

EUROPEAN COMMISSION

HORIZON 2020 PROGRAMME - TOPIC H2020-LC-GV-01-2018
Connected Electric Vehicle Optimized for Life, Value, Efficiency and Range

GRANT AGREEMENT No. 824295



CEVOLVER – Deliverable Report

5.2 - SW design specifications – summary report

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.

Work Package 5 - WP5 (System and component testing and demonstration using Fiat A class electric vehicles) focuses on optimal predictive control of mostly existing pre-optimized vehicle hardware with the additional benefit from the innovation of cloud-based user-centric predictive optimization algorithms.

While WP1 is dedicated to brand-independent use cases, requirements and specifications, CRF has defined in task 5.1 the strategy and the system architecture of the connected demonstrator vehicle (the Fiat 500e with the innovative thermal-energy solutions developed in the EU cofounded project OPTEMUS). The general structure of the architecture has been described in the D5.1 already delivered.

In subtask 5.2.1 CRF with support by FEV, VUB and IFPEN have decided to implement all functions in the vehicle validator VCU and in the independent cloud in order to increase the quickness of the system and to reduce its complexity. This leads to refining the interface for data exchange between FCA vehicle information infrastructure and the Eco-Routing/Driving App by IFPEN direct connected to the Brand Independent Cloud.

The communication mechanism has been defined in order to prevent any unauthorized action on vehicle/user information and controls.

In subtask 5.2.2 CRF has adjusted its vehicle architecture to connect the Eco-Routing/Driving App following the Task 5.1 specs. CRF and IFPEN teams have collaborated to define the details of the communication which will be described deeply in this document.

Moreover the function architecture and system design have been handled in this task, to review and implement input/output signals specifications, and identify HMI input/output.

CRF put special emphasis on the target architecture changes for a future production vehicle considering the vehicle specific system architecture and potential demonstrator limits. The demonstrator vehicle will be a training lab vehicle to learn more about the connectivity capabilities and solve HW and SW road blocks in advance with respect to the official development phase

The main results of this activity have been summed-up in this deliverable (D5.2) describing the modifications to the brand-specific existing hardware, software and information infrastructure that enable the CRF demonstrator.

As starting point, the infrastructure developed during the NeMo EU H2020 project has been taken into account.