SW Development Platform

D2.2

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Project	INCOBAT	Project Number	608988
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1 Publishable Executive Summary

Though electro-mobility is widely considered as the most promising alternative to conventional cars, based on combustion engines, its market penetration suffers from technological restrictions, which today mainly relate to the battery solutions, which still are expensive, limited in capacity and not very durable. INCOBAT aims to provide innovative and cost efficient management systems for the next generation of HV-batteries. The INCOBAT project has developed a platform concept in order to achieve cost reduction, reduced complexity, increased reliability as well as flexibility and higher energy efficiency. Improvements in energy efficiency require continuous and accurate monitoring of the battery states as well as advanced control and optimization methods.

For the SW developments in INCOBAT, a modular development platform is required. Hence, the control strategy and the application software in general is expected to come from different providers and to require different levels of criticality. The activities of SW architect – to define the SW blocks as well as their interfaces – and the activities of SW integrator – integrating the different SW modules and ensuring correct operation of the entire control system – are especially challenging in the context of automotive supply chain with constraints related to functional safety (ISO 26262). A modular platform is required to enable the distributed development and flexible deployment of different control strategies and applications in an efficient way.

For the SW developments in INCOBAT, the proposed common, modular software development platform consist of:

- a layered SW architecture, consisting of several layers and components as well as their interfaces, providing access for the applications to the underlying HW capabilities,
- a suitable SW development tool chain, which supports the application SW developers by means of an effective and consistent development process to seamlessly integrate their particular applications to an overall BMS system.

Accordingly, this deliverable provides a description of the SW architecture and its components as well as a set of SW development tools, which are recommended to be used for SW development. Both parts are based on technical requirements, which have been defined by the project in an earlier deliverable (D1.2 "Requirements and metrics" **Fehler! Verweisquelle konnte nicht gefunden werden.**). Thus, that deliverable summarizes the relevant requirements for the development platform. Further, some background information about established architecture approaches is given. The deliverable ends with a short mapping of the project requirements towards the components and tools, realized by the development platform framework.