CELL-INTEGRATED SENSING FUNCTIONALITIES FOR SMART BATTERY SYSTEMS WITH IMPROVED PERFORMANCE AND SAFETY

GA 957273

D7.5 – FINAL DATA MANAGEMENT PLAN

LC-BAT-13-2020 - Sensing functionalities for smart battery cell chemistries

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Written By	Iñigo Gandiaga (IKE)	19-12-2023
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Summary

The Final Data Management Plan (DMP) delineates the followed strategy for managing research data both during and after the SENSIBAT project.

In addition, it is essential to highlight that throughout the SENSIBAT project, we meticulously adhered to the Initial Data Management Plan (D7.3) submitted in February 2021. This deliverable offers directives on data collection, processing, public accessibility, curation, and preservation. The document underscores the commitment to ensuring SENSIBAT data adheres to FAIR principles as outlined by the European Commission (EC), maintaining alignment with the project's Grant Agreement objectives and timelines throughout its course.

This deliverable aligns precisely with the description outlined in Annex I of the Grant Agreement, with no deviations present (after the amendment).

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Abbreviations

Symbol / Abbreviation	
BIG-MAP	*Battery Interface Genome-Materials Acceleration Platform*
BMS	*Battery Management System*
DMP	*Data Management Plan*
DOI	*Digital Object Identifier*
EC	*European Commission*
EU	*European Union*
FAIR	*Findable, Accessible, Interoperable, Reusable*
ORD	*Open Research Data*
WP	*Work-Package*

1 Introduction

This document introduces the Final Data Management Plan (DMP) of the SENSIBAT project. Initially defined at the project's outset (D7.3), the Initial Data Management Plan outlined a comprehensive strategy for handling research data during and after the project's conclusion. This plan specified which data would be collected, processed, and/or generated, detailed the extent of public data availability, and addressed the curation and preservation of data, with a focus on achieving FAIR principles according to EC guidelines.

The objective of the Final Data Management Plan is to underscore proper data handling, identifying the research data generated by the project and delineating which portions are shared with the public.

Throughout the 40 active months of the SENSIBAT project, a web-based archive storage and communication tool (METT) served as the project's online working and collaboration platform. Accessible only to project participants, METT facilitated access control through folder and sub-site configurations. Technical datasets were uploaded to distributed sites led by each Work Package (WP) leader and stored in line with the Initial Data Management Plan. Some datasets were locally stored, designated for specific use and not shared externally.

In the SENSIBAT project, all deliverables were publicly accessible on the project website (link: https://sensibat-project.eu/sensibat_results/).

The DMP functioned as a dynamic document, regularly updated throughout the project to accurately reflect the generated research data.

2 Data Summary

As the SENSIBAT project has been completed, and the proposed initial data management plan including the data summary methodology, has been followed, the Data Summary section outlines the final version of the spreadsheet named "SENSIBAT_Data_summary" which served as a reference for all project-generated data.

- The table enumerates data, offering general information on purpose, provenance, and accessibility.
- The latest version of the spreadsheet was available on Mett to be completed during the project.
- The last version of it can be found in the next section.

The methodology used to comprehensively manage and overview the generated data throughout the SENSIBAT project's duration is deeply explained in the D7.3 – Initial Data Management plan, the key components include:

Data Summary Table:

- "SENSIBAT_Data_summary" worked as a comprehensive reference for all data generated within the SENSIBAT project.
- Within this table, data was systematically enumerated, providing essential details on its purpose, provenance, and accessibility.
- The most recent iteration of the spreadsheet has been accessible on METT, ensuring all project partners have the latest information.
- A project-specific template for the data table was supplied, which was completed throughout the duration of the SENSIBAT project.

Metadata Requirements:

- Generic metadata, applicable to all data, is essential for comprehensive information.
- Fields such as data referencing, accessibility, and provenance are included in this common metadata batch.
- Some metadata fields are specific to the type of data (e.g., chemistry of the cell), with details that have been defined during the course of the project.

Data Collection Process:

- This section of the D7.3 outlines how both data and metadata have been collected.
- The spreadsheet includes descriptive information (metadata) alongside the enumeration of project-generated data.
- Specific metadata fields were tailored to the type of data in the latest version of the DMP.

The next tables below provide an overview of the latest version of the DMP, the detailed one can be found on the SENSIBAT public website (https://sensibat-project.eu/). Both tables clearly indicate which type of data is publicly available (Access. Level 5) and from where (full contact information of location including e-mail and lead partner).

Table 1: overview of the latest version of the DMP, the detailed one can be found on the SENSIBAT public website (https://sensibat-project.eu/)

Ref,	Name	Purpose of the data collection/generation. Relation to the objectives of the project.	Repository	Access. level	Owner	Lead partner	Contact	Involved partners	WP	Info to WP
D_1.1	Use cases, KPIs, cell and module requirements	This deliverable is a report containing a description of the use cases, the KPIs and an overview of the requirements at cell and module level.	https://sensibat-project.eu/sensibat_results/	Level 5	FHG, ABEE, AIT, FM, IKE, VAR, NXP, TuE	FHG	martin.wenger@iisb.fraunhofer.de	ABEE, AIT, FM, IKE, VAR, NXP, TuE	WP1	WP2, WP3, WP4, WP5
D_1.2	Testing plan for cells and module	This deliverable specifies the initial testing plan containing procedures for testing baseline cells, cells with integrated sensors and the module.	https://sensibat-project.eu/sensibat_results/	Level 5	AIT, ABEE, FHG, FM, IKE, VAR, NXP, TuE	AIT	bernd.eschelmueller@ait.ac.at	ABEE, FHG, FM, IKE, VAR, NXP, TuE	WP1	WP5
D_2.1	Report on selection of inks and pastes	This document reports the data acquired for the formulation of inks and pastes. This set of data is necessary to realize the printed electrodes.	https://sensibat-project.eu/sensibat_results/	Level 5	BDM, POL	BDM	s.bellani@bedimensional.it	POL	WP2	-
D_2.2	Report on development of printed electrodes on cell components	This document reports the data acquired for the printed electrodes on cell components.	https://sensibat-project.eu/sensibat_results/	Level 5	BDM, POL	BDM	s.bellani@bedimensional.it	POL	WP2	-
D_2.3	Report on development of electrical connections	This document reports the data acquired for the realization of the electrical connections.	https://sensibat-project.eu/sensibat_results/	Level 5	BDM, POL	BDM	s.bellani@bedimensional.it	POL	WP2	WP3
D_2.4	Report on level 2 sensor characterization	This report summarizes the measurement results of the level 2 sensors.	https://sensibat-project.eu/sensibat_results/	Level 5	POL, BDM	POL	silvia.bodoardo@polito.it	BDM	WP2	WP3, WP4, WP5
D_2.5	Report on characterization of pouch cell with integrated level 2 sensor	This report summarizes the measurement results of the pouch cells + level 2 sensors.	https://sensibat-project.eu/sensibat_results/	Level 5	POL, BDM	POL	silvia.bodoardo@polito.it	BDM	WP2	WP3, WP4, WP5
P_2.1	3D printed silicon-few layer graphene anode for advanced Li-ion batteries	The printing of three-dimensional (3D) porous electrodes for Li-ion batteries is considered a key driver for the design and realization of advanced energy storage systems. While different 3D printing techniques offer great potential to design and develop 3D architectures, several factors need to be addressed to print 3D electrodes	https://zenodo.org/record/6401752#.Ykaa6-pByMo	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.2	Topochemical Transformation of Two-Dimensional VSe2 into Metallic Nonlayered VO2 for Water Splitting Reactions in Acidic and Alkaline Media	We have reported the synthesis of room temperature (RT)-stable metallic rutile vanadium dioxide (VO2 (R)) nanosheets by topochemically transforming liquid-phase exfoliated nanosheets of 1T vanadium diselenide (ex-VSe2)	https://zenodo.org/record/6405566#.YkbJe-pByMo	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.3	Solution-processed two-dimensional materials for next-generation photovoltaics	Graphene and related two-dimensional (2D) materials (GRMs), including nonlayered 2D materials and 2D perovskites, as well as their hybrid systems, are emerging as promising candidates to drive innovation in PV technologies	https://arxiv.org/abs/2110.09088	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.4	Graphene-Based Electrodes in a Vanadium Redox Flow Battery Produced by Rapid Low-Pressure Combined Gas Plasma Treatments	Low-pressure combined gas plasma treatment in an inductively coupled radio frequency reactor to produce highly catalytic electrodes for vanadium redox flow batteries (VRFBs).	https://arxiv.org/abs/2110.10062	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.5	Sulfonated NbS2-based proton-exchange membranes for vanadium redox flow batteries	novel proton-exchange membranes (PEMs) based on sulfonated poly(ether ether ketone) (SPEEK) and two-dimensional (2D) sulfonated niobium disulphide (S-NbS2) nanoflakes are synthesized by a solution-casting method and used in vanadium redox flow batteries (VRFBs).	https://pubs.rsc.org/en/content/articlepdf/2022/nr/d1nr07872k	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.6	Transition metal dichalcogenides as catalysts for the hydrogen evolution reaction: The emblematic case of "inert" ZrSe2 as catalyst for electrolyzers	We have reported the bulk synthesis, the exfoliation in 2D form, as well as the physical and chemical treatment of 1T-ZrSe2 crystals to be used as ECs for HER in both acidic (0.5 M H2SO4) and alkaline (1 M KOH) media.	https://onlinelibrary.wiley.com/doi/epdf/10.1002/nano.202100364	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-

P_2.7	Carbon-α-Fe2O3 Composite Active Material for High-Capacity Electrodes with High Mass Loading and Flat Current Collector for Quasi-Symmetric Supercapacitors	synthesis of an active material for supercapacitors (SCs), namely α-Fe2O3/carbon composite (C-Fe2O3) made of elongated nanoparticles linearly connected into a worm-like morphology, by means of electrospinning followed by a calcination/carbonization process.	https://www.mdpi.com/2673-3293/3/3/32	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.8	High-energy density aqueous supercapacitors: The role of electrolyte pH and KI redox additive	Extended characterization of aqueous SCs, screening acidic, neutral and alkaline electrolytes, as well as the addition of KI as a prototypical redox additive, and performing both two- and three-electrode configuration measurements.	https://watermark.silverchair.com/101102_1_online.pdf?token=AQECAHi208BE49Ooan9kkhW_Ercy7Dm3ZL_9Cf3qfKAc485ysgAAAp8wggKbBgkqhkiG9w0BBwaggggKMMIICiAIBADCCAoEGCSqGSIb3DQEHATAeBglghkgBZQMEAS4wEQQMs4iit1K6n8LrKeMAAgEQgIICUodx7pkOjlc1isioz7-sbWoKrvxaArN0pS4dGe1-2cTLxIIow_gJ26qUlyIlw7WSP8ecH-GCh9FQO1VxAjXXD1K9bq8FrhciIJ9sEODKly7DHCkYbcxImUn5wKifh-CGrO4rZEja5vrPizzN2TlyPvN4y-zSLlQTcWRwzrVPfScgLBGY1CgTPTatWzW7YSJ9okKj-	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.9	Functionalized Metallic 2D Transition Metal Dichalcogenide-Based Solid-State Electrolyte for Flexible All-Solid-State Supercapacitors	Innovative composite solid-state electrolyte prepared by incorporating metallic two-dimensional group-5 transition metal dichalcogenides, namely, liquid-phase exfoliated functionalized niobium disulfide (f-NbS2) nanoflakes, into a sulfonated poly(ether ether ketone) (SPEEK) polymeric matrix.	https://pubs.acs.org/doi/pdf/10.1021/acsnano.2c05640	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
P_2.10	Graphene vs. carbon black supports for Pt nanoparticles: Towards next-generation cathodes for advanced alkaline electrolyzers	Investigated Pt-based nanostructured cathodes for high-performance alkaline electrolyzers (AELs), showing the beneficial effect of graphene over traditional carbon black as nanocatalysts support	https://www.sciencedirect.com/science/article/pii/S0013468623008745	Level 5	BDM	BDM	s.bellani@bedimensional.it	-	WP2	-
D_3.1	Report on adaptation of level 1 sensors for incorporation into battery cells	This document describes the level1 sensor and allows to adapt level 1 sensors to battery cells	https://sensibat-project.eu/sensibat_results/	Level 5	FHG	FHG	michael.jank@iisb.fraunhofer.de	-	WP3	WP4, WP5
D_3.2	Report on prototyping baseline pouch battery cells	This report summerizes the development and measurement results of the baseline battery cells	https://sensibat-project.eu/sensibat_results/	Level 5	AIT, ABEE, VAR	ABEE	jasmin.smajic@abeegroup.com	AIT, VAR	WP3	WP4, WP5
D_3.3	Report on prototyping 1Ah cells with integrated level 1 sensors	This report summerizes the development process and measurement results of the battery cells + level 1 sensors	https://sensibat-project.eu/sensibat_results/	Level 5	ABEE, FHG, VAR	ABEE	jasmin.smajic@abeegroup.com	AIT, ABEE, FHG, VAR	WP3	WP4, WP5
D_3.4	Report on prototyping 5Ah cells with integrated level 1 sensors	This report explains the escale-up from 1Ah to 5Ah and the measurement results of the battery cells (5Ah) + level 1 sensors	https://sensibat-project.eu/sensibat_results/	Level 5	AIT, ABEE, FHG, VAR	AIT	bernd.eschelmueller@ait.ac.at	ABEE, FHG, VAR	WP3	WP4, WP5
D_3.5	Report prototyping 1 Ah cells with integrated Level 2 sensors	This report summerizes the measurement results of the battery cells + level 2 sensors	https://sensibat-project.eu/sensibat_results/	Level 5	ABEE, VAR, BDM	VAR	harald.kren@varta-ag.com	ABEE, BDM	WP3	WP4, WP5
P_3.1	Ultrathin and flexible sensors for pressure and temperature monitoring inside battery cells	Accurate in situ monitoring of crucial parameters like temperature and pressure lead to a better understanding of processes that occur in a battery through its lifetime and therefore accelerate the development of new technologies in the battery market.	https://ieeexplore.ieee.org/document/9967234	Level 5	FHG, VAR	FHG	michael.jank@iisb.fraunhofer.de	VAR	WP3	-
DEM_3.2	Prototyping of 20x 1Ah baseline pouch battery cells and 20x 5Ah baseline pouch battery cells	The fabricated cells served as a baseline/reference cells to compare with the cells integrated with Level 1 (1 Ah and 5 Ah cells) and Level 2 sensors (1 Ah cells).	-	Level 3	AIT, ABEE, VAR	ABEE	jasmin.smajic@abeegroup.com	AIT, VAR	WP3	WP4, WP5
DEM_3.3	Prototyping of 30x 1Ah baseline pouch battery cells with integrated level 1 sensors	The fabricated cells served as a first step in the development of Level 1 - 5 Ah cells to be used in the module and validation.	-	Level 3	ABEE, FHG, VAR	ABEE	jasmin.smajic@abeegroup.com	AIT, ABEE, FHG, VAR	WP3	WP4, WP5
DEM_3.4	Prototyping of 20x 5Ah baseline pouch battery cells with integrated level 1 sensors	The fabricated cells served as development of L1 SoX algorithms, the module and validation.	-	Level 3	AIT, ABEE, FHG, VAR	AIT	bernd.eschelmueller@ait.ac.at	ABEE, FHG, VAR	WP3	WP4, WP5
DEM_3.5	Prototyping of 30x 1Ah baseline pouch battery cells with integrated level 2 sensors	The fabricated cells served as development of 21 SoX algorithms and validation.	-	Level 3	ABEE, VAR, BDM	VAR	harald.kren@varta-ag.com	ABEE, BDM	WP3	WP4, WP5

D_4.1	BMS-slave demonstrator supporting the read out of cell-integrated level-1 sensors	This report describes the readout electronics for the level 1 sensors and the interface with the multi-cell monitoring chips of NXP. It answers the question if the auxiliary input ports of the NXP chips can be used to read out the level 1 sensors or if separate discrete electronics are needed to implement the required functions. In the latter case, it gives the specifications for these electronics for future integration on the chips.	https://sensibat-project.eu/sensibat_results/	Level 5	FHG, NXP-FR	FHG	martin.wenger@iisb.fraunhofer.de	FM, IKE, NXP-FR	WP4	WP5
D_4.2	BMS-master software environment implemented on a rapid prototyping platform	This report describes the digital data communication between the BMS slave and master units. It focuses on how the necessary data from the level 1 sensors and multi-cell monitoring chips is made availabe to develop all the state estimation algorithms and the needed protections.	https://sensibat-project.eu/sensibat_results/	Level 5	IKE	IKE	igandiaga@ikerlan.es	NXP-FR, FHG	WP4	WP5
D_4.3	BMS-slave—equipped battery module based on series connected six L1-5Ah cells	This report provides details on the mechanical, thermal and electrical design aspects of the battery module and junction box.	https://sensibat-project.eu/sensibat_results/	Level 5	FM, IKE, FHG	FM	taranjitsingh.singh@flandersmake.be	IKE, FHG	WP4	WP5
D_4.4	Advanced module-level SOC, SOH, SOE, SOP and SOS estimators based on level 1 sensors: report + software.	This is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal L1 sensors.	https://sensibat-project.eu/sensibat_results/ Github available on request (via taranjitsingh.singh@flandersmake.be)	Level 5	IKE, FM, TUE, NXP-NL	IKE	igandiaga@ikerlan.es	FM, TUE, NXP-NL	WP4	WP5
D_4.5	Advanced module-level SOC, SOH, SOE, SOP and SOS estimators based on level 2 sensors: report + software.	This is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal L2 sensors.	https://sensibat-project.eu/sensibat_results/	Level 5	FM, BDM, IKE, TUE, NXP-NL	FM	taranjitsingh.singh@flandersmake.be	BDM, IKE, TUE, NXP-NL	WP4	WP5
P_4.4_1	Towards State-of-Charge Estimation for Battery Packs: Reducing Computational Complexity by Optimising Model Sampling Time and Update Frequency of the Extended Kalman Filter	This paper aims to reduce the computational complexity of single-cell SOC estimation, which already achieves satisfactory performance, such that it can be more easily scaled to large arrays of cells inside battery packs. This is done by experimenting with a range of sampling times for the models used in an Extended Kalman Filter (EKF) and by adjusting the update frequency of this estimator.	https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9482634	Level 1	TUE, NXP	TUE	h.j.bergveld@tue.nl	NXP-NL	WP4	-
P_4.4_2	Combined Cell-Level Estimation of State-of-Charge and Temperature in Battery Packs	Accurately estimating the State-of-Charge (SoC) and temperature of lithium-ion cells inside a battery pack is critical for safe and reliable operation. This paper extends battery state estimation from single-cell SoC estimation towards a combined SoC and temperature estimation for a multi-cell pack	https://doi.org/10.23919/ACC53348.2022.9867694	Level 5	TUE, NXP	TUE	h.j.bergveld@tue.nl	NXP-NL	WP4	-
P_4.4_3	Battery Electric Vehicle Range Extension by Empirical Battery Modelling, State Estimation and Active Cell Balancing	Battery Electric Vehicle Range Extension by Empirical Battery Modelling, State Estimation and Active Cell Balancing	https://research.tue.nl/en/publications/battery-electric-vehicle-range-extension-by-empirical-battery-mod	Level 5	TUE	TUE	h.j.bergveld@tue.nl		WP4	-
P_4.4_4	Comparison of battery electromotive-force measurement and modelling approaches	Compares electromotive-force measurement and modelling approaches. Extensive review of the available methods. All methods are compared for two different cell chemistries. Pareto analysis of accuracy versus required measurement time.	https://reader.elsevier.com/reader/sd/pii/S2352152X22018989?token=DA2B50AAD5DB4D24FAD205C1273B094CE00172B5D03CF0EF10D60EA0C62CB762C310E38F08365192DA289273D97EBD83&originRegion=eu-west-1&originCreation=20221108124859	Level 5	TUE, NXP	TUE	h.j.bergveld@tue.nl	NXP-NL	WP4	-
P_4.4_5	Rapid empirical battery electromotive-force and overpotential modelling using input–output linear parameter-varying methods	Develops local and global linear parameter-varying modelling approaches. Proposes an iterative scheme to rapidly identify a complete empirical battery model. Model includes both electromotive-force and overpotential dynamics. Total required measurement time is reduced by a factor 7 to 35.	https://www.sciencedirect.com/science/article/pii/S2352152X23005820	Level 5	TUE, NXP	TUE	h.j.bergveld@tue.nl	NXP-NL	WP4	-

DEM_4.1_1	BMS-slave supporting the read out of cell-integrated pressure and temperature sensors (level 1)	The slave unit is a essential part of the battery management system (BMS) that will be developed for the demonstrator battery module based on level 1 sensors.	-	Level 3	FHG, IKE, NXP-FR	FHG	martin.wenger@iisb.fraunhofer.de	IKE, NXP-FR	WP4	-
DEM_4.1_2	Read out of cell-integrated pressure and temperature sensors (level 1)	The design can read-out a cell-integrated 5x7 resistive temperature sensor matrix and a 5x7 capacitive pressure sensor matrix (SENSIBAT Level-1 sensors)	-	Level 3	FHG, IKE, NXP-FR	FHG	martin.wenger@iisb.fraunhofer.de	IKE, NXP-FR	WP4	-
DEM_4.2	BMS-master software and hardware for 6 series L1-5Ah cells module	The master unit is a essential part of the battery management system (BMS) that will be developed for the demonstrator battery module based on level 1 sensors. This demostrator focuses on the developed software and hardware for the battery management: to allow optimal use of the energy and power capabilities of the battery and ensure safe and reliable operation. Rapid prototiping BMS concepts are used, and advanced state estimation algorithms will be implemented.	-	Level 3	FHG, IKE, NXP-FR	FHG	martin.wenger@iisb.fraunhofer.de	IKE, NXP-FR	WP4	-
DEM_4.3	Demonstrator battery module based on the series connection of at least six 5Ah pouch cells with level 1 sensors and equipped with BMS-slave board, and the junction box	This corresponds to sub-objective 3 of the project. This module serves to test and validate the level 1 sensors and their read-out electronics, advanced module-level state estimation algorithms and BMS operating strategy under realistic operating conditions.	-	Level 3	FHG, IKE, NXP-FR	FHG	taranjitsingh.singh@flandersmake.be	IKE, NXP-FR	WP4	-
M_4.4_1	Baseline model: Equivalent Circuit battery model with Kalman Filter.	This model is developed as baseline model to assess the improvements achieved with Level-1 and Level-2 based models.	None	Level 5	TUE	TUE	h.j.bergveld@tue.nl	FM, NXP-NL	WP4	WP5
M_4.4_2	L1 SoX algorithms	Developed robust and advanced state estimation functions based on data from L1 sensor. Several state (SOC/SOH/SOE/SOP) estimation algorithms are improved, better forecasting algorithms and novel safety concepts (SOS) are created,	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, TUE, FM	IKE	igandiaga@ikerlan.es	FM, TUEE	WP4	WP5
D_5.1	Test report on cell and module performance and safety.	This report allows analysing in a human-readable way the results obtained from Task 5.1 (e.g. the data from ED_5.1_1 to ED_5.1_35).	https://sensibat-project.eu/sensibat_results/	Level 5	AIT, ABEE, FM, FHG, IKE, VAR, NXP-FR, NXP-NL, TuE	AIT	bernd.eschelmueller@ait.ac.at	ABEE, FM, FHG, IKE, VAR, FHG, NXP-NL, TuE	WP5	WP1
D_5.2	Cost benefit assessment.	This is directly related to sub-objective 5 of the project: to analyse the cost-benefits of the sensing technologies and the applicability into cell manufacturing practices.	https://sensibat-project.eu/sensibat_results/	Level 5	ABEE, IKE, AIT, FM, FHG, BDM	ABEE	jasmin.smajic@abeegroup.com	IKE, AIT, FM, FHG, BDM	WP5	-
D_5.3	Recycling assessment and integrated validation	This is directly related to sub-objective 5 of the project: to analyse the cost-benefits of the sensing technologies and the applicability into cell manufacturing practices.	https://sensibat-project.eu/sensibat_results/	Level 5	VAR, ABEE, AIT, FM, POL, TuE, NXP-NL	VAR	harald.kren@varta-ag.com	ABEE, AIT, FM, POL, TuE, NXP-NL	WP5	-
ED_5.1_1	1Ah baseline cells - Data from performance tests.	This data contains information about cell capacity, energy, quasi-OCV curve, DC resistance and power at different SOC levels, volumetric and gravimetric power and energy densities, all of them in charge and discharge. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, ABEE, AIT, TuE	IKE, ABEE, AIT, TuE	igandiaga@ikerlan.es	-	WP5	WP4

ED_5.1_2	1Ah baseline cells - Data from EIS tests.	This data contains information about cell real and imaginary impedance, for different SOC values and frequencies. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT	AIT	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_3	1Ah baseline cells - Data from calendar life tests.	This data contains information about performance evolution of the cells due to calendar ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_4	1Ah baseline cells - Data from cycle life tests.	This data contains information about performance evolution of the cells due to cycle ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_5	1Ah baseline cells - Data from safety tests.	This data contains information about the safety tests, including e.g.: a video during the test, documented pictures of the cells before and after the test, picture of the test set up, as well as more data specific to each safety test. Additionally, if applicable, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at VAR	Level 1	VMI	VMI	harald.kren@varta-ag.com	-	WP5	WP4

ED_5.1_6	1Ah baseline cells - Data from post-mortem tests.	This data contains information about cell voltage, SOC, weight and dimensions before disassembly, total mass of of each component (cathode, anode, separator, packaging, tabs, etc.), pictures of each electrode, sensor area and adjacent cathode, anode and separator layers, as well as compositional analysis (XRD/XRF) of the cathode and anode adjacent to the sensing structure compared to non-adjacent ones. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_7	5Ah baseline cells - Data from performance tests.	This data contains information about cell capacity, energy, quasi-OCV curve, DC resistance and power at different SOC levels, volumetric and gravimetric power and energy densities, all of them in charge and discharge. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, ABEE, AIT, TuE	IKE, ABEE, AIT, TuE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_8	5Ah baseline cells - Data from EIS tests.	This data contains information about cell real and imaginary impedance, for different SOC values and frequencies. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT	AIT	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_9	5Ah baseline cells - Data from calendar life tests.	This data contains information about performance evolution of the cells due to calendar ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	ABEE	ABEE	igandiaga@ikerlan.es	-	WP5	WP4

ED_5.1_10	5Ah baseline cells - Data from cycle life tests.	This data contains information about performance evolution of the cells due to cycle ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE	IKE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_11	5Ah baseline cells - Data from safety tests.	This data contains information about the safety tests, including e.g.: a video during the test, documented pictures of the cells before and after the test, picture of the test set up, as well as more data specific to each safety test. Additionally, if applicable, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at VAR	Level 2	VAR	VMI	harald.kren@varta-ag.com	-	WP5	WP4
ED_5.1_12	5Ah baseline cells - Data from post-mortem tests.	This data contains information about cell voltage, SOC, weight and dimensions before disassembly, total mass of of each component (cathode, anode, separator, packaging, tabs, etc.), pictures of each electrode, sensor area and adjacent cathode, anode and separator layers, as well as compositional analysis (XRD/XRF) of the cathode and anode adjacent to the sensing structure compared to non-adjacent ones. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT	AIT	igandiaga@ikerlan.es	-	WP5	WP4

ED_5.1_13	1Ah cells with Level-1 sensors - Data from performance tests.	This data contains information about cell capacity, energy, quasi-OCV curve, DC resistance and power at different SOC levels, volumetric and gravimetric power and energy densities, all of them in charge and discharge. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, ABEE, AIT, TuE	IKE, ABEE, AIT, TuE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_14	1Ah cells with Level-1 sensors - Data from EIS tests.	This data contains information about cell real and imaginary impedance, for different SOC values and frequencies. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT, TuE	AIT, TuE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_15	1Ah cells with Level-1 sensors - Data from calendar life tests.	This data contains information about performance evolution of the cells due to calendar ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_16	1Ah cells with Level-1 sensors - Data from cycle life tests.	This data contains information about performance evolution of the cells due to cycle ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4

ED_5.1_17	1Ah cells with Level-1 sensors - Data from safety tests.	This data contains information about the safety tests, including e.g.: a video during the test, documented pictures of the cells before and after the test, picture of the test set up, as well as more data specific to each safety test. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at VAR	Level 1	VAR	VAR	harald.kren@varta-ag.com	IKE	WP5	WP4
ED_5.1_18	1Ah cells with Level-1 sensors - Data from post-mortem tests.	This data contains information about cell voltage, SOC, weight and dimensions before disassembly, total mass of of each component (cathode, anode, separator, packaging, tabs, etc.), pictures of each electrode, sensor area and adjacent cathode, anode and separator layers, as well as compositional analysis (XRD/XRF) of the cathode and anode adjacent to the sensing structure compared to non-adjacent ones. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_19	5Ah cells with Level-1 sensors - Data from performance tests.	This data contains information about cell capacity, energy, quasi-OCV curve, DC resistance and power at different SOC levels, volumetric and gravimetric power and energy densities, all of them in charge and discharge. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, ABEE, AIT	IKE, ABEE, AIT	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_20	5Ah cells with Level-1 sensors - Data from EIS tests.	This data contains information about cell real and imaginary impedance, for different SOC values and frequencies. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT	AIT	igandiaga@ikerlan.es	-	WP5	WP4

ED_5.1_21	5Ah cells with Level-1 sensors - Data from calendar life tests.	This data contains information about performance evolution of the cells due to calendar ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	ABEE	ABEE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_22	5Ah cells with Level-1 sensors - Data from cycle life tests.	This data contains information about performance evolution of the cells due to cycle ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE	IKE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_23	5Ah cells with Level-1 sensors - Data from tests for modelling and algorithm development.	This data contains information about specific tests carried out for the development of models and algorithms. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, data from baseline cells will be used to develop baseline models (see M_4.4_1), for comparison purposes.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	FM, TuE	FM, TuE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_23	5Ah cells with Level-1 sensors - Data from safety tests.	This data contains information about the safety tests, including e.g.: a video during the test, documented pictures of the cells before and after the test, picture of the test set up, as well as more data specific to each safety test. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	availiable at VAR	Level 1	VAR	VAR	harald.kren@varta-ag.com	IKE	WP5	WP4

ED_5.1_24	5Ah cells with Level-1 sensors - Data from post-mortem tests.	This data contains information about cell voltage, SOC, weight and dimensions before disassembly, total mass of of each component (cathode, anode, separator, packaging, tabs, etc.), pictures of each electrode, sensor area and adjacent cathode, anode and separator layers, as well as compositional analysis (XRD/XRF) of the cathode and anode adjacent to the sensing structure compared to non-adjacent ones. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT	AIT	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_25	1Ah cells with Level-2 sensors - Data from performance tests.	This data contains information about cell capacity, energy, quasi-OCV curve, DC resistance and power at different SOC levels, volumetric and gravimetric power and energy densities, all of them in charge and discharge. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-2 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	IKE, ABEE, AIT	IKE, ABEE, AIT	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_26	1Ah cells with Level-2 sensors - Data from EIS tests.	This data contains information about cell real and imaginary impedance, for different SOC values and frequencies. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	AIT, TuE	AIT, TuE	igandiaga@ikerlan.es	-	WP5	WP4
ED_5.1_27	1Ah cells with Level-2 sensors - Data from calendar life tests.	This data contains information about performance evolution of the cells due to calendar ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-2 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4

ED_5.1_28	1Ah cells with Level-2 sensors - Data from cycle life tests.	This data contains information about performance evolution of the cells due to cycle ageing, from the performance tests carried out periodically. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-1 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	availiable at ABEE	Level 1	ABEE	ABEE	jasmin.smajic@abeegroup.com	-	WP5	WP4
ED_5.1_29	1Ah cells with Level-2 sensors - Data from safety tests.	This data contains information about the safety tests, including e.g.: a video during the test, documented pictures of the cells before and after the test, picture of the test set up, as well as more data specific to each safety test. Additionally, the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, ect.) shall be provided, as well as Level-2 sensors logging. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	availiable at VAR	Level 1	VAR	VAR	harald.kren@varta-ag.com	IKE	WP5	WP4
ED_5.1_30	1Ah cells with Level-2 sensors - Data from post-mortem tests.	This data contains information about cell voltage, SOC, weight and dimensions before disassembly, total mass of of each component (cathode, anode, separator, packaging, tabs, etc.), pictures of each electrode, sensor area and adjacent cathode, anode and separator layers, as well as compositional analysis (XRD/XRF) of the cathode and anode adjacent to the sensing structure compared to non-adjacent ones. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors.	-	-	AIT	AIT	bernd.eschelmueller@ait.ac.at	-	WP5	WP4
ED_5.1_31	1Ah cells with Level-2 sensors - Data from driving cycle tests.	This data contains information about the recorded timeseries produced by the battery cyclers (such as temperature, current, voltage, as well as Level-2 sensors logging, ect.) during the WLTP driving cycles applied at cell-level. For more detailed information on collected data, see deliverable D1.2. Such data is directly related to sub-objective 4 of the project: to develop robust and advanced state estimation functions based on the data from the internal sensors. In fact, such data will be used to determine the performance gains by the implementation of the integrated sensors.	https://ikerlan.sharepoint.com/sites/SENSIBAT/Documentos	Level 2	FM	FM	igandiaga@ikerlan.es	-	WP5	WP4

D_6.1	SENSIBAT project identity	This is related with the objective of exploiting the results achieved in the project.	https://sensibat-project.eu/sensibat_results/	Level 5	All	UNR	m.vanderkamp@uniresearch.com	All	WP6	All
D_6.2	Project website	This is related with the objective of exploiting the results achieved in the project.	https://sensibat-project.eu/sensibat_results/	Level 5	All	UNR	m.vanderkamp@uniresearch.com	All	WP6	All
D_6.3	Dissemination and Exploitation Plan.	This is related with the objective of exploiting the results achieved in the project.	https://sensibat-project.eu/sensibat_results/	Level 5	All	POL, VAR	silvia.bodoardo@polito.it	All	WP6	All
D_6.4	AB Workshop	This is a summary of the first Advisory Board meeting which was held for the SENSIBAT project. The document shows the main results and recommendations given by the AB-members during the workshop	https://sensibat-project.eu/sensibat_results/	Level 5	All	POL, UNR	silvia.bodoardo@polito.it	All	WP6	All
D_6.5	II AB Workshop	This is a summary of the second and final Advisory Board meeting which was held for the SENSIBAT project. The document shows the main results and recommendations given by the AB-members during the workshop	https://sensibat-project.eu/sensibat_results/	Level 5	All	POL, UNR	silvia.bodoardo@polito.it	All	WP6	All
P_6.1	SENSIBAT Zeroing course - Ageing processes and Battery State Estimation	The Zeroing course took place on the 7th and 8th of March 2022 and provided the basics on Li-ion batteries, including: · Ageing processes · Battery states (e.g. SOC, SOP), their modelling and implementing these models in the BMS · Measuring battery states with sensors.	https://sensibat-project.eu/sensibat-zeroing-course/	Level 5	POL, VAR	POL	silvia.bodoardo@polito.it	All	WP6	All
D_7.1	Project Handbook.	This document describes all the procedures of the project, contains a detailed GANTT vhart and work brekdown structure including a schedule per task with responsible partners, use of ressources, deliverables and dependencies to other tasks.	https://sensibat-project.eu/sensibat_results/	Level 5	UNR, IKE	UNR	m.vanderkamp@uniresearch.com	All	WP7	All
D_7.2	Initial Quality Assurance and Risk Management Plan.	The objective of this document is to serve as the basis to ensure high quality in all developments of the project, from demonstrator to deliverables. The document also establishes the necessary means to identify the potential risks, estimate the impact and the probability of them and	https://sensibat-project.eu/sensibat_results/	Level 5	All	IKE	igandiaga@ikerlan.es	All	WP7	All
D_7.3	Initial Data Management Plan.	This document specifies which data will be generated in the project, and provides guidelines to handle research dataduring and after the end of the project. This initial document will be periodically updated to derive the final plan D7.5.	https://sensibat-project.eu/sensibat_results/	Level 5	All	IKE	igandiaga@ikerlan.es	All	WP7	All
D_7.4	Final Quality Assurance and Risk Management Plan.	The objective of this document is to serve as the basis to ensure high quality in all developments of the project, from demonstrator to deliverables. The document also establishes the necessary means to identify the potential risks, estimate the impact and the probability of them and then define the corresponding response.	https://sensibat-project.eu/sensibat_results/	Level 5	All	IKE	igandiaga@ikerlan.es	All	WP7	All
D_7.5	Final Data Management Plan.	This document specifies which data will be generated in the project, and provides guidelines to handle research dataduring and after the end of the project.	https://sensibat-project.eu/sensibat_results/	Level 5	All	IKE	igandiaga@ikerlan.es	All	WP7	All

There are some discrepancies between the spreadsheet named "SENSIBAT_Data_summary" presented in the "D7.3 – Initial Data Management Plan" and what is presented in the present Data Management Plan. In this final DMP, some non-used of common fields for the metadata have been suppressed. These removed fields in the data summary file are described below:

- Embargo period: there is no embargo period in the data generated planning to changing the accessibility level of the referred data.
- Re-used data: SENSIBAT project did not use additional data from external sources, except for cited sources in the deliverables and published articles.

3 Conclusion

This document provides a comprehensive overview of the data produced in the SENSIBAT project and handled following the procedures established in the D7.3 Initial Data Management Plan (DMP). The initial DMP outlined a systematic approach for managing research data during and after the conclusion of the project. The plan delineated specific guidelines regarding data collection, processing, and generation, specifying the extent of data accessibility to the public, and detailing the curation and preservation methods, including post-project considerations.

Regrettably, the objective of adhering to the FAIR principles (Findable, Accessible, Interoperable, and Reusable) within the scope of our project was not fully realized due to the unavailability of the BIG-MAP project archive beyond the confines of the project itself. Despite our earnest efforts to ensure compliance with FAIR principles, the limitations in accessing the BIG-MAP project archive from external sources hindered our ability to make the data as openly accessible and interoperable as intended. Recognizing the significance of data sharing and transparency, we acknowledge the need for broader access to the project archive to enhance the findability and reusability of the data. This unforeseen constraint underscores the importance of establishing comprehensive and inclusive data management practices from the inception of projects to facilitate broader collaboration and adherence to FAIR principles.

4 Acknowledgement

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Project partners

#	PARTICIPANT SHORT NAME	PARTNER ORGANISATION NAME	COUNTRY
1	IKE	IKERLAN S. COOP.	Spain
2	BDM	BEDIMENSIONAL SPA	Italy
3	POL	POLITECNICO DI TORINO	Italy
4	FHG	FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany
5	FM	FLANDERS MAKE VZW	Belgium
6	TUE	TECHNISCHE UNIVERSITEIT EINDHOVEN	The Netherlands
7	NXP NL	NXP SEMICONDUCTORS NETHERLANDS BV	The Netherlands
8	NXP FR	NXP SEMICONDUCTORS FRANCE SAS	France
9	ABEE	AVESTA BATTERY & ENERGY ENGINEERING	Belgium
10	VAR	VARTA MICRO INNOVATION GMBH	Germany
11	AIT	AIT AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH	Austria
12	UNR	UNIRESEARCH BV	The Netherlands

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