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

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CEVOLVER – Milestone Report
Milestone NO. 6 – Demonstrator vehicles

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Publishable summary (short)

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

This milestone consists in making available the Project prototype vehicles for the subsequent full-scale tests and the WP6 final validation on the defined use cases.

The three CEVOLVER vehicle validators have been developed in:

- one in WP4 (System development, vehicle upgrade design and build and demonstration of a FORD EV)
- two in WP5 (System and component testing and demonstration using Fiat A class electric vehicles)

All the detailed information referred to the first vehicle validator (in charge of Project partner FORD) are included in D4.3 (Report on operational demonstrator vehicle that holds the optimised vehicle system, including all required components and subsystems). While the information about the other two vehicle validators (in charge of Project partner CRF) are reported in D5.4 (Demonstrator vehicle + OEM cloud with energy and thermal management functionality ready for test).

D4.3 gives an overview of the controls setup in the WP4 demonstrator, which is a battery electric 3.5 t transporter. In addition, the integration of the added thermal system components and the implementation of the connected strategies are described in detail. The commissioning and calibration of the functions are not part of this report but will be described in a subsequent report D4.4.

D5.4 describes all the modification activities performed on the two vehicle validators realized in WP5:

- Vehicle Validator 1: realized starting from the Fiat 500e (North America) with in addition the OPTEMUS project heat pump system (CRU - Compact Refrigeration Unit)
- Vehicle Validator 2: realized starting from the new Fiat 500e with DC fast charge functionality

to apply the Cloud-to-Vehicle bidirectional communication hardware & software architecture, implement, debug and tune the CEVOLVER functions:

- in Vehicle Validator 1: the integrated energy and thermal management (cabin comfort and e-powertrain components thermal management)
- in Vehicle Validator 2: the HV Battery thermal preconditioning before the DC fast charge (preheating or precooling depending on the conditions) with the aim to minimize the charging time but respecting the expected vehicle range and its battery life target (optimized charging)