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

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CEVOLVER – Milestone Report

Milestone 2 Connectivity interface requirements

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Publishable summary

The work package WP1 is setting the scene for a connected energy and thermal management concept. Milestone 2 verifies the connectivity interface requirements for simulation supported testing ready and use cases and methodology for developing user centric connected EVs. D1.2 and D1.3 have initially been aligned with WP2, 3, 4 and 5 but this is an ongoing process.

Task 1.2 covers the “Connectivity interface requirements for simulation supported testing”. Brand independent standards for communication with the cloud (external servers) or connected devices (tablet or on vehicle level) and the data to be communicated have been defined and the structure of the cloud(s) and interfaces between systems of interest, defined in WP 1.1, has been addressed. With the support of Bosch, Ford, CRF, VUB and RWTH, the first list of connectivity requirements, including the definition and origin of data sources, the data formats, the acquisition and transfer rates, is established and are currently planned to be set up in subsequent WPs.

Task 1.3 covers the methodological approach for user centric development of electric vehicle (EV) based on a systematic description and application of use cases.

User centric development approach covers both innovative control strategies and rightsizing of components. This approach puts the user needs in the middle in order to identify attractive features for typical usage scenarios for different vehicle types and classes. Apart from experience from previous generations of vehicles big data analysis has been identified as a valuable source of information in describing detailed use cases that in turn serve as a new perspective to support the development of control strategies and decisions regarding system layout and component specifications. The main is on defining use cases, which serve as an important step in deriving the control functions according to the System Engineering approach. Use cases are defined as the interaction between the actor, system and the environment to achieve the goals, such as complete a long trip, deliver a set of parcels, complete a commuter trip, etc.