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SOLIDBAT

Deliverable D1.3

Data Management Plan

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EURIDA

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DOCUMENT CONTROL SHEET

PROJECT INFORMATION

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*GA: Grant Agreement

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[1]WP: Work Package; [2]DMP: Data Management Plan; [3]DEC: Websites, patent filings, videos, etc.; [4]PU: Public, fully open; [5]SEN: Sensitive, limited under the conditions of the GA;
[6]Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444
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1	28/05/2025	Rita Clancy, EURIDA	Final version	N/A

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List of Abbreviations

Abreviation	Definition
CAM	Cathode Active Material
CCD	Charge-Coupled Device
CV	Cyclic Voltammetry
DEP	Dissemination, Communication and Exploitation Plan
DFT	Density Functional Theory
DMP	Data Management Plan
DOI	Digital Object Identifier
DSC	Differential Scanning Calorimetry
EEA	European Economic Area
EIS	Electrochemical Impedance Spectroscopy
FTIR	Fourier Transform Infrared Spectroscopy
GA	Grant Agreement
GDPR	General Data Protection Regulation
GPC	Gel Permeation Chromatography
HEU	Horizon Europe
HGPE	Hybrid Gel Polymer Electrolyte
ICP-OES	Inductively-Coupled Plasma Optical Emission Spectroscopy
IP	Intellectual Property
KPI	Key Performance Indicator
LATP	Lithium Aluminium Titanium Phosphate
LCA	Life-Cycle Assessment
LCC	Life-Cycle Costing
LLZO	Lithium-Lanthan-Zirconium-Oxide
LSV	Linear Sweep Voltammetry
MD	Molecular Dynamics
NMC	Nickel Manganese Cobalt
NMR	Nuclear Magnetic Resonance
OCV-SOC	Open Circuit Voltage-State of Charge
PDEs	Partial Differential Equations
RRI	Responsible Research and Innovation
SAXS/WAXS	Small-Angle X-Ray Scattering/Wide-Angle X-Ray Scattering
SEI	Solid Electrolyte Interphase
SEM/TEM	Scanning Electron Microscopy/Transmission Electron Microscopy

SEN	Sensitive
SSB	Solid-State Battery
TGA	Thermogravimetric Analysis
TRL	Technology Readiness Level
WP	Work Package
XPS	X-Ray Photoelectron Spectroscopy

CONTENTS

1 EXECUTIVE SUMMARY

This document represents deliverable D1.3 – "Data Management Plan" of the SOLIDBAT project (Grant Agreement No. 101130249), funded under the Horizon Europe Research and Innovation Programme (HEU).

The SOLIDBAT consortium has identified several areas that need to be addressed in the context of data management and the public sharing of research data, which are: Data protection and confidentiality, personal data from working with external experts and participants, and limitations in open data sharing to avoid the risk of IP loss.

The latter is of particular importance as SOLIDBAT is an Innovation Action that will result in technology advancements that are highly relevant for commercial exploitation and market uptake. Therefore, all data generated will first be thoroughly assessed by all partners for data confidentiality and sensitiveness in the context of IP protection. Only data authorised by all project partners will be openly shared.

For some activities carried out by the project (i.e. stakeholder engagement), it may be necessary to collect basic personal data (e.g. name, background, contact details), even though the project will avoid collecting such data unless necessary. Such data will be protected in accordance with the EU's Data Protection Directive 95/46/EC1 of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data. National and local legislations applicable to the project will also be strictly applied.

By default, all personal data, or data directly related to external stakeholders, will only be collected when the project has received a signed informed consent form from the subjects participating.

This is the first version of the project Data Management Plan (DMP). It contains preliminary information about the data the project will generate, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved. The purpose of the Data Management Plan is to provide an outline of the main elements of the data management policy that all consortium partners will have to comply with for all datasets that will be generated by the project. The DMP is not a final report but represents a living document that will evolve during the term of the project. Updates of this DMP are planned as deliverables D1.4 (first update, due 31st May 2026), D1.5 (second update, due 30th Nov 2027) and D1.6 (final version, due 30th Nov 2028).

2 INTRODUCTION

The SOLIDBAT initial Data Management Plan (DMP) has been developed using FAIR data principles, which means making data **f**indable, **a**ccessible, **i**nteroperable and **r**eusable. The DMP outlines which datasets the project will generate, compile and/or re-use, and how these datasets will be curated, stored and made accessible. The DMP also describes the measures that have been and will be taken to safeguard and protect sensitive data as well as the procedures that assure that the produced data and results that can be shared openly will be easy to locate and access by a wider public.

SOLIDBAT has chosen to use the Data Management Plan Template that is provided by the European Commission and recommended for Horizon Europe beneficiaries.

At present, very little data has been generated and/or collected by the project. The SOLIDBAT DMP is designed to be a 'living' document that will, in this initial version, provide the overall strategy and processes how the SOLIDBAT research data will be handled during and after the project. During the project the DMP will be extended, reviewed and updated whenever significant changes or cut-off points arise, such as (but not limited to):

- new data are being generated, re-used, collected and/or gathered in any way
- deliverable reports are due representing updated versions of this initial DMP (i.e. D1.4 due in May 2026, D1.5 due in Nov 2027 and D1.6 as final version due in Nov 2028)
- periodic reports are being developed and submitted (incl. the final project report)
- adjustments to the data management strategies become necessary
- changes in individual members' data policies occur
- changes in the consortium composition and external factors occur (e.g. new consortium members joining or existing members leaving).

In preparation for this report the SOLIDBAT partners considered a number of issues to be addressed, which are described in this report in sections 2 'Data Summary' and 3 'Making data accessible'.

All aspects will have to be answered to for each update and for each generated dataset or data collection that will be added during the term of SOLIDBAT.

EURIDA will be responsible for communicating this DMP to all project partners and for organising the regular reviews and updates of the DMP. Each project partner will be responsible for managing their data, metadata, and ensuring their data meets the data quality and management standard set out in the SOLIDBAT DMP. SOLIDBAT coordinator, CICe, will be responsible for the overall coordination of data management and the compliance with rules, regulations and legal aspects of data management processes as part of the overall scientific coordination and management of SOLIDBAT.

2.1 The overarching SOLIDBAT data management strategy

SOLIDBAT's overall data management strategy follows the principle of Responsible Research and Innovation (RRI). This entails to be as open as possible, but under the consideration of strict ethics and integrity principles and respecting the requirement to protect and exploit results and intellectual property for maximum societal benefit.

SOLIDBAT, with its focus on novel solid-state batteries (SSBs) for application cases such as passenger electromobility and transport and stationary applications, faces particular challenges in terms of handling IP sensitive data and assuring its protection for future exploitation.

Being positioned at medium technology maturity levels (TRL6) at the project end, SOLIDBAT targets application cases with clear commercial prospects in a highly innovative battery and technology field that could put Europe in the lead of frontier research and innovation.

Resulting outputs and data require clear and sound management strategies to guarantee the non-disclosure of data, either for exploitation or for legal and/or ethical reasons and to secure maximum project impact.

Besides those types of confidential data, SOLIDBAT will further generate data that will not underly any restrictions, neither for ethical, legal, nor for commercial reasons. Sharing such data openly, widely and proactively will increase the impact that SOLIDBAT will have in a long term. Especially the wider battery and mobility as well as stationary energy storage end user community will benefit from accessing and re-using the data generated by SOLIDBAT.

Handling the different types of data will require a data management strategy that reflects the various needs for screening, categorising, curating, storing, protecting and/or sharing the data.

The overall workflow and procedures used in SOLIDBAT to ensure the effective protection of sensitive data and the open access to non-confidential research data is shown in **Figure 1**. The screening process covers IP and commercial interest, ethics and possible issues with data quality, replicability or other issues. In case an issue is detected that hinders the open data sharing ('YES' in Figure 1), the data will either be kept confidential and transferred to the SOLIDBAT Exploitation Roadmap (IP issues) or underly restricted access (Ethics) or will undergo additional verification steps (e.g. data replication) in the associated technical work tasks.

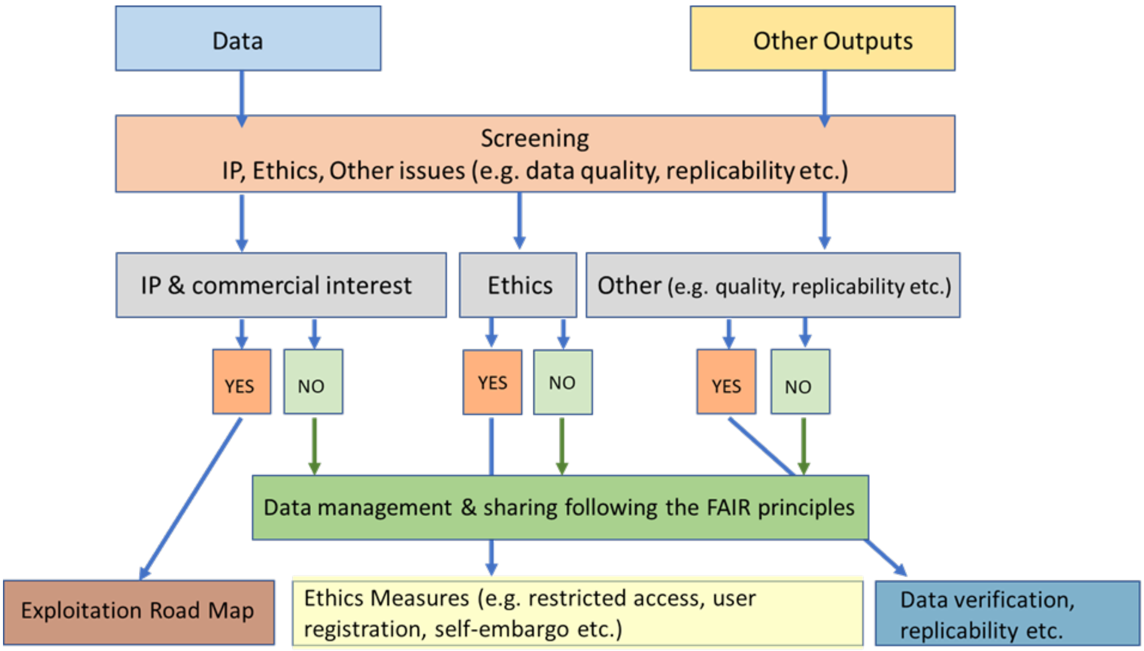

Figure 1 SOLIDBAT workflow for data management

2.2 Data underlying outputs for commercial exploitation

During the lifetime of the project, partners will very likely discover business opportunities based on the project's results that can lead to commercial exploitation. This will be monitored by the Exploitation and IP Managers of the project, supported by the business development and/or IP departments in the respective beneficiaries' organisations where applicable. If possible, business cases arise, appropriate steps to protect such results for exploitation purposes will be taken. As explained in the overall data management strategy (Section 1.1) and displayed in Figure 1, data underlying such results will not be openly shared.

2.3 Personal data and individual participants

To protect the privacy of individual participants only data that can be irreversibly anonymised to the degree that it is impossible to identify individuals will be shared publicly. During the SOLIDBAT project term personal data may be collected for the dedicated stakeholder engagement formats 'Wider End User Panel' and 'Citizen Panel'. Results from meetings, round table discussions and semi-structured interviews will be processed to contribute to the project results (WP8). Especially the SOLIDBAT Citizen Panel will involve the collection of personal data as well as semi-structured data about expectations, concerns and the general acceptance of citizens of the SSB technology and its use in the automotive and stationary energy sectors.

All participants in the Stakeholder Panels will sign an Informed Consent Form before the start of the activities, so that they are aware of the action and to assure the confidentiality of exchanges, including personal data where involved, the purpose of the activities and conditions of their participation.

In cases of feedback collection through interviews or questionnaires, all materials and responses will be anonymized or pseudonymized to guarantee the confidentiality of information. The data will be analysed using a code system and will be publicly shared grouped only by variables such as: Gender, age, country of origin, industrial sector, etc.

No sensitive data will be collected throughout the project and no vulnerable groups will be involved.

Therefore, no specific Ethics issues and mitigation actions are expected for SOLIDBAT. Public deliverables, publications and anonymised datasets will be shared openly through an open research data repository further described in Section 3.

2.4 Legal frameworks

As of May 2018, the General Data Protection Regulation (GDPR)[1] is applicable in all Member States in the European Union, as well as in the countries in the European Economic Area (EEA). GDPR updates and modernises existing laws on data protection to strengthen citizens' fundamental rights and guarantee their privacy in the digital age.

GDPR regulates the processing by an individual, a company or an organisation of personal data relating to individuals in the EU. It does not apply to the processing of personal data of deceased persons or of legal entities. It sets down one set of data protection rules for all companies and organisations operating anywhere in the EU and European Economic Area (EEA), for two main reasons: 1) to give people more control over their personal data,

[1] https://gdpr.eu/

2) level the playing field for businesses and organisations operating in the EU and EEA. GDPR grant individuals a set of rights that must be protected by any actor who processes personal data. The individual rights include the right to:

- information about the processing of an individual's personal data;
- obtain access to the personal data held about an individual;
- ask for incorrect, inaccurate or incomplete personal data to be corrected;
- request that personal data be erased when it's no longer needed or if processing it is unlawful;
- object to the processing of personal data for marketing purposes or on grounds relating to your particular situation;
- request the restriction of the processing of personal data in specific cases;
- receive personal data in a machine-readable format and send it to another controller ("data portability"); and request that decisions based on automated processing concerning an individual or significantly affecting them and based on personal data are made by natural persons, not only by computers. Individuals can also have the right in this case to express their point of view and to contest the decision.

3 DATA SUMMARY

The Annex to this report provides a list of all datasets currently envisaged to be generated and/or re-used by SOLIDBAT and their planned management procedures. This list will be updated and refined as the project matures, and results and progress are achieved.

In the following the general strategies for generating and/or re-using data and managing the individual datasets as well as the rules agreed by all SOLIDBAT consortium partners for data curation, storage, accessibility and protection (where required for legal, ethical or IP protection requirements) are explained as far as possible at this stage of the project. Additional analyses will be performed and further plans and responses given as the project matures.

3.1 Purpose of the data generation or re-use and its relation to the SOLIDBAT objectives and target groups

This section of the DMP and its future updates responds to the following questions:

- ➢ What is the purpose of the data generation or re-use and its relation to the objectives of SOLIDBAT?
- ➢ To whom might your data be useful ('data utility'), outside your project (target groups and stakeholders, e.g. which end users, policymakers, scientific community for re-use etc.?

- **Laboratory experimental characterization data:**

SOLIDBAT will perform several characterisation steps to better understand and optimise the performance and behaviour of battery components and ageing processes of the SOLIDBAT SSBs.

Data will result from:

- The characterisation of hybrid gel polymer electrolyte (HGPE) through various electrochemical techniques (incl. EIS, LSV, CV, chronoamperometry, etc.), vibrational spectroscopy (FTIR, Raman) and thermomechanical characterization (TGA, DSC, tension test). Absence of leakage will be evaluated through mass monitoring. The objective is to obtain an optimal electrolyte composition allowing the HGPE to meet the specifications defined in WP2 and ultimately be used in monolayer cells and then scaled up in prototypes.

- The characterization of the cathode will have a three steps assessment: 1) Coated cathode active material (CAM) particles will be characterized by SEM/ TEM, Raman spectroscopy, solid-state NMR, ICP-OES, XPS, FTIR, to guarantee the formation of a homogenous coating; 2) synthesized aqueous-processable binder will be characterized by means of NMR, DSC, TGA, GPC, LSV, viscosity measurements; and 3) developed high loading cathode will be validated by SEM, peeling test, electronic conductivity measurements, TGA and electrochemical tests.
- The evaluation of the Lithium/HGPE interface compatibility, such as its chemical and electrochemical stability during cycling as well as the impact of high current densities (CCD, cycling, electrochemical impedance spectroscopy, SEM).
- The experimental multi-*operando* characterisation in full cell configuration, for instance XPS, Raman spectroscopy, SAXS/WAXS with electrochemistry, or temperature and pressure measurements combined with fast imaging to investigate *in operando* mode the cell behaviour in abuse condition. Here it is expected to get a better understanding and to selectively target the charge dynamic processes at the battery interfaces. The developments include design and optimization of sample holders and the effective use of workflows among multi-*operando* techniques to improve the knowledge of the charge dynamics (ionic and electronic) processes involved in battery interfaces at different time and scale resolutions. Additionally, in situ dendrite growth characterization will be done by means of EIS and optical microscopy. The objective will be to probe interfacial and interphase kinetics associated with lithium deposition and dissolution.
- Lab-scale recycling experiments to evaluate the suitability of a direct recycling route to recycle cathode production scraps and, in this context, the characterization of the recovered materials.

Generally, main beneficiaries of lab experimental characterization data will be other researcher groups working with similar materials and chemistries within the area of solid-state batteries.

Further data will cover the results of SSB cells (1 Ah and 5 Ah cells) in terms of electrochemical (cycle life, OCV-SOC, rate capability) characterization, ageing tests and abuse tests. In addition, experimental data will also be generated when SSB modules are tested under different operating conditions. This data will be useful for manufacturers, industry and end users and wider target groups and stakeholders.

▪ **Simulation or modelling data:**

SOLIDBAT will develop multiscale and multiphysics models predicting:

i) cell performance
ii) temperature distribution
iii) safety, and
iv) long-term ageing behaviour for varying load profiles, ambient conditions, and external requirements.

A phase-field approach will be employed to simulate lithium plating and stripping dynamics in the presence of a dynamic SEI. In addition, continuum-scale modelling will be carried

out by coupling mechanical and electrochemical models to enable a detailed understanding of ageing processes in solid-state battery (SSB) cells.
While the electrical data required for parametrization will be generated by SOLIDBAT (WP6), the first model sets for development will be based on literature data and existing data from previous projects. Further, initial models for SSBs have been developed during the Horizon 2020 funded SAFELiMOVE project (GA No. 875189), which targeted the development of SSBs at lower technology maturity levels (TRL3). SOLIDBAT will upgrade existing models and demonstrate them in a relevant environment (validation based on measurement data of several prototypes under representative cycling conditions). Purpose is to reach higher technology readiness levels (TRL6) at the end of SOLIDBAT.

Both cases of working with existing data represent part of the foreseeable strategy for the re-use of existing data by SOLIDBAT.

Purpose of the data generated by SOLIDBAT and the re-use of existing data is to suggest further cell optimization routes based on model simulations.

Further data is expected from simulations of SSB direct recycling routes. Purpose of the data is to understand the recycling of SOLIDBAT components and materials and to develop recommendations for the SSB design that targets optimised recycling and/or second use once the end-of-life is reached for the original application case.

Molecular modelling data generated within WP2, encompassing both Molecular Dynamics (MD) and Density Functional Theory (DFT) simulations, serves the following purposes:

- **Density Functional Theory (DFT) Calculations**: The DFT calculations are focused on determining the intrinsic electrochemical properties, such as redox potentials and therefore compound stability, of electrolyte components. This directly supports SOLIDBAT's goals by enabling the rational selection and design of electrochemically stable and efficient materials, ensuring they are suitable for the target operating conditions of the solid-state batteries.
- **Molecular Dynamics (MD) Simulations**: The primary purpose of generating MD simulation data is to achieve a fundamental, atomistic-level understanding of the structural dynamics and ion transport mechanisms of novel polymeric systems being investigated as potential solid electrolytes within SOLIDBAT. This knowledge is directly related to SOLIDBAT's objective of developing high-performance, safe, and durable solid-state batteries by providing crucial insights to guide the rational design, selection, and optimization of polymer electrolyte materials.

Beyond SOLIDBAT, this molecular modelling data will be highly valuable to the wider scientific community and Industrial R&D for validating computational models and advancing fundamental materials research relevant to energy storage.

- **Process flow data:**

Data will result from:

- Slurry formulation, current collector parameters, rheological properties, slurry preparation conditions, the coating parameters, slurry drying parameters, calendaring conditions, quality check, loading, density and electrochemical validation

- The coating of cathode materials via a spray drying process: 1) spray drying process data such as inlet temperature, outlet temperature, nozzle geometry, pump speed, yield. 2) sample preparation data such as coating material, coating amount, solid/liquid ratio, solvent
- Data about components' properties after manufacturing and scale-up, based on quality control before release of the components to the partners (data on the manufacturing process of components will not be disclosed as this represents secret know-how of partner SP)
- Data from LCA/LCC
- Prototypes manufacturing process

- **Engineering and design data:**
  - **Prototypes design specifications**
    - All Data/calculation on the optimization of the cell design/architecture to reach the targeted energy densities and performance will be relevant. In addition to the evaluation and impact of the "active components" of the cell (cathode, anode, electrolyte) directly linked to their electrochemical performance/properties at material level, the objective, here, is to evaluate the impact of the entire cell design (dimensions, thickness, number of anode/cathode/electrolyte layers, loading optimization, electrolyte quantity inside the cell...) on the final performance.

3.2 Types, formats, size and origin of data in SOLIDBAT

This section of the DMP and its future updates responds to the following questions:

- What types and formats of data will SOLIDBAT generate or re-use?
- What is the expected size of the data that you intend to generate or re-use?
- What is the origin/provenance of the data, either generated or re-used?

- **Laboratory experimental characterisation data:**

In terms of laboratory experiments the expected type of data include:

- Data on different materials properties, structure and characterisations needed for the SSB components.
- Properties of materials and their manufacturing process.
- Test parameters and protocols.
- Data on electrochemical performance and mechanical properties at materials level under basic lab-cell configuration, incl. novel electrolytes.
- Electrochemical cell designs.

Lab experiments involve a panel of analytical tools where each apparatus generates a file in its own format. The experimental data will be further processed, either using Excel or Origin, and made accessible using graphs and tables. In addition, for internal use within the SOLIDBAT consortium, raw data from the equipment (cyclers) will be generated.

In general, all data will be available in *.csv, *.txt, *.xlsx, *.docx, *.pptx, or *.pdf formats.

For experimental data, sizes can vary from a few hundreds of kB to several GB depending on the resolution and equipment used. Data sizes will therefore be easily shareable with common repositories.

- **Simulation or modelling data:**

Fitting of electrochemical impedance spectroscopy data will be performed using the software MATLAB. The output data are stored in *.m files. Their file sizes are within some MB.

Different load profiles will be simulated utilizing the 3D physico-chemical model from RWTH Aachen ISEA. The load profiles are stored in .pln format (a few kB to MB). The model's output data are stored in .jsc format, which can vary from a few MB to several GB depending on the length of the load profile and on the size of the 3D cell geometry. The simulation data can be post processed using MATLAB or Python to convert data to common formats such as *.csv or *.txt.

A phase-field approach will be used to simulate lithium plating and stripping dynamics in the presence of a dynamic solid electrolyte interphase (SEI). The simulation results will be compared with in-operando measurements related to dendrite growth, enabling validation and calibration of the model. This model will be developed in Python, utilizing the FEniCS library to numerically solve the governing partial differential equations (PDEs).

In parallel, a continuum-scale modelling framework that couples mechanical and electrochemical processes will be implemented to investigate ageing mechanisms in solid-state battery cells. This model builds upon the methodology developed within the SAFELIMOVE project and will be further extended to capture the complex interactions contributing to performance degradation over time. Like the phase-field model, the continuum model will also be implemented in Python, ensuring modularity and facilitating integration with other simulation tools.

3D microstructure simulations will be performed using COMSOL Multiphysics. The template and solution files are stored in .mphtxt format which can vary from few hundreds of MB to several GB depending on system and mesh sizes and simulation length. Additionally, data exported from such solution files can take common formats such as *.csv, *.txt, *.xlsx. Sizes can vary from few kB (1D plots such as voltage curves) to several hundreds of MB (complete concentration and voltage fields in 3D etc.).

Molecular modelling will generate data from classical Molecular Dynamics (MD) and Density Functional Theory (DFT) simulations, along with subsequent analysis outputs. MD simulations of polymeric systems using GROMACS, running for up to 200 ns, will produce raw data including GROMACS input files (e.g., topology .top, coordinate .gro, run parameter .mdp; typically a few KBs to MBs), substantial trajectory files (e.g., compressed .xtc, full-precision .trr; potentially ranging from tens to hundreds of GBs per simulation run), energy files (.edr), log files (.log), and checkpoint files (.cpt) (collectively MBs to several GBs). Analysis of these trajectories using GROMACS tools and custom scripts will yield processed MD data such as Root Mean Square Deviation (RMSD), Radial Distribution Functions (RDFs), and diffusion coefficients, typically stored as GROMACS output formats (e.g., .xvg) or exported to common formats like comma-separated values (.csv) or plain text (.txt) (KBs to MBs). Concurrently, DFT calculations on electrolyte components using ORCA to determine redox potentials will generate raw ORCA input files (e.g., .inp, .xyz; KBs), detailed output files (.out; MBs to hundreds of MBs), and potentially wavefunction/property files (e.g., .gbw, .hess; hundreds of MBs to GBs). Key derived DFT data, including calculated redox potentials, optimized molecular geometries, and electronic energies, will be extracted from ORCA output files and summarized in spreadsheets or text files (KBs to MBs).

Phase-field deposition simulations will be performed using the finite element method for multiphysics problems with dolfinx, a package of python. The output of the activity will be obtained for illustrating different systems and microstructures. It will be saved as *.vtk or *.xdmf files, which may require several MB.

The used parameters will be stored, managed, and read from json files, which are very small.

For the sustainability assessment based on Life Cycle Assessment (LCA) primary data will be collected from partners, according to their availability and confidentiality protection mechanisms. These primary data will be aggregated into a LCA model which will produce as output environmental impacts expressed with a set of KPIs. It must be noticed that from the aggregated results it will be impossible to run "reverse engineering" calculations; this should mitigate confidentiality issues and increase the adoption of primary data, which are the heart of a reliable and meaningful model.

For easy use for all modelling data word/pdf documents will be generated with new information generated within the project.

- **Process flow data:**

Data types will include:

- Slurry formulation, current collector parameters, rheological properties, slurry preparation conditions, the coating parameters, slurry drying parameters, calendaring conditions, quality check, loading, density and electrochemical validation.
- The data concerning the coating of cathode material particles via spray drying (including both spray drying process data and sample preparation data) will be available in *.xlsx, *.docx, *.pptx, or *.pdf formats. File sizes will generally range from a few hundred kB to several MB, making them easily shareable through common repositories. Data on materials synthesized at pilot-scale (aqueous-processable binder, HGPE components), focusing on quality control: purity assessment, physicochemical properties, rheological measurements and thermal characteristics. The details of manufacturing processes will not be disclosed to protect SP's secret-know how.
- For LCA evaluation and sustainability assessment in general, primary data cover: material quantity, nature and origin; process energy consumption. Every activity which is performed upstream or downstream (i.e., processing of a semifinished product which is purchased by SOLIDBAT team or battery charge/discharge in real use) will be modelled via secondary data or reference scenarios discussed with partners; data from the previous project SAFELiMOVE are included in the benchmark evaluation.
- Prototypes manufacturing process.

- **Engineering and design data:**

The engineering and design data will be generated in word/pdf format, with jpg images for the module design model as well as the required electronics.

- **Prototypes design specifications**

Results from cell design stacking simulations will be summarized in ppt files. Additionally, simulation data will be provided as *.csv, *.mat, or *.xlsx files.

<u>Formats</u>
The data formats will initially include Data and metadata, MS Word or other text formats (.doc, .docx, .csv), power point (.pptx), images (.jpg) and Excel (.xls, .xlsx) compatible files and PDF (.pdf) files. Nevertheless, new formats of the data might appear during the execution of the project, and they will be well- defined in the last version of the DMP accordingly.

Tabulated data can also be documentation data, but is mainly an exchange of batches of datasets with the same attributes such as:

- Simulation data
- Testing data
- Characterisation data
- Parameter files
- Matrices as for instance to define interacting responsibilities.

The size of data will be evaluated during the project and will depend on the extent and the nature of the data that are made available. Further detailed information will be provided in the updated and final versions of this DMP as they become available.

3.3 Expected re-use of existing data

The re-use of existing data available from previous research projects (such as SAFELiMOVE) and other European projects and activities is planned and will further be encouraged. This section will be updated for the coming versions of the DMP and a full list of re-used data be included in the final version of the DMP in M48.

SOLIDBAT public documents will be available for re-use (through clarifying licenses) upon decision of the General Assembly and the project coordinator. Once the data are made public, they will remain public.

4 FAIR DATA

The following details refer to openly shared data only. Measures for the curation and protection of sensitive data and/or data that underly IP protected results are described in *Section 6, Data Security*.

To comply with the principles of FAIR data, the SOLIDBAT consortium decided to use Zenodo (https://zenodo.org) as the main repository for making the project's research data and other outputs, such as scientific publications, fact sheets and other info materials findable in accordance with the requirements towards open data as stated in the Grant Agreement and the Horizon Europe Open Data principles.

We will create a SOLIDBAT community in the Zenodo repository, so all open datasets, public deliverables, publications and other public outputs, such as posters, presentations etc. can be uploaded in this community by all consortium partners.

Through Zenodo, all uploads will be linked to OpenAire (https://www.openaire.eu/). This will ensure maximum visibility of SOLIDBAT data and results among the European scientific and expert community and make data findable via the Zenodo metadata standards.

4.1 Making data findable, including provisions for metadata

This section of the DMP and its future updates responds to the following questions:

- How will SOLIDBAT data be identified, e.g. via persistent identifier?
- Will rich metadata be provided to allow discovery? What metadata will be created? What disciplinary or general standards will be followed? In case metadata standards do not exist in your discipline, please outline what type of metadata will be created and how.
- Will search keywords be provided in the metadata to optimize the possibility for discovery and then potential re-use?
- Will metadata be offered in such a way that it can be harvested and indexed?

Making data findable with metadata

The following principles are used by Zenodo to make research data findable (F1-F4). Those principles also apply for all open datasets shared by SOLIDBAT via Zenodo:

- F1: (meta)data are assigned a globally unique and persistent identifier
    - A DOI is issued to every published record on Zenodo.
- F2: data are described with rich metadata ((meta)data are richly described with a plurality of accurate and relevant attributes; each record contains a minimum of DataCite's mandatory terms, with optionally additional DataCite recommended terms and Zenodo's enrichments.
    - Zenodo's metadata is compliant with DataCite's Metadata Schema minimum and recommended terms, with a few additional enrichments.
- F3: metadata clearly and explicitly include the identifier of the data it describes
    - The DOI is a top-level and a mandatory field in the metadata of each record.
- F4: (meta)data are registered or indexed in a searchable resource
    - Metadata of each record is indexed and searchable directly in Zenodo's search engine immediately after publishing.
    - Metadata of each record is sent to DataCite servers during DOI registration and indexed there.

Metadata associated with each data set that will be published by SOLIDBAT in Zenodo will by default include:

- Digital Object Identifiers
- Version numbers
- Bibliographic information
- Keywords
- Abstract/description
- Associated project and community

- Associated publications and reports
- Grant information
- Access and licensing info
- Language

Project name and Grant Agreement number represent standard details as part of the grant information.

Keywords for optimised discovery

The researchers collecting the data at each organisation involved in the project will be responsible for uploading the specific datasets that they have created. All datasets will include a set of keywords associated with the data. The keywords must be descriptive to the content of the dataset. Before publishing, public datasets and suggested keywords will be submitted to the Project Coordinator, María Martínez, and the Project Managers, Estibaliz Crespo and Rita Clancy, for review and feedback.

For general guidance and as part of the SOLIDBAT content branding, a set of general keywords that shall be used for all public datasets, scientific publications and public deliverables have been defined. These are as follows:

- Solid-State Batteries
- Solid-State Battery
- Solid-state lithium metal batteries
- SSB
- Waterborne cathode
- Aqueous binders
- Solid-State Electrolyte
- Hybrid Gel Polymer Electrolyte
- Lithium metal
- 3 D-texturized lithium metal anode
- Sustainable
- Green
- Nickel rich NMC
- LATP
- LLZO
- Coated separator
- Prototype
- Cell
- Electromobility
- Electric Vehicle
- Modelling
- Physico-chemical model
- Electrochemical impedance spectroscopy
- Galvanostatic cycling
- Multi-*operando* characterisation
- Thermal runaway
- Multiphysics and Multiscale models
- Life Cycle Assessment of Solid-State Battery
- Life Cycle Inventory of Solid-State Battery

4.2 Making data accessible

Data Repository:

This section of the DMP and its future updates responds to the following questions:

- *Will the data be deposited in a public/trusted repository?*
- *Have you explored appropriate arrangements with the identified repository where your data will be deposited?*
- *Does the repository ensure that the data is assigned an identifier? Will the repository resolve the identifier to a digital object?*

As highlighted in *Section 3.1 Making data findable*, all public datasets, scientific publications and deliverables that are assessed as 'open' and can therefore be shared with the public, will be uploaded to Zenodo and made openly available free of charge. Publications and underlaying data sets will be linked through the use of persistent identifiers (DOI issued by Zenodo). Datasets that have been assessed as "confidential" (for personal, ethics or exploitation reasons) will not be shared. This is further explained under 'Data' below.

Zenodo takes the following measures to make all data accessible (A1-A2):

- **A1**: (meta)data are retrievable by their identifier using a standardized communications protocol
  - Metadata for individual records as well as record collections are harvestable using the OAI-PMH protocol by the record identifier and the collection name.
  - Metadata is also retrievable through the public REST API.
- **A1.1**: the protocol is open, free, and universally implementable
  - See point A1. OAI-PMH and REST are open, free and universal protocols for information retrieval on the web.
- **A1.2**: the protocol allows for an authentication and authorization procedure, where necessary
  - Metadata are publicly accessible and licensed under public domain. No authorization is ever necessary to retrieve it.
- **A2**: metadata are accessible, even when the data are no longer available
  - Data and metadata will be retained for the lifetime of the repository. This is currently the lifetime of the host laboratory CERN, which currently has an experimental programme defined for the next 20 years at least.
  - Metadata are stored in high-availability database servers at CERN, which are separate to the data itself.

The list of expected datasets in Annex A represents a first version which will be updated and extended as the project evolves. Furthermore, not all details are already known at this stage. This includes the size of datasets or other specific information which will only become available once the data has been generated. Therefore, updated versions of the datasets listed in the Annex will be delivered during either one of the updated versions of the DMP or, the latest, for its final version at the end of the project.

Data:

This section of the DMP and its future updates responds to the following questions:

- *Will all data be made openly available?*
- *If an embargo is applied to give time to publish or seek protection of the intellectual property (e.g. patents), specify why and how long this will apply, bearing in mind that research data should be made available as soon as possible.*
- *Will the data be accessible through a free and standardized access protocol?*
- *If there are restrictions on use, how will access be provided to the data, both during and after the end of the project?*
- *How will the identity of the person accessing the data be ascertained?*
- *Is there a need for a data access committee (e.g. to evaluate/approve access requests to personal/sensitive data)?*

In accordance with the Horizon Europe Open Access Mandate SOLIDBAT commits to making all project data and results openly accessible with as few restrictions as possible. The European Commission's open access principle however entails the strict protection of personal and sensitive data for reasons of personal rights, ethics and/or for commercial exploitation.
SOLIDBAT will fully comply with those requirements. Management strategies that are currently foreseen are listed below. Further plans and updates will be added as the project matures.

Restrictions on data due to commercial use and IP protection:
SOLIDBAT will protect all data that will be essential for commercialisation and/or the protection of intellectual property. The exact strategy as regards embargo periods, future access of data one IP has been protected, data ownership etc. will be discussed, agreed and fixed in the DMP per dataset. Updates will be included in future DMP versions and become part of the respective periodic technical report.

4.3 Making data interoperable

This section of the DMP and its future updates responds to the following questions:

- What data and metadata vocabularies, standards, formats or methodologies will you follow to make your data interoperable to allow data exchange and re-use within and across disciplines? Will you follow community-endorsed interoperability best practices? Which ones?
- In case it is unavoidable that you use uncommon or generate project specific ontologies or vocabularies, will you provide mappings to more commonly used ontologies? Will you openly publish the generated ontologies or vocabularies to allow reusing, refining or extending them?
- Will your data include qualified references to other data (e.g. other data from your project, or datasets from previous research)?

Zenodo uses the JSON schema as the internal representation of metadata and offers export to other formats such as Dublin Core, MARCXML, BibTeX, CSL, DataCite and export to Mendeley. The data record metadata will utilise the vocabularies applied by Zenodo. For certain terms, these refer to open, external vocabularies, e.g.: license (Open Definition), funders (FundRef) and grants (OpenAIRE). Reference to any external metadata is done with a resolvable URL.

4.4 Increase data re-use

This section of the DMP and its future updates responds to the following questions:

- *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.)?*
- *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?*
- *Will the data produced as part of the project be useable by third parties, particularly after the end of the project?*
- *Will the provenance of the data be thoroughly documented using the appropriate standards?*
- *Describe all relevant data quality assurance processes.*

The Zenodo digital repository uses the following principles to assure maximum re-usability of open data:

- **R1**: (meta)data are richly described with a plurality of accurate and relevant attributes
  - Each record contains a minimum of DataCite's mandatory terms, with optionally additional DataCite recommended terms and Zenodo's enrichments.
- **R1.1**: (meta)data are released with a clear and accessible data usage license
  - License is one of the mandatory terms in Zenodo's metadata, and is referring to an Open Definition license.
  - Data downloaded by the users is subject to the license specified in the metadata by the uploader.
- **R1.2**: (meta)data are associated with detailed provenance
  - All data and metadata uploaded is traceable to a registered Zenodo user.
  - Metadata can optionally describe the original authors of the published work.
- **R1.3**: (meta)data meet domain-relevant community standards. Zenodo is not a domain-specific repository, yet through compliance with DataCite's Metadata Schema, metadata meets one of the broadest cross-domain standards available.

5 OTHER RESEARCH OUTPUTS

Overall strategy for managing other research outputs

SOLIDBAT targets a new SSB technology delivering high energy density, high rate-capability, and long cyclability, and improving at the same time safety, cost and recyclability for an optimised environmental and climate impact.

This will be complemented by novel business models which consider the inclusion of potential environmental and societal benefits, i.e., by reducing the burden of ecological and climate impacts associated with fossil resources or emissions from transport, boosting a European industrial ‘energy storage’ value chain.

To be able to stimulate the emergence of a European innovation ecosystem around solid state batteries, well beyond the world of research alone, it is essential to ensure that the widest possible group of stakeholders is reached with the results and products of SOLIDBAT.

To achieve this goal, sharing results openly with the scientific communities that are interested in SOLIDBAT progress and technology breakthroughs, providing verified results as evidence base for future policymaking and European strategies and connecting with citizens to achieve wide public acceptance of novel solid-state batteries are pivotal to achieve the highest possible impact for the project.

At the same time, working towards the higher TRL levels of technology demonstration in an environment that is relevant for the industry (TRL6), especially future end users and technology integrators will be at the centre of SOLIDBAT dissemination, communication and exploitation activities, since they represent stakeholders with crucial roles in the longevity of the technology and the success or failure of solutions in a future market.

Therefore, while SOLIDBAT is committed to openly sharing all results with its target communities, the protection of IP for future commercialisation poses restrictions towards the full disclosure of results, which is coherent with data sharing and disclosure strategies.

As an example, no dissemination of results may take place before a decision is made regarding its role in the exploitation plan and the possible protection through IPR. In advance of any disclosure all project partners have therefore to be contacted for their authorisation. The WP Leader for Dissemination, Communication and Exploitation, Rita Clancy (EUR), supported by the Project Coordinator CICe and its project management as well as IP management team will oversee the action.

The overall strategy and specific plans for the management of research outputs as well as their dissemination, communication and exploitation are presented in the SOLIDBAT advanced Dissemination, Communication and Exploitation Plan (DEP), representing project deliverable D8.1, submitted on the 31st of May 2025. This deliverable report briefly outlines the main strategy for applying FAIR principles to research outputs other than data as described in detail in deliverable D8.1.

Applying the FAIR principles to other research outputs

SOLIDBAT will for all results sharing activities assure that the FAIR principles will be used as widely as possible, which mainly means making other (non-data) results findable, accessible, interoperable and reusable.

Efforts to apply those principles are briefly summarised below and explained in detail in the SOLIDBAT Dissemination, Communication and Exploitation Plan (DEP, deliverable D8.1 and regular updates thereof as part of the technical periodic reports).

- **Making outputs and results findable and accessible:** To make research outputs findable, suitable keywords will be used through which interested parties can easily find them either via Google, social media channels or other channels used by SOLIDBAT. In addition, common channels established and widely used by the battery and energy storage, the advanced materials, the renewable energy community and the SOLIDBAT application sectors 'electromobility', 'grid', and other stationary energy sectors will be used as multipliers to increase the findability of outputs.

Reports, fact sheets and policy briefs will be used as proven formats for highlighting outputs of relevance. All related materials that target an improved findability of outputs will include the grant information and keywords like 'Horizon Europe', 'HEU', which will further improve the findability of outputs for the Horizon Europe community and other EU funded projects.

For social media posts, respective keywords will be used and target community representatives tagged in posts to assure key stakeholders will find outputs and results.

All outputs associated info materials and posts will be made accessible through the project website as single access point for project outputs.

- **Making outputs interoperable and reusable:** The SOLIDBAT technology has many appealing characteristics for future uptake by various target sectors and communities. Interoperability in the sense of non-data research outputs can be understood as interoperability and integrability with future industrial applications. In the centre of SOLIDBAT are electromobility applications that require the performance parameters, the safety and other strengths of SSBs.

The most interesting one has already been chosen as target application within the project, which is electromobility, precisely electrified passenger vehicles.

To assure the highest levels of interoperability and re-use of SOLIDBAT outputs, we utilise an End User Panel, which is a group of selected wider end users, including those from the possible future second life uses for the SOLIDBAT SSBs, for example stationary energy applications. This Panel will give insight into industry requirements and needs, including the viability and usability of SSBs and the specifics for smooth technology integration in existing devices or processes.

At the end of the project, the Panel members will get the chance to participate in a demonstration round of the SSB prototype and provide feedback for example on application-specific requirements towards SOLIDBAT technology including usability, costs and other parameters that are critical for target applications and markets. Follow up plans will be discussed for the maturing of TRLs and the upscaling of SOLIDBAT technology towards commercial scales. Potential members of the Panel will be contacted through the wider consortium partner networks and client bases. Furthermore, the panel may include representatives of standardisation bodies or battery regulations expert groups, above all CEN/CENELEC as the European official authority, to receive input on the latest developments. By engaging end-users, SOLIDBAT will be able to increase and maximise the compatibility, integrability, feasibility and viability of SOLIDBAT outputs, hence their longevity, interoperability and re-usability.

Further, SOLIDBAT plans for a Citizen Panel with the purpose to increase the knowledge of non-experts from civil society about solid-state batteries and to identify their expectations, and potential concerns towards novel batteries, especially when used for e-vehicles. Making research concepts and results available before planning their scale-up and commercialisation may also help with identifying and mitigation possible concerns and citizens' resistance towards battery factories in their neighbourhoods and perceived social impacts and consumer priorities that consortium partners may not be aware of.

6 ALLOCATION OF RESOURCES

Costs

SOLIDBAT uses standard tools and a free of charge research data repository. The costs of data management activities are limited to project management costs and will be covered by allocated resources in the project budget.

Long-term preservation of the public data is ensured through Zenodo. Other resources needed to support reuse of data after the project ends will be solved on a case-by-case basis.

Data Manager

The overall responsibility for data management lies with the project coordinator, María Martínez from CICe, supported by SOLIDBAT's project management team Nicola Boaretto (deputy project coordinator/CICe), Estibaliz Crespo (project manager/CICe) and Rita Clancy (project manager & WP leader for dissemination, communication and exploitation/EUR).

Additional support on necessary data confidentiality due to IP protection needs will be given by the IP expert office at CICe. Main contact for the SOLIDBAT project is Cristina Domínguez who will act as CICe internal IP Manager and closely cooperate with the Dissemination Manager Miriam Gutiérrez (CICe) and Exploitation & Communication Manager Rita Clancy (EUR) who will assure that no confidential data will be disclosed during dissemination, communication and exploitation activities, and secure the systematic and timely release and proactive sharing of open, non-confidential project data to wide user groups for maximum accessibility and re-use.
This will guarantee the tracking of IP sensitive data that underly patentable results (in accordance with IP Management procedures detailed in the Consortium Agreement).

7 DATA SECURITY

Data security – The SOLIDBAT internal repository

SOLIDBAT uses MS Teams as single Sharepoint for all internal project resources, including data and other project outputs (e.g. reports, deliverables). Members to the SOLIDBAT MS Teams are individually invited with their email addresses.

Microsoft Teams is built on the Microsoft 365 and Office 365 hyper-scale, enterprise-grade cloud, delivering advanced security and compliance capabilities.

Teams enforces team-wide and organization-wide two-factor authentication, single sign-on through Active Directory, and encryption of data in transit and at rest. Files are stored in SharePoint and are backed by SharePoint encryption. Notes are stored in OneNote and are backed by OneNote encryption. The OneNote data is stored in the team SharePoint site. The Wiki tab can also be used for note taking and its content is also stored within the team SharePoint site. Therefore, all shared and stored content is subject to the two-factor authentication.

Security protocols for the Teams channels follow the recommended security roadmap provided by Microsoft[2]

Data security – The Zenodo digital repository

The following list describes the security settings for Zenodo:

- Versions: Data files are versioned. Records are not versioned. The uploaded data is archived as a Submission Information Package. Derivatives of data files are generated, but original content is never modified. Records can be retracted from public view; however, the data files and records are preserved.
- Replicas: All data files are stored in the CERN Data Centres, primarily Geneva, with replicas in Budapest. Data files are kept in multiple replicas in a distributed file system, which is backed up to tape on a nightly basis.
- Retention period: Items will be retained for the lifetime of the repository. The host laboratory of Zenodo CERN, has defined a lifetime for the repository of the next 20 years minimum.
- Functional preservation: Zenodo makes no promises of usability and understandability of deposited objects over time.
- File preservation: Data files and metadata are backed up nightly and replicated into multiple copies in the online system.
- Fixity and authenticity: All data files are stored along with an MD5 checksum of the file content.
- Files are regularly checked against their checksums to assure that file content remains constant.

Succession plans: In case of closure of the repository, Zenodo guarantees to migrate all content to suitable alternative institutional and/or subject based repositories.

8 ETHICS

No specific ethics issues have been identified for the SOLIDBAT project besides the general ethics implications that come from working with personal data. Data protection measures related to personal data have been described in Section 1.2.

9 OTHER ISSUES

No other data management issues have been identified so far. Should organisational, national or other data management rules or standards be considered in addition to those underpinning this initial DMP, they will be included in the next version of the DMP.

10 CONCLUSIONS

This deliverable report represents the initial version of the SOLIDBAT Data Management Plan (DMP). While the general strategy for data handling and sharing can be laid out at this early stage of the project alongside an overall view of what type of data is expected during the course of the project and who will benefit from this data, specifics still have to

[2] https://docs.microsoft.com/en-us/microsoft-365/security/office-365-security/security-roadmap?view=o365-worldwide

be discussed and agreed. At this early stage of the project (project month 6), it will be most important to establish a sound strategy for data management that all consortium members are fully aware of and that provides a solid basis for all project data procedures, including data generation, assessment, curation, storage, protection and/or sharing, dependent on their level of sensitiveness and confidentiality.

This is achieved with this deliverable report. This DMP will be used as working basis for data management throughout the project. It will be continuously assessed, revised and updated where needed and matured until the project end.

Updates will be provided for the Periodic Technical Reports to the EC and the following DMP versions, scheduled for project months 18, 36 and 48 (representing deliverables D1.4, D1.5 and D1.6).

11 ANNEX A – SOLIDBAT DATASETS

WP	Origin of Data	Name of dataset	Description	Format	Responsible for data management	Classification	Timeline
WP2	Calculation excel sheets for cell design	Calculation cell design	Details of fixed and variable parameters of cell components, number of components to be stacked, volumetric and gravimetric energy density	*.xls	Aurélie Gueguen/ TME	SEN	M48
WP2	Concept results	Direct recycling	Concept for direct recycling	*.jpg, *.xls, *.docx, *.pptx, *.pdf	Uwe Guntow/ Fraunhofer	SEN	M48
WP2	Simulation results	Virtual Cell Design Study	Virtual cell design utilizing RWTH's ICPD	*.m, *.csv, *xlsx	Hendrik Laufen/ RWTH	Public	M18
WP2	Simulation results	Density Functional Theory (DFT) Data	Raw GROMACS input files (.top, .gro, .mdp), trajectory files (.xtc, .trr), energy files (.edr), log files (.log), checkpoint files (.cpt) from polymeric system simulations (up to 200 ns). Processed data includes RMSD, RDFs, diffusion coefficients, etc.	.top, .gro, .mdp, .xtc, .trr, .edr, .log, .cpt, .xvg, .csv, .txt	Mattia Felice Palermo/ CICe	SEN	M6
WP2	Simulation results	Molecular Dynamics (MD) Simulation Data	Raw ORCA input files (.inp, .xyz), output files (.out), wavefunction/property files (.gbw, .hess) for electrolyte component redox potential calculations. Derived data includes redox potentials,	.inp, .xyz, .out, .gbw, .hess, spreadsheet formats (e.g., .csv, .xlsx), .txt files	Mattia Felice Palermo/ CICe	SEN	M18

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			optimized geometries, electronic energies.				
WP3	Lab experiments	SBC_ID (list of cathodes)	Database of cathode samples	*.jpg, *.xls, *.docx, *.pptx, *.pdf, *.tri	Monica Cobos/ CID	SEN	M48
WP3	Lab experiments	CBS_ID (coin cells) & PBS_ID (pouch cells)	Electrochemical characterization	*xlsx, *pptx	Monica Cobos/ CID	SEN	M48
WP3	Lab experiments	SBT_Binders-database	Database of water-processable binders containing ID and physicochemical characterization	.xls, .pdf	Camille Chatard/ SP	SEN	M48
WP3	Lab experiments	SBT Oxidic Solid Electrolyte Database	Database of oxidic solid electrolyte (LATP, LLZO) particles (powders, slurries) and physicochemical characterization	*.pptx, *.docx, *xlsx, *.pdf	Jörg Schuhmacher/ SCHOTT	SEN	M48
WP3	Lab experiments	SBT_HGPE-ID_experiment	Physicochemical electrochemical characterization	*txt	Nicola Boaretto/ CICe	SEN	M48
WP3	Lab experiments	SBT_cell-ID_experiment	Cell cycling	*txt, *xlsx, *csv	Nicola Boaretto/ CICe	Public	M48
WP3	Lab experiments	SBT_HGPE-database	Database of HGPE-samples, containing HGPE ID and corresponding composition	*xlsx	Nicola Boaretto/ CICe	SEN	M48

WP3	Lab experiments	SBT_cells-database	Database of cycled cells, containing cells ID and corresponding configuration	*xlsx	Nicola Boaretto/ CICe	SEN	M48
WP3	Lab experiments	Cell data	Cycling, electrical impedance, cyclovoltammetry of lab-scale monolayer lithium-ion cells	*txt, *xlsx, *csv, *jpg, *tif, *png	Michael Hofmann/ Fraunhofer	Public	M48
WP3	Lab experiments	CAM characterization	Chemical and physical characterization of CAM	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Michael Hofmann/ Fraunhofer	Public	M48
WP3	Lab experiments	CAM coating process	Data related to the spray drying process and sample preparation	*.xlsx, *.docx, *.pptx, or *.pdf formats	Michael Hofmann/ Fraunhofer	Public	M48
WP3	Lab experiments	In-situ EIS and optical microscopy	In-situ Li dendrite characterization	*jpg, *tiff, *xlsx, *ppt, *pdf	Elizaveta Nikulina/ CID	Public	M48
WP3	Lab experiments	Interfaces characterization	Operando XPS/Raman, SAXS-WAXS, reference electrode measurements, DSC	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Lise Daniel/ CEA	Public	M48
WP4	Upscaling Oxidic Solid Electrolyte Manufacture	Oxidic Solid Electrolyte Characterization	Database of oxidic solid electrolyte (LATP, LLZO) particles (powders, slurries) and physicochemical characterization	*.pptx, *.docx, *xlsx, *.pdf	Jörg Schuhmacher/ SCHOTT	SEN	M48
WP4	Upscaling coated CAM	CAM characterization	Chemical and physical characterization of CAM	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Michael Hofmann/ Fraunhofer	Public	M48

WP4	Upscaling coated CAM	CAM coating process	Data related to the spray drying process and sample preparation	*.xlsx, *.docx, *.pptx, or *.pdf formats	Michael Hofmann/ Fraunhofer	Public	M48
WP4	Pilot Plant results	CP_ID	Database of cathode samples	*.jpg, *.xls, *.docx, *.pptx, *.pdf	Monica Cobos/ CID	SEN	M48
WP5	Simulation results	EIS Fits	Set of possible impedance spectra for SSBs	*.m	Gereon Stahl/ RWTH	SEN	M48
WP5	Simulation results	Load profiles	Simulation data of different load profiles using RWTH's PCM	*.csv	Hendrik Laufen/ RWTH	Public	M48
WP5	Simulation results	Phase_field_simu	Simulation of lithium plating	*.xdmf, *.vtk	Diego del Olmo/ CID	SEN	
WP6	Lab experiments	Abuse tests results	Results of overtemperature tests on 1Ah, 5Ah and mini-modules, results of other abuse tests (nail, overcharge)	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Jérôme Cognard/ CEA	SEN	M48

WP6	Lab experiments	Cycling tests results	Data of 1 Ah and 5 Ah cells on cycling ability (capacity retention during cycling)	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Adrien Méry/ AMPERE	SEN	M48
WP6	Lab experiments	OCV-SOC, DCR and C-rate capability tests	Data of 1 Ah and 5 Ah cells on OCV-SOC, DCR and C-rate (capacity retention from several C-rates until 5C)	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Adrien Méry/ AMPERE	SEN	M48
WP6	Lab experiments	Storage tests	Investigate the effect of different storage temperatures and SoC levels on the ageing of the cells	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Adrien Méry/ AMPERE	SEN	M48
WP7	Lab experiments	Characterization recycled materials	Chemical and physical characterization of recycled materials	*txt, *xlsx, *csv, *jpg, *tif, *png, *pdf	Michael Hofmann/ Fraunhofer	Public	M48
WP8	LCA modelling	Life Cycle Inventory of SOLIDBAT battery	List of environmental footprint of the SOLIDBAT solution expressed with a set of KPIs according to technical LCA literature	*xlsx, *csv, *pdf	Massimo de Pieri, Anna Ronzano/ LCE	SEN	M48

Table 11.1 List of SOLIDBAT Data

SOLIDBAT

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the European Union