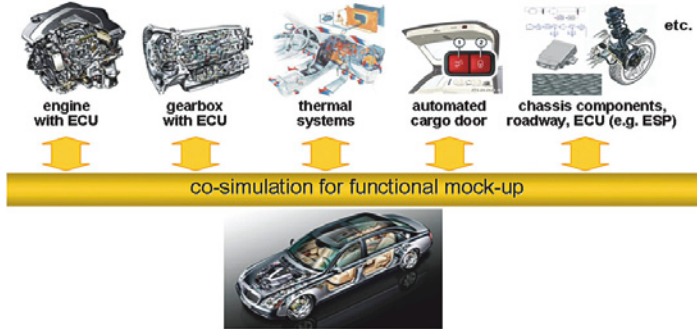


■ Motivation and Objectives

Functional Mock-Up, next generation Digital Mock-Up, are enabling simulation of vehicle functional behavior, encompassing dynamic behavior of embedded systems and software, significantly improving their design in vehicles. MODELISAR is providing the fully open Functional Mock-up Interface that covers not only models from different Modelica and non-Modelica simulation environments, but also AUTOSAR embedded software components.

MODELISAR's objective is to boost collaboration and innovation across system and software disciplines thanks to integrated System & Software simulation (Functional Mock-up), and to enable early vehicle behavior tests at a lesser cost in the virtual world.



■ Project Plan, Milestones and Deliverables

The project delivers a set of Functional Mockup Interface (FMI) specifications, and various proof of concept demonstrators on specific automotive scenarios: Cabriolet Top, Power Lift Gate, Engine Gearbox, Mechatronic Shifting, Electrical Power Drive, Chassis Controller, Combustion Ignition, Chassis Simulation, Interior HMI, Climate Comfort, Electronics, Energy Mgt, Card Board Network, Cabin Air Flow & Temperature.

The MODELISAR consortium is setting up the organization for the sustainable development of the FMI innovation, for the years to come.

■ Technical Approach

- Describe automotive use cases; describe code generation, HiL, calibration and test use cases.
- Provide them to drive the FMI specifications requirements.
- Perform technology studies based on state of the art in simulation topics.
- Use the above elements to elaborate the FMI specifications.
- Implement FMI prototypes, esp. for Modelica and AUTOSAR tools.
- Experience FMI effectiveness through use cases prototypes.
- Finally demonstrate the tool chain integration and engineering workflow on the Product Lifecycle Management (PLM) infrastructure.

■ Achievements

Functional Mockup Interface (FMI) open specifications on:

- Model Interface,
- Co-simulation Interface,
- PLM Interface.

Technical studies on Co-simulation, timing control, AUTOSAR modules.

Modelica evolutions proposal.

FMI compatible prototypes.

Automotive Proof of Concept demonstrators (Power Lift Gate, Mechatronic Shifting, Electrical Power Drive, Chassis Controller, Combustion Ignition ...) including modeling, code generation, test and PLM.

Budget	27 M€	Funding	9 M€
Duration	42 months	Start	July 2008
DG	INF50 ITEA 2 project	Contract n°	7006
Coordinator	Francois Bichet, Dassault Systèmes	Contact	francois.bichet@3ds.com bernd.relovsky@daimler.com
Partners	29 partners, among them Dassault Systèmes, Daimler, VW, Volvo, AVL, LMS/Imagine, Simpack, ITI, QTronic, DS AB, Geensoft, Atego, DLR, Uni Halle, AIT, Fraunhofer, IFP, Trialog, ATB, Altran, TWT, Verhaert, Triphase, Armines, David, Inspire		
Website	www.modelisar.com		