

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

D2.1 Report on requirements for the virtual simulation
framework

Deliverable No.	CEVOLVER D2.1	
Related WP	WP2	
Deliverable Title	Report on requirements for the virtual simulation framework	
Deliverable Date	2019-06-04	
Deliverable Type	REPORT	
Dissemination level	Confidential – member only (CO) /	
Written By	Cedric De Cauwer (VUB) Andreas Schmitz (FEV) Caroline NGO (IFPEN) Chen Bicheng (RWTH) Manns Patrick (RWTH) Markus Espig (Ford) Caroline NGO (IFPEN) Ian Faye (Bosch) Vittorio Ravello (CRF) Ilaria Torquati (i2m)	2019-03-31 2019-04-12 2019-04-11 2019-04-16 2019-04-16 2019-04-29 2019-04-29 2019-05-10 2019-05-14 2019-05-15
Checked by	Cedric De Cauwer (VUB)	2019-05-15
Reviewed by (if applicable)	Antonio Sciarretta (IFPEN) Jakob Andert (RWTH)	2019-05-23 2019-05-27
Approved by	Jens Tang (FEV)	2019-05-31
Status	Final	2019-06-04

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 programme 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.

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.

This work package 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.

This deliverable reports on the requirements for the virtual simulation framework for its use in the different phases of the project. It contains the vision for the platform, the general structure in the different phases of the project, and the functional requirements of the sub-system models.

6 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
5	IFPEN	IFP Energies Nouvelles
6	RWTH	Rheinish-Westfaelische Technische Hochschule Aachen
7	VUB	Vrije Universiteit Brussel
8	UNR	Uniresearch BV
9	I2M	I2M Unternehmensentwicklung GmbH
10	RBOS	Robert Bosch AG
11	CRF	Centre Recherche Fiat



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