

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

5.3 - SW for Demonstrator and OEM cloud

Deliverable No.	CEVOLVER D5.3	
Related WP	WP5	
Deliverable Title	SW for Demonstrator and OEM cloud	
Deliverable Date	2021-07-12	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO)	
Written By	Allocco Alessandro (CRF) Roberto Tola (CRF) Olivier Lemaire (IFPEN)	2021-04-20
Checked by	Vittorio Ravello (CRF)	2021-04-25
Reviewed by (if applicable)	Antonio Sciarretta (IFPEN) Alexander Wahl (RWTH)	2021-04-26 2021-04-28
Approved by	Jens Tang (FEV)	2021-07-09
Status	Final	2021-07-12

Disclaimer/ Acknowledgment



Copyright ©, all rights reserved. This document or any part thereof may not be made public or disclosed, copied or otherwise reproduced or used in any form or by any means, without prior permission in writing from the CEVOLVER Consortium. Neither the CEVOLVER Consortium nor any of its members, their officers, employees or agents shall be liable or responsible, in negligence or otherwise, for any loss, damage or expense whatever sustained by any person as a result of the use, in any manner or form, of any knowledge, information or data contained in this document, or due to any inaccuracy, omission or error therein contained.

All Intellectual Property Rights, know-how and information provided by and/or arising from this document, such as designs, documentation, as well as preparatory material in that regard, is and shall remain the exclusive property of the CEVOLVER Consortium and any of its members or its licensors. Nothing contained in this document shall give, or shall be construed as giving, any right, title, ownership, interest, license or any other right in or to any IP, know-how and information.

This project has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No 824295. The information and views set out in this publication does not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions and bodies nor any person acting on their behalf, may be held responsible for the use which may be made of the information contained therein.

1 Publishable summary

CEVOLVER focuses on a leap forward in user's confidence, functionalities and energy efficiency of future battery 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.

According to specifications (Task 5.1 - D5.1) and feasibility assessment (Task 5.2 - D5.2), in Task 5.3 (Development, commissioning and calibration of HW and SW) hardware and software have been already defined and implemented with inputs from WP1 and WP2 (sub task 5.3.1: Hardware and Software in vehicle).

In D5.2 (SW design specifications - summary report) it has been given an overview of the expected interaction between the vehicle and cloud with related systems architecture, as well as the description of the software design specifications and the planned hardware updates and systems architectures of the WP5 vehicle validator.

D5.3 is focused on the vehicle side SW functionalities and related SW and HW integration activities. In particular the deliverable report describes the new functionalities developed in the Cevolver Project and the signals added as first to the WP5 Vehicle Validator 1 development VCU (Vehicle Control Unit) to improve the vehicle functionality and the thermal-energy management to increase the system efficiency.

The different functionalities/features are all cloud-based:

- Partially with SW off-board (in the Brand Independent Cloud/web server):
 - Eco-driving
 - Eco-routing with assured charging (also called Eco-charging)
- Partially with SW on-board (integrated in the Vehicle Validator development VCU):
 - cabin and e-powertrain thermal management
 - HVB (High Voltage Battery) preconditioning for optimized charging)

7 Acknowledgement

The author(s) would like to thank the partners in the Project for their valuable comments on previous drafts and for performing the review.

Project partners:

#	Partner	Partner Full Name
1	FEV	FEV Europe GmbH
2	BOSCH	Robert Bosch GmbH
3	FORD	Ford-Werke GmbH
4	CRF	Centro Ricerche Fiat
5	IFPEN	IFP Energies Nouvelles
6	RWTH	Rheinisch-Westfaelische Technische Hochschule Aachen
7	VUB	Vrije Universiteit Brussel
8	UNR	Uniresearch BV
9	I2M	I2M Unternehmensentwicklung GmbH
10	RBOS	Robert Bosch AG



This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement no. 824295