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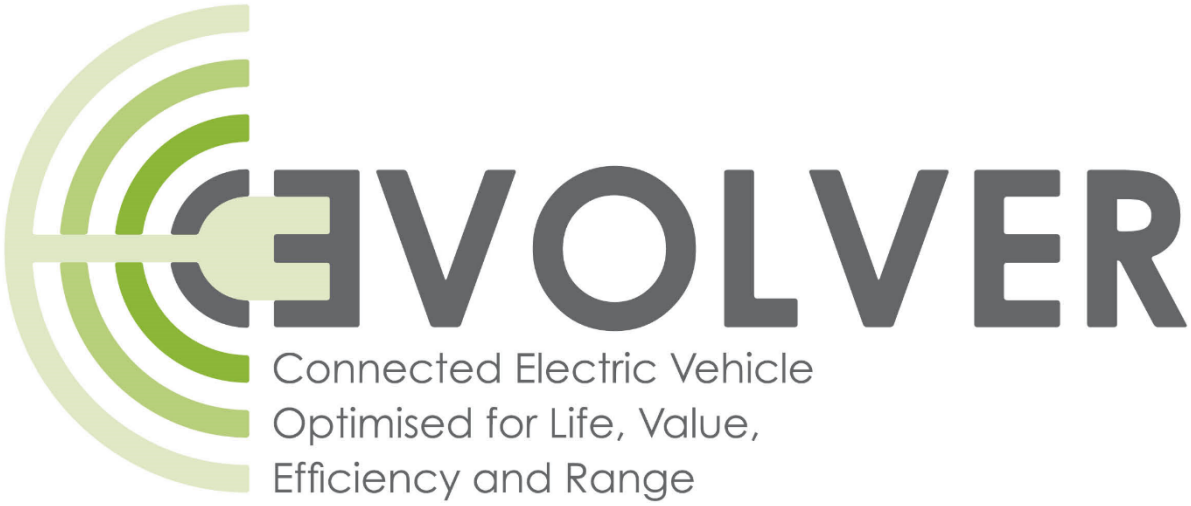
Connected Electric Vehicle Optimized for Life, Value, Efficiency and Range

GRANT AGREEMENT No. 824295



CEVOLVER – Milestone Report

Milestone 1 Specifications interfaces

Milestone No.	CEVOLVER Milestone 1	
Related WP	WP1 / WP2	
Milestone Title	Specifications interfaces	
Milestone Date	2019-06-06	
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Publishable summary

CEVOLVER focuses on a leap forward in user's confidence, functionalities and energy efficiency of future electric vehicle while ensuring their affordability by a user centric development approach.

CEVOLVER Milestone 1 covers specifications of brand independent or common electric interfaces. Related tasks 1.1 and 2.1 were finalized and deliverables D1.1 and D2.1 agreed and published. Information from these tasks were transferred to work packages 3, 4 and 5.

Task 1.1 defines the technical implementation architecture. The architecture is determined based on the state-of the-art technologies and the already known boundaries of this project. A validation and potential adaptations of the architecture will be conducted after the functional decomposition during the ongoing project. Thus, the results depicted in this deliverable may not be final and alterations may be explained in later deliverables.

The determination of the technical implementation architecture is required to identify the needed brand independent E/E interfaces and communication protocols. The original depiction of the interactions of VCU (Vehicle Control Unit) and cloud were enhanced by the complete interfaces in the targeted system of interest. The analysis is based on a differentiation between signal and physical interfaces in order to be able to design the powertrain and the communication architecture. The technical implementation architecture includes also the thermal system, the E-Powertrain, the vehicle internal connectivity units and alternative external devices to support the connectivity of the driver, the vehicle and external services.

WP2.1 concerns the development of a virtual simulation framework that allows to develop advanced energy and thermal management strategies using connected information for different functional architectures of the thermal system. The simulation framework will be used in early phases to aid in the sizing of components for the demonstrator vehicles by supporting the engineering decisions. The framework will also use connected information in a later phase to develop the advanced energy and thermal management strategies to be implemented and tested in the demonstrators.
Where needed, the simulation framework will also serve to compensate (explain and quantify) performance differences in the demonstrator vehicles caused by noise factors in environmental conditions (between reference and validation tests on the road). Similarly, it can be used to compare and superimpose performance gains of different versions of the demonstrator vehicles when all functionalities are not established in full scale in all the demonstrator vehicles.