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## Solutions for large batteries for waterborne transport

GRANT AGREEMENT No. 963560



D5.1 – Define the battery storage component  
interfaces requirements

## Report details

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## Document History

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V0.1	06/02/2023	Deniz Süzen	Detailed index
V1.2	17/05/2023	Deniz Süzen	First draft
V1.3	29/05/2023	Deniz Süzen	Draft for internal review
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V2.0	06/07/2023	Cor van der Zweep (UNR)	FINAL ready for submission

## Project Abstract

The goal of the SEABAT project is to develop a full-electric maritime hybrid battery concept that is based on:

- Modularly combining high-energy batteries and high-power batteries,
- novel converter concepts and
- production technology solutions derived from the automotive sector.

The modular approach will reduce component costs (battery cells, converters) so that unique ship designs can profit from economies of scale by using standardized low-cost components. The concept will be suitable for ships requiring up to 1 MWh of storage or more.

## Public summary

Boundary diagrams are commonly used in automotive to show interactions between various systems and components. In this document, similar methodology is used to develop and analyze the interface between the various components of the Hybrid Energy Storage System (HESS) to ensure all of them could work together seamlessly.

Interfaces in HESS can be divided into 3 main groups as: (i) Electrical/Wiring Interfaces, (ii) Electronic/Communication Interfaces and (iii) Mechanical Interfaces. For the electrical and wiring interfaces, each component is taken and boundary diagrams representing each wire and harness components including fuses, fuse boxes etc. are developed. Similarly for the communication interfaces, each control unit in the HESS are taken and all communication, including control types; analog-digital or CAN, between these control units and sensors and actuator are listed. For the mechanical interface, each sub system and their enclosures are developed thus dividing the overall HESS into smaller components and modules that can be considered as modular sub systems. Compared to the original time table, this deliverable has been delayed as to include and accommodate for the design iterations from WP4.

This document includes how above-mentioned interfaces are developed in the HESS and analysis of the structure given by the boundary diagrams. Eventually, concept explained here will also be applied to the prototype HESS and to be produced and validated in further work packages.

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6	VARD	VARD ELECTRO AS
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