PROJECT

IMPROVE

Integration and Management of Performance and Road Efficiency of Electric Vehicle Electronics

Funding: European (7th RTD Framework Programme)

Duration: Jul 2013 - Dec 2016

Status: Complete

Total project cost: €4,915,055

EU contribution: €2,992,000

Call for proposal: FP7-2013-ICT-GC

CORDIS RCN : 109295

Background & policy context:

Electric Vehicles (EV) are subject of many R&D projects aimed at improving their components and overall physical (structural) architecture. In addition, several research projects exist that seek to innovate the overall control system that 'orchestrates' the way all these components perform together in passenger EV.

Objectives:

IMPROVE focuses on in-vehicle ICT innovations for commercial (fleet operated) vehicles, which are in some aspects different from private passenger vehicles: different use cases, different trade-offs between comfort, driving dynamics and cost efficiency, and more embedded in a fleet of several vehicles.

Within this focus, IMPROVE leverages a set of hardware and software innovations that in combination add a targeted 20% of range for the same battery capacity; increase the life of the battery, reduce the cost of key components and uses deeply integrated interconnections between subsystems inside the vehicle and between the vehicle (sub-)system and the outside world (cloud, grid, work, office). All these performance increases are achieved while maintaining safety and increasing comfort and wellbeing for the driver(s) of the vehicle.

IMPROVE integrates an induction e-motor (without permanent magnet) with an inverter to decrease cost; it integrates model embedded predictive controlling into advanced algorithms to optimize energy efficiency and -recovery. It leverages data extracted from cloud, grid and (back)office applications of the driver for in-vehicle control optimisation. All these elements are prototyped and assembled to a drivable test vehicle which will be submitted to extensive tests.

Methodology:

The IMPROVE consortium combines the strengths of very large, large, mid-sized and small companies with the academic / technological excellence of established academia and research centres, enabling it to optimally apply the project results in future vehicles and services with substantial impact on Europe's Green Car objectives.

Parent Programmes:

FP7-ICT - Information and Communication Technologies

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft M.b.h.

Address:
Inffeldgasse 21a / 1. Stock
8010 GRAZ
Austria

Organisation Website:
http://www.v2c2.at

EU Contribution: €417,140

Partner Organisations:

Frauenhofer Geselschaft Zur Foerderung Der Angewandten Forschung E.v.

Address:
Hansastrasse 27C
80686 MUNCHEN
Germany

Organisation Website:
http://www.fhg.de

EU Contribution: €306,365

Universita Degli Studi Di Firenze

Address:
Piazza San Marco 4
50121 Florence
Italy

Organisation Website:
http://www.unifi.it

EU Contribution: €159,360

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: €0

Lms Imagine

Address:
Place des Minimes 7
42300 Roanne
France

Organisation Website:
http://www.lmsintl.com

EU Contribution: €188,759

Idiada Automotive Technology Sa

Address:
L Albornar
43710 Santa Oliva
Spain

EU Contribution: €268,956

Sic! Software Gmbh

Address:
Ferdinand Braun Strasse 1
74074 Heilbronn
Germany

EU Contribution: €209,400

Brusa Elektronik Ag

Address:
Neudorf 14
9466 Sennwald
Switzerland

EU Contribution: €84,376

Ceske Vysoke Uceni Technicke V Praze

Address:
JUGOSLAVSKYCH PARTYZANU 1580/3
160 00 PRAHA
Czech Republic

Organisation Website:
http://www.cvut.cz

EU Contribution: €320,400

Temic Automotive Electric Motors Gmbh

Address:
SICKINGENSTRASSE 42-46
10553 BERLIN
Germany

Organisation Website:
http://www.continental-corporation.com

EU Contribution: €534,657

Tofas Turk Otomobil Fabrikasi Anonim Sirketi

Address:
Buyukdere Cad Tofas Han 145 Kat 4-5 Zincirlikuyu
34394 Sisli Istanbul
Turkey

EU Contribution: €502,587

Technologies:

Information systems
EL-V fleet monitoring tool to support a shared ELV service

Development phase: Research/Invention

STRIA Roadmaps: Transport electrification, Vehicle design and manufacturing

Transport mode: Road transport

Transport sectors: Passenger transport

Transport policies: Decarbonisation, Environmental/Emissions aspects, Digitalisation

Geo-spatial type: Other