data provided by consortium partners, other EU Horizon projects, and academia. The consortium partners will respect all conditions for licensing, use, and confidentiality as specified by the data set owners. The following data sets will be used by the project.

- A. Aviloo's existing electric vehicle battery performance data
- B. CCNR Roadmap for Reducing Inland Navigation Emissions
- C. Kotug's vessel operational data
- D. Prominent study on inland vessel classes' energy consumption
- E. Marine Traffic vessel and port data
- F. Leclanché's deployed marine battery performance data
- G. Leclanché's field EMC data for marine batteries

3. FAIR DATA

3.1. MAKING DATA FINDABLE, INCLUDING PROVISIONS FOR METADATA

[Persistent identifiers](#)

Unless any project beneficiary applies persistent identifiers for their own use, no persistent data identifiers are envisaged for the purposes of information sharing between partners in the project. However, any datasets made available as open data will leverage the possibilities for persistent identifiers as provided by the host platform.

[Provision of rich metadata to allow discovery, general standards](#)

The consortium is aware of ongoing efforts to define a common battery language, however, not of any ready-to-use taxonomy or similar specifically tailored for batteries or even for structural batteries. The Current Direct consortium will leverage whatever possibilities are offered by the repository in which any open data from the project are hosted.

The beneficiaries providing the data will provide metadata such that interested parties will gain an understanding of the provenance and meaning of the data that is sufficient to interpret and reuse it. Some of the main types of metadata that are envisaged include:

- Description of the test setup from which the data was generated
- Meaning of the different fields/variable in the data files
- Reference to the project in which the data was generated, for further information and context.

This will for instance be done via open access publications in journals, in which the standards of the journal are followed and in public deliverables. The metadata linked to that publication will be stored in an open repository.

[Use of keywords provided in the metadata to optimize the possibility for discovery and re-use.](#)

Several keywords will be used. The consortium is aware that some data can be used in a wider area than batteries and specific keywords will also be provided.

3.2. MAKING DATA ACCESSIBLE

Repository: Most probably zenodo.org will be used. Others might apply for instance linked to specific journal.

If data are published in open access, data and metadata will be stored in a trusted repository. Only repositories that assign a digital object identifier (DOI) will be used.

Data:

Data are subject to a case-per-case evaluation to determine whether they should be made openly available, in order to protect industrially/commercially sensitive information. Only selected data will be shared after internal consultation and approval in the consortium.

Embargo's might be applied to make data publicly available especially to allow IP rights protection; to be determined on a case-by-case basis.

Open data will be published in common formats where this is possible and makes sense. The access protocol will most likely simply be https (we expect to use zenodo.org)

[In case of restrictions on use](#)

For those data for which restrictions apply, it will be determined on a case-by-case basis how and when the data will be made public.

[Identification of the persons accessing the data](#)

For open data, no tracking of people accessing the data is planned from CURRENT DIRECT consortium side. From the host platform side, identification will take place via the authentication protocols and server logs of the platform itself.

[Need for a data access committee \(to evaluate/approve access requests to personal/sensitive data\)](#)

No personal or sensitive research data is planned to be generated, much less shared, in the CURRENT DIRECT project. For non-research personal data, beneficiaries in the project are requested to fill out a consent form regarding the use of photo or video material featuring still or animated images of individuals.

[Metadata:](#)

[Availability of metadata](#)

The open availability of data and metadata is to be determined on a case-by-case basis.

Generally, where data is made available, it will contain the information needed in order to access it (we expect this will be simply via zenodo.org for all partners, but when publishing in certain journals, the metadata and data can go in a specific repository linked to that journal).

[Period during which data and metadata are available](#)

The period depends on the policies of the host platform. Once approved for publication as open data, the consortium does not envisage an expiry date. Rather, potential users can determine whether the data is of interest based on its content and age.

[Availability of software; inclusion of relevant software](#)

We expect any data that is generated to be readable with generally available tools (word processors, PDF and image viewers, spreadsheet software). Else, the data will be transferred to a common format. Code generation is not required or expected as part of the project.

3.3. MAKING DATA INTEROPERABLE

[Type of data and metadata vocabularies, standards, formats or methodologies](#)

Please see section 3 for the type of data that will be stored.

[project specific ontologies or vocabularies](#)

See section 3. Any open data will be transferred into a common language and no specific vocabulary is used in the project. Any open data shared will be accompanied by adequate metadata to enable interpretation and reuse of the data.

[Use of qualified references 2 to other data \(e.g. other data from your project, or datasets from previous research\)?](#)

To be determined.

2 A qualified reference is a cross-reference that explains its intent. For example, X is regulator of Y is a much more qualified reference than X is associated with Y, or X see also Y. The goal therefore is to create as many meaningful links as possible between (meta)data resources to enrich the contextual knowledge about the data. (Source: <https://www.go-fair.org/fair-principles/i3-metadata-include-qualified-references-metadata/>).

3.4. INCREASE OF DATA RE_USE

How will you provide documentation needed to validate data analysis and facilitate data re-use (e.g. readme files with information on methodology, codebooks, data cleaning, analyses, variable definitions, units of measurement, etc.)?

For any open data, this will be provided along with the data (probably as part of the metadata) on the chosen repository.

Will your data be made freely available in the public domain to permit the widest re-use possible?

Will your data be licensed using standard reuse licenses, in line with the obligations set out in the Grant Agreement?

This will be decided on a case-by-case basis. Generally, where the consortium does decide to make data available in open access, this will be in the public domain with the most permissive possible reuse licences (while respecting project beneficiary IPRs).

Will the data produced in the project be useable by third parties, in particular after the end of the project?

Yes, for any data published as open data since the purpose of such publication is the use and reuse by other parties. For any other data, that is regulated in the project's Consortium Agreement ("Results").

Will the provenance of the data be thoroughly documented using the appropriate standards?

Yes, where standards exist. Where useable standards are absent, adequate documentation with reasonable effort will be produced such that third parties can interpret and reuse the data.

Describe all relevant data quality assurance processes.

Data quality assurance generally rests with the project beneficiary generating the data. For open data, this will be reviewed prior to a publication by a project body to be determined (e.g., WP leaders, individual partners, or as otherwise appropriate)

Further to the FAIR principles, DMPs should also address research outputs other than data, and should carefully consider aspects related to the allocation of resources, data security and ethical aspects.

More information on research outputs can be found in CURRENT DIRECT deliverable Dissemination and communication plan.

4. OTHER ISSUES

4.1. OTHER RESEARCH OUTPUTS

Management of other research outputs that may be generated or re-used throughout their projects.

The development of new materials and testing of combinations of such materials in battery cells (and larger aggregations, such as in modules) is a central goal of the project. The management of such outputs is covered through the intellectual property management, regulated in the project's Consortium Agreement and supported and further managed as part of the project's exploitation and IPR management (Task 8.6). It will also be documented in the project's technical deliverables.

Beneficiaries should consider which of the questions pertaining to FAIR data above, can apply to the management of other research outputs, and should strive to provide sufficient detail on how their research outputs will be managed and shared, or made available for re-use, in line with the FAIR principles.

An important part of the project's deliverables are classified as "public" with respect to their dissemination level. On top of that, data and 'extra' data and findings will be published by the academic partners. During specific meetings, the IPR and use of results is discussed along with the use of 'other research output' which already leads to ideas for follow up projects.

4.2. ALLOCATION OF RESOURCES

What will the costs be for making data or other research outputs FAIR in your project (e.g. direct and indirect costs related to storage, archiving, re-use, security, etc.)?

Generally, the generation of data will be a part of the project activities, therefore no specific/additional resourcing is allocated for this. Some partners have a budget for open access publications. Where curation and preparation of open data is concerned, this will be done using the resources for the beneficiary generating that data, with support from WP leader and/or project coordinator as needed.

How will long term preservation be ensured? Discuss the necessary resources to accomplish this (costs and potential value, who decides and how, what data will be kept and for how long)?

The use of Zenodo (<https://zenodo.org/>) is advised to the partners. It is expected that the service remains free.

4.3. DATA SECURITY

Provisions for data security

Sharepoint is used as the first data repository. Next to that, data security is as per the policies and procedures of each project beneficiary, and particularly those generating or owning the data.

Generally, state-of-the-art data security is assumed to be in place. For open data, the consortium relies on the data security provision of the host repository.

Will the data be safely stored in trusted repositories for long term preservation and curation?

Yes, open data, if any, will be stored in a trusted repository (probably zenodo.org).

4.4. ETHICS

The ethics question and how to deal with them has been dealt with in deliverable D1.1

No personal data will be preserved after the end of the project.

5. CONCLUSION

The Data Management Plan outlines the strategies for data management based on the available information end of 2024. The plan takes into consideration the differences between several topics of the project, where specific partners collaborate and generate specific data. The six internal topics are:

1. Battery Cell Data
2. Vessel Operational Data
3. Stakeholder Contact Information
4. EIS data for quality assurance and BMS
5. Smart Cell Supervisor EMC performance
6. Composite Structure mechanical properties

Finally, also third party data will be used. The main platform to share data within the project will be MS Share Point. While beneficiaries are encouraged to look for ways to share data with the research community, they are under no obligation to disclose data if this goes against their interests or if there is an embargo period in place.

To ensure transparency and ongoing relevance, this document will be updated as needed.