

consortium

- AVL List GmbH
- Centro Ricerca Fiat SCpA
- FORD Otomotiv Sanayi Anonim sirketi
- Renault Trucks SAS
- AVL Software and Functions GmbH
- Robert Bosch GmbH
- SIEMENS INDUSTRY SOFTWARE NV
- SIEMENS Industry Software SAS
- Uniresearch BV
- Valeo Equipements Electriques Moteur
- Commissariat à l'Energie Atomique et aux Energies Alternatives
- LBF Fraunhofer
- FH Joanneum Gesellschaft M.B.H.
- National Institute of Chemistry
- University Ljubljana
- University Florence
- University of Surrey
- Das Virtuelle Fahrzeug Forschungsgesellschaft mbH
- Vrije Universiteit Brussel

facts and figures

Full name:	Optimization of scalaBle rEaltime modeLs and functiOnal testing for e-drive ConceptS
Acronym:	OBELICS
Start date:	1 October 2017
Duration:	36 months
Total budget:	€ 9,077,497.50 million
EC funding:	€ 9,077,497.50 million



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 769506.

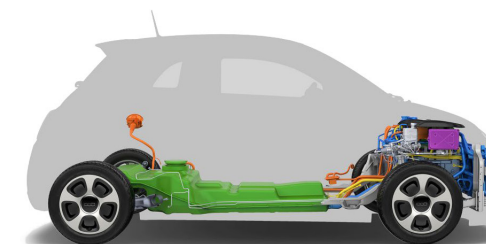
OBELICS is a 3-year Horizon 2020 project addressing the topic 'Multi-level modelling and testing of electric vehicles and their components.'

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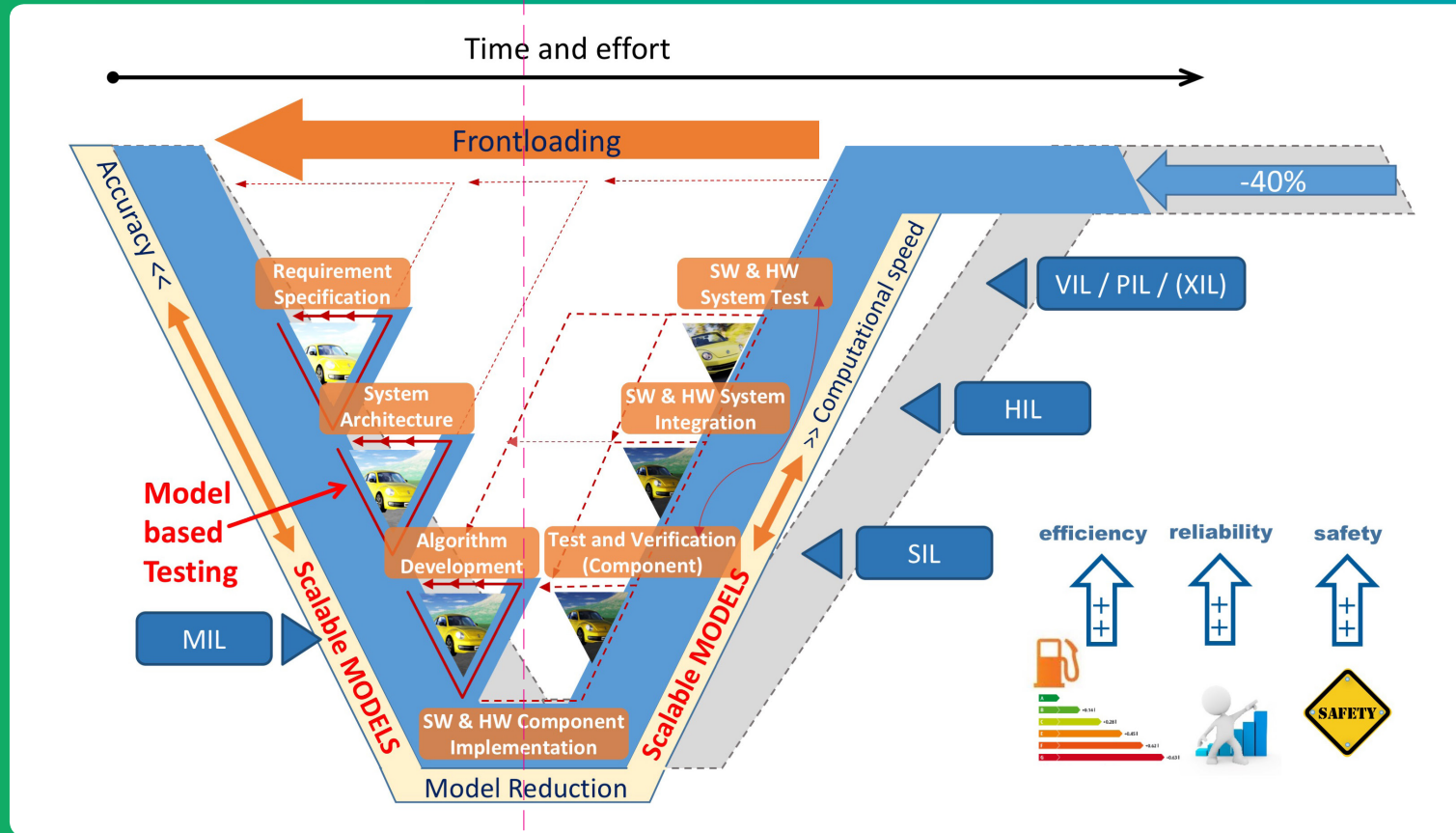


concept

Within OBELICS, testing efforts will be transferred from the right arm of the V to the left in order to reduce the overall development time and effort.

Since very detailed models with high accuracy are often slow in computational speed, it is important to reduce the model complexity for certain simulation or testing tasks in an easy and efficient way, where higher computational speed is required (e.g. real-time capability).

With a comprehensive 'Frontloading' approach based on iterative model-based design, development and testing - OBELICS enables engineers to readily understand design change impacts, validate and refine concepts at an early stage. Thus improving the performance, efficiency and safety, while reducing the time and efforts required for the EV development process.



key outputs and results

The overall objective of OBELICS is to develop a systematic and comprehensive framework for the design, development and testing of advanced e-powertrains and EVs line-ups.

Following results are expected from OBELICS:

- Development of novel methodologies for specifying and analyzing requirements with new models and testing methods;
- Development of realistic use cases (four engineering domains) and metrics for guiding development of new tools for testing and modelling of electric/hybrid vehicles and components with a particular focus on battery, electric machine and inverter components;
- A complete simulation environment: tools (commercial or internal) that satisfy the modelling requirements and standards to share models and perform co-simulation for multi-physic modelling/scalable real-time models for batteries, inverters and e-motors;
- Development of new sets of generic methods, models and simulation tools (Generic interoperable simulation framework) efficiently supporting comprehensive EV design processes combining innovative powertrain architectures with relevantly impacting auxiliaries;
- Advanced methodologies and strategies for assessing functional safety, reliability and safety;
- Analysis of second life battery market, performances/aging and applications.

OBELICS will further optimize existing testing procedures, and present adapted and enhanced heterogeneous testing procedures to the international standardization community.