

PROJECT

## VISION-xEV

# Virtual Component and System Integration for Efficient Electrified Vehicle Development

**Funding:** European (Horizon 2020)

**Duration:** Jan 2019 - Dec 2021

**Status:** Ongoing

**Total project cost:** €3,995,061

**EU contribution:** €3,995,061



[CORDIS RCN : 218687](#)

### Background & policy context:

The major challenge the European automotive industry is currently faced with is the 2020 CO2 fleet emission target of 95g/km and the envisaged further reduction of the CO2 emission limits in the European Union for the period after 2025. The European OEMs are also challenged by meeting Euro 6 tail pipe emission standards while already developing powertrains that need to fulfil future Euro 7 emission limits. In addition, the change of the emission test drive cycle from NEDC to WLTP and the implementation of real-driving emissions (RDE) imposes additional challenges onto the European car industry.

The effort to meet the future fleet CO2 emission limits has been leading to the need for introduction of a broad range of electrified vehicle configurations into the portfolio of the European OEMs. Besides the increased development effort related to the electrified powertrain system itself, electrification also results in more derivatives from the standard platforms and vehicle models, which further increases the development effort and costs.

An electrified powertrain is a highly complex mechatronic system, and meeting all functional and performance requirements efficiently demands a highly integrated development approach. Micro- and mild-hybrid architectures add moderate complexity to the conventional powertrain, however, the further step towards heavy electrification, aimed at a largely improved overall energy efficiency and unconditional emission legislation compliance under RDE conditions, requires advanced design and optimisation methods and tools to master the related development challenges.

### Objectives:

This is exactly where the VISION-xEV project aims at providing its scientific and technical contribution: to develop and demonstrate a generic virtual component and system integration framework for the efficient development of all kinds of future electrified powertrain systems.

### Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

**Institute type:** Public institution

**Institute name:** European Commission

**Funding type:** Public (EU)

**Other programmes:** LC-GV-02-2018 Virtual product development and production of all types of electrified vehicles and components

### Lead Organisation:

**Avl List Gmbh**

**Address:**

Hans-List-Platz

8020 Graz  
Austria

**Organisation Website:**

<http://www.avl.com>

**EU Contribution:** €356,598

**Partner Organisations:**

**Renault Represented By Gie Reginov**

**Address:**

Quai Alphonse Le Gallo 13/15  
92100 BOULOGNE-BILLANCOURT  
France

**Organisation Website:**

<http://www.renault.com>

**EU Contribution:** €375,176

**Kungliga Tekniska Hoegskolan**

**Address:**

Brinellvagen 8  
100 44 Stockholm  
Sweden

**EU Contribution:** €249,650

**Centro Ricerche Fiat - Societa Consortile Per Azioni**

**Address:**

Strada Torino, 50  
10043 ORBASSANO (TO)  
Italy

**Organisation Website:**

<http://www.crf.it>

**EU Contribution:** €230,750

**Aristotelio Panepistimio Thessalonikis**

**Address:**

KEDEA BUILDING, TRITIS SEPTEMVRIOU, ARISTOTLE UNIV CAMPUS  
54636 THESSALONIKI  
Greece

**Organisation Website:**

<http://www.auth.gr>

**EU Contribution:** €299,400

**Vrije Universiteit Brussel**

**Address:**

Pleinlaan  
1050 Brussel  
Belgium

**Organisation Website:**

<http://www.vub.ac.be>

**EU Contribution:** €333,250

**Technische Universität Berlin**

**Address:**

STRASSE DES 17 JUNI 135  
10623 Berlin  
Germany

**Organisation Website:**

<http://www.tu-berlin.de>

**EU Contribution:** €264,925

**Consiglio Nazionale Delle Ricerche**

**Address:**

Piazzale Aldo Moro  
185 Roma  
Italy

**Organisation Website:**

<http://www.cnr.it>

**EU Contribution:** €299,338

**Politecnico Di Milano**

**Address:**

Piazza Leonardo Da Vinci 32  
20133 Milano  
Italy

**Organisation Website:**

<http://www.polimi.it>

**EU Contribution:** €290,000

**Universitat Politecnica De Valencia**

**Address:**

Camino De Vera S/n  
46022 Valencia  
Spain

**Organisation Website:**

<http://www.upv.es>

**EU Contribution:** €360,000

**Zf Friedrichshafen Ag**

**Address:**

Graf-von-Soden-Platz 1  
88046 Friedrichshafen  
Germany

**Organisation Website:**

<http://www.zf.com>

**EU Contribution:** €130,250

**Fpt Motorenforschung Ag**

**Address:**

SCHLOSSGASSE 2  
9320 ARBON  
Switzerland

**EU Contribution:** €383,125

**Avl Qpunkt Deutschland Gmbh****Address:**

STRAUSSENLETTENSTRASSE 15  
85053 INGOLSTADT  
Germany

**EU Contribution:** €267,600

**Univerza V Ljubljani****Address:**

KONGRESNI TRG 12  
1000 LJUBLJANA  
Slovenia

**Organisation Website:**

<http://www.uni-lj.si>

**EU Contribution:** €155,000

**Technologies:**

Computer-aided design and engineering  
Powertrain integration simulation

**Development phase:** Demonstration/prototyping/Pilot Production

**STRIA Roadmaps:** Vehicle design and manufacturing

**Transport mode:** Road transport

**Transport sectors:** Passenger transport

**Transport policies:** Environmental/Emissions aspects, Decarbonisation

**Geo-spatial type:** Other