

PROJECT

ATESST2

Advancing Traffic Efficiency and Safety through Software Technology Phase 2

Funding: European (7th RTD Framework Programme)

Duration: Jul 2008 - Jun 2010

Status: Complete with results

Total project cost: €3,643,617

EU contribution: €2,226,976



Call for proposal: FP7-ICT-2007-2

[CORDIS RCN : 87278](#)

Background & policy context:

Advanced automotive functions are increasingly dependent on software and electronics. The complexity and criticality of automotive embedded systems already constitute an inhibiting factor for further evolution of functionality. This is evident for single automotive systems and even more so for functions that interact between vehicles and between vehicle and infrastructure and cooperative systems. New techniques and methodologies that support cost-efficient development, verification and validation (VandV), including efficient field-operational tests, are required to exploit the new opportunities.

Objectives:

ATESST2 contributed to bridging the gap between cooperative systems and enabling design and verification technologies. The basis of the project was the architecture description language EAST-ADL2, developed in the ATESST project. The language provided an information structure and ontology that made the development of stand-alone automotive embedded systems more systematic and predictable.

Methodology:

In ATESST2, the EAST-ADL2 modeling approach was further extended and new results were provided to support the development and VandV of cooperative active safety systems. The end results included:

- An architecture description language with improved means for capturing the requirements, characteristics and configurations of cooperative systems and the related analysis and VandV;
- Methodology and guidelines supporting language/tool adoption and cost-efficient development and VandV;
- Harmonisation of EAST-ADL2 with relevant standards including AUTOSAR and SysML.

The model-based development and VandV approach to be developed in ATESST2 contributed to improving Communication amongst system stakeholders, Documentation and VandV capabilities. This was a shift from today's document-driven testing and simulation procedures towards a model-based way of working. This provided the means for stakeholders to deal with the complexity and risk management of cooperative active safety systems.

Parent Programmes:

[FP7-ICT - Information and Communication Technologies](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Lead Organisation:

Volvo Bus Corporation

Address:

Fästningsvägen 1
40508 Gothenburg
Sweden

Organisation Website:

http://www.volvo.com/bus/global/en-gb/home_new.htm

EU Contribution: €517,119

Partner Organisations:**Vdo Automotive Ag****Address:**

Siemensstrasse
93055 Regensburg
Germany

EU Contribution: €0

Carmeq Gmbh**Address:**

Carnotstrasse 4
10587 Berlin
Germany

EU Contribution: €191,875

Mecel Ab**Address:**

Möndalsvägen
40020 Göteborg
Sweden

EU Contribution: €77,420

Kungliga Tekniska Hoegskolan**Address:**

Brinellvagen 8
100 44 Stockholm
Sweden

EU Contribution: €295,200

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

Strada Torino, 50
10043 ORBASSANO (TO)
Italy

Organisation Website:

<http://www.crf.it>

EU Contribution: €129,500

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: €302,250

Technische Universitat Berlin

Address:

STRASSE DES 17 JUNI 135
10623 Berlin
Germany

Organisation Website:

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

EU Contribution: €181,608

Mentor Graphics (Scandinavia) Ab

Address:

Kista Science Tower
16451 Kista
Sweden

EU Contribution: €64,276

University Of Greenwich

Address:

University of Greenwich, Avery Hill Mansion Site, Bexley Road
LONDON
HU6 7RX
United Kingdom

Organisation Website:

<http://www.gre.ac.uk/>

EU Contribution: €227,400

Continental Ag

Address:

Vahrenwalder Strasse 9
169 HANNOVER
Germany

Organisation Website:

<http://www.conti-online.de>

EU Contribution: €240,328

Mentor Graphics Magyarorszag Szamitastechnikai Tanacsado Es Kereskedelmi Korlatolt Felelossegu Tarsasag

Address:

Montevideo Utca 2C
Budapest
1037
Hungary

EU Contribution: €0

Technologies:

Connected and automated vehicles
Modelling and design of cooperative car systems

Development phase: Research/Invention

Key Results:

To meet the ATESS2 objectives, modelling techniques were developed to facilitate an improved design process for cooperative active safety systems. These modelling techniques were concretised in terms of a modelling language, tools and methodological support.

ATESST2 extended EAST-ADL with new concepts for supporting the modelling of cooperative active safety systems. An open source prototype tool Papyrus, developed in the ATESS2 project, continued to provide the support platform for EAST-ADL. The prototype tool was based on the open source Eclipse framework. Within this environment, specialised plug-ins were developed in the ATESS2 project implementing the extensions to the EAST-ADL profile and delivered new functionalities.

Main achievements of the project were:

- Reengineering of EAST-ADL to conform to AUTOSAR meta-model;
- Reengineering of EAST-ADL to allow modular application of language concepts;
- Revised support for the modeling of safety, timing, variability, requirements and cooperative systems;
- Proposal of Methodology explaining how the EAST-ADL can be deployed;
- Definition of Reengineering of EAST-ADL to conform to AUTOSAR metamodel;
- Reengineering of EAST-ADL to allow modular application of language concepts;
- Proposal of Methodology explaining how the EAST-ADL can be deployed;
- Definition of the Unified Modeling Language 2 (UML2) tool profile for EAST-ADL which was linked to the Object Management Group Modeling and Analysis of Real Time and Embedded systems (OMG MARTE) standard;
- Interaction with several related projects using or about to use EAST-ADL.

Strategy targets

- An efficient and integrated mobility system: Acting on transport safety: saving thousands of lives
- An efficient and integrated mobility system: Secure transport

Documents:

 [D1.3 Final report on project results \(Other project deliverable\)](#)

STRIA Roadmaps: Cooperative, connected and automated transport

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Societal/Economic issues

Geo-spatial type: Other