

PROJECT

## OBELICS

# Optimization of scalable real-time models and functional testing for e-drive Concepts

**Funding:** European (Horizon 2020)

**Duration:** Oct 2017 - Sep 2020

**Status:** Ongoing

**Total project cost:** €9,077,498

**EU contribution:** €9,077,498



[CORDIS RCN : 211708](#)

### Background & policy context:

As the impact of global warming becomes increasingly clear, the environmental impact of conventional fossil-fuelled vehicles is undergoing close scrutiny by authorities and the public; correspondingly electric vehicles and electrified transportation are emerging as the only sustainable alternative to preserving the environment and guaranteeing the mobility needs of the future. Although the switch from conventional to EV represents a major challenge for the automotive industry, with significant obstacles still to be overcome, it also represents a major market and employment opportunity for all the supply chain. Specifically, before their mass deployment can become a reality, it is crucial to guarantee that the real operational performance, safety, reliability, durability and affordability of EVs attain at least the same level as conventional vehicles. Current, state-of-the-art EVs do not reach these targets due to limited technical maturity of key components (e.g. batteries) and limited available know-how and tools, also in the area of testing and simulation.

### Objectives:

Today industrial R&D must focus on bringing new, improved mass-production compliant vehicles to the market rapidly, implementing advanced components and architectures for higher operational efficiency: In this context, the OBELICS project address the urgent need for new tools to enable the multi-level modelling and testing of EV and their components in order to deliver more efficient vehicle designs faster while supporting modularity to enable mass production and hence improved affordability. OBELICS aims for a step change in the performance (target: + 20%, i.e. from 100 Wh/kg to 120 Wh/kg), efficiency (target: + 20%), safety (target: + factor 10) and lifetime (target: + 30%, i.e. from 100,000 km/8 years to 130,000 km years/11 years) of e-drivetrains and the development time (target: - 40%, i.e. from 5 years to 3 years) and efforts (target: -50%, i.e. from 100 fte and 30 million euro to 50 fte and 15 million euro).

### 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)

### Lead Organisation:

**Avl List Gmbh**

**Address:**

Hans-List-Platz  
8020 Graz  
Austria

**Organisation Website:**

<http://www.avl.com>

**EU Contribution:** €870,563

## Partner Organisations:

### Robert Bosch Gmbh

**Address:**

Robert-Bosch Platz  
70839 Gerlingen-Schillerhoehe  
Germany

**Organisation Website:**

<http://www.bosch.com>

**EU Contribution:** €378,969

### Centro Ricerche Fiat - Societa Consortile Per Azioni

**Address:**

Strada Torino, 50  
10043 ORBASSANO (TO)  
Italy

**Organisation Website:**

<http://www.crf.it>

**EU Contribution:** €480,750

### Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.

**Address:**

Carl-Zeiss-Str. 18-20  
55129 Mainz  
Germany

**EU Contribution:** €462,675

### Commissariat A L Energie Atomique Et Aux Energies Alternatives

**Address:**

RUE LEBLANC 25  
75015 PARIS 15  
France

**Organisation Website:**

<http://www.cea.fr>

**EU Contribution:** €369,519

### Universita Degli Studi Di Firenze

**Address:**

Piazza San Marco 4  
50121 Florence  
Italy

**Organisation Website:**

<http://www.unifi.it>

**EU Contribution:** €355,125

**Vrije Universiteit Brussel****Address:**

Pleinlaan  
1050 Brussel  
Belgium

**Organisation Website:**

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

**EU Contribution:** €557,075

**Siemens Industry Software Sas****Address:**

Avenue Morane Saulnier 13 Espace Velizy Immeuble Le Chavez  
92320 Chatillon  
France

**Organisation Website:**

<http://www.ugsplm.com>

**EU Contribution:** €720,375

**Kemijski Institut****Address:**

HAJDRIHOVA 19  
1000 LJUBLJANA  
Slovenia

**Organisation Website:**

<http://www.ki.si>

**EU Contribution:** €218,360

**Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.****Address:**

Inffeldgasse 21a / 1. Stock  
8010 GRAZ  
Austria

**Organisation Website:**

<http://www.v2c2.at>

**EU Contribution:** €338,800

**Siemens Industry Software Nv****Address:**

INTERLEUVENLAAN 68  
3001 LEUVEN  
Belgium

**Organisation Website:**

<http://www.plm.automation.siemens.com>

**EU Contribution:** €770,438

**Uniresearch****Address:**

Elektronicaweg 16c  
2628XG DELFT  
Netherlands

**Organisation Website:**  
<http://www.uniresearch.nl>

**EU Contribution:** €176,563

**Fh Joanneum Gesellschaft Mbh**

**Address:**  
Alte Poststrasse 149  
8020 Graz  
Austria

**EU Contribution:** €392,545

**Ford Otomotiv Sanayi Anonim Sirketi**

**Address:**  
AKPINAR MAH HASAN BASRI CAD NO 2 SANCAKTEPE  
34885 ISTANBUL  
Turkey

**EU Contribution:** €417,625

**Avl Software And Functions Gmbh**

**Address:**  
Im Gewerbepark B 29  
93059 Regensburg  
Germany

**EU Contribution:** €534,515

**University Of Surrey**

**Address:**  
Stag Hill  
Guildford  
GU2 7XH  
United Kingdom

**EU Contribution:** €378,009

**Valeo Equipements Electriques Moteur Sas**

**Address:**  
2 Rue Andre Boulle  
94000 Creteil  
France

**EU Contribution:** €661,625

**Univerza V Ljubljani**

**Address:**  
KONGRESNI TRG 12  
1000 LJUBLJANA  
Slovenia

**Organisation Website:**

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

**EU Contribution:** €418,188

## **Renault Trucks**

**Address:**

99 route de Lyon  
69800 SAINT PRIEST  
France

**Organisation Website:**

<http://www.renaultvi.com>

**EU Contribution:** €575,781

## **Technologies:**

Computer-aided design and engineering  
EV component modelling tools

**Development phase:** Research/Invention

Transport

**STRIA Roadmaps:** electrification

**Transport mode:** Road transport

**Transport sectors:** Passenger transport, Freight transport

**Geo-spatial type:** Other