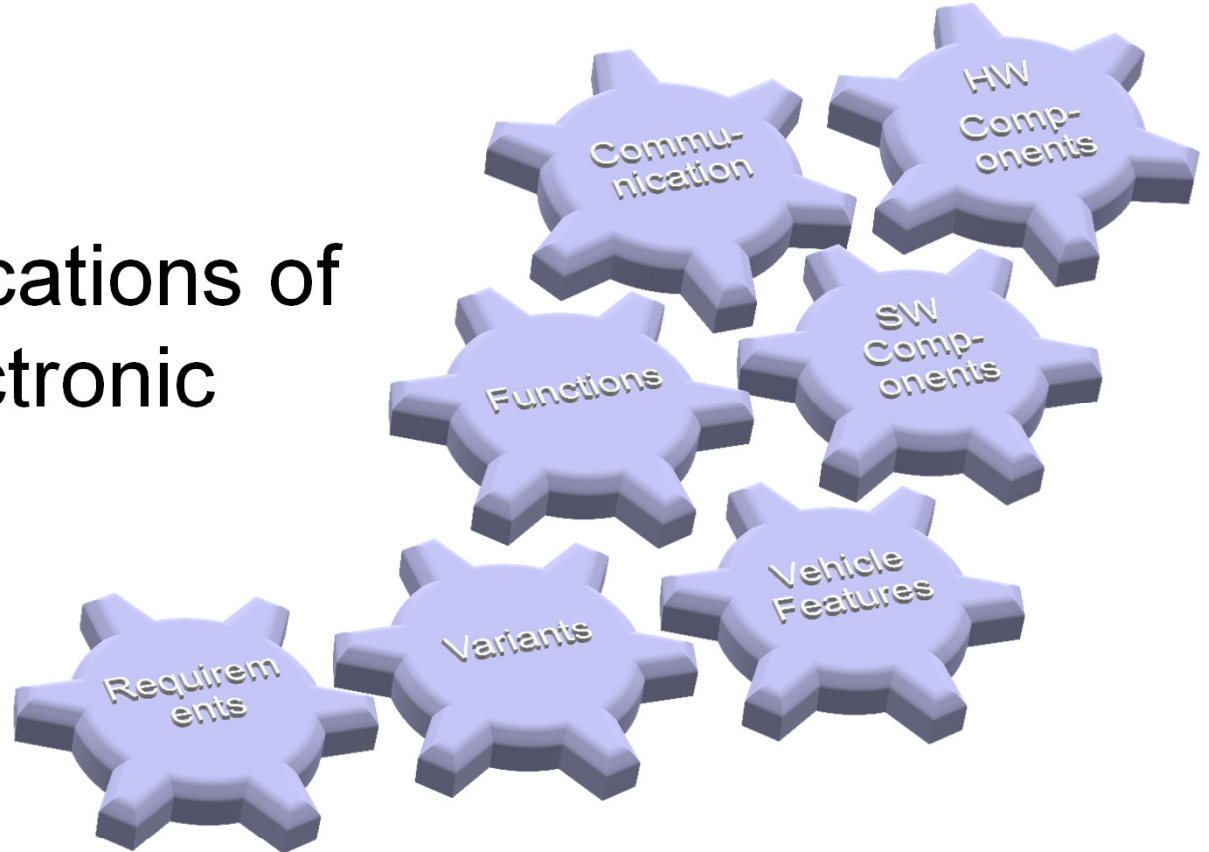


Model-based Analysis & Engineering of Novel Architectures for Dependable Electric Vehicles

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Background

Capture Specifications of Automotive Electronic Systems



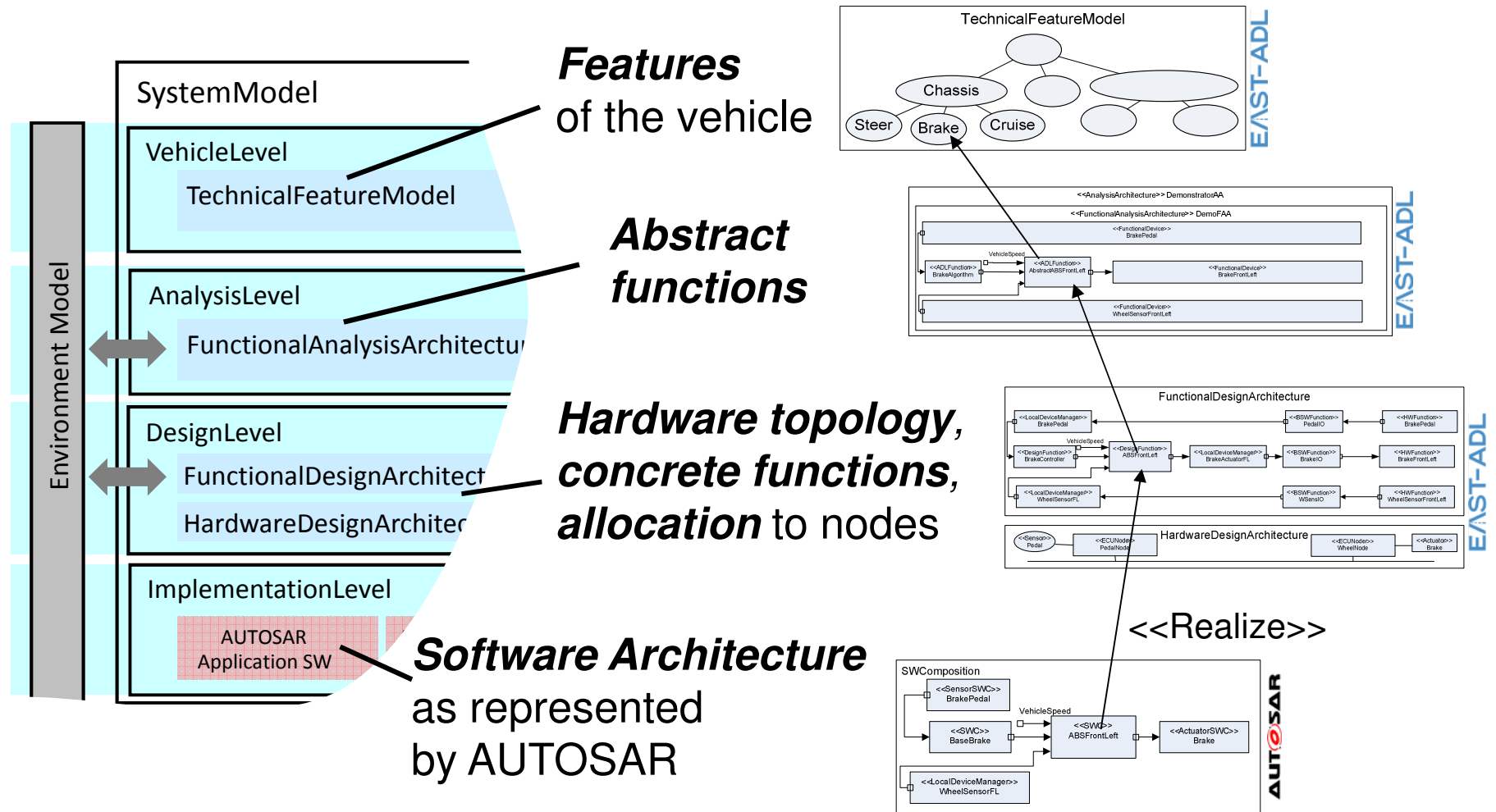
Architecture Description Language

An information model that captures engineering information in a standardized way

System Specifications - State of Practice

- Formats and specification styles are informal
- Formats and specification styles are textual
- Formats and specification styles are company specific
- Formats and specification styles vary over time
- Different tools and approaches depending on Domain

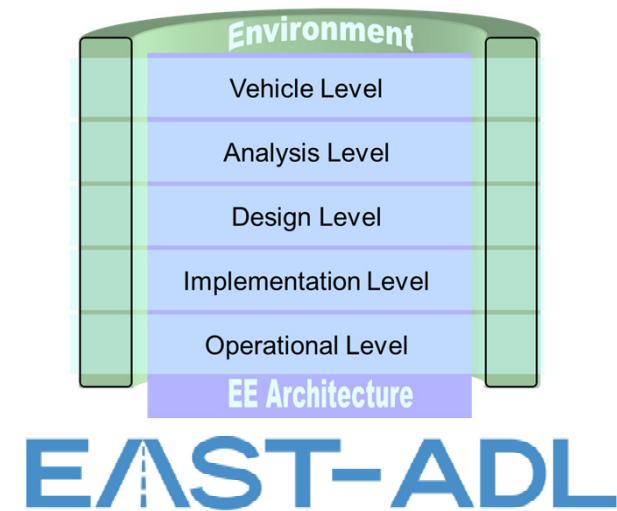
EAST-ADL+AUTOSAR Representation



EAST-ADL Elements

- EAST-ADL Metamodel
- UML2 Profile
- XSD Schema
- EAST-ADL Methodology
- EAST-ADL Tooling
 - EATOP Eclipse Platform
 - Papyrus UML
 - Vendor Tools

(MentorGraphics VSA, Arcticus Rubus, MetaCase ME+, Systemite SystemWeaver, ...)



EAST-ADL vs AUTOSAR

EAST-ADL

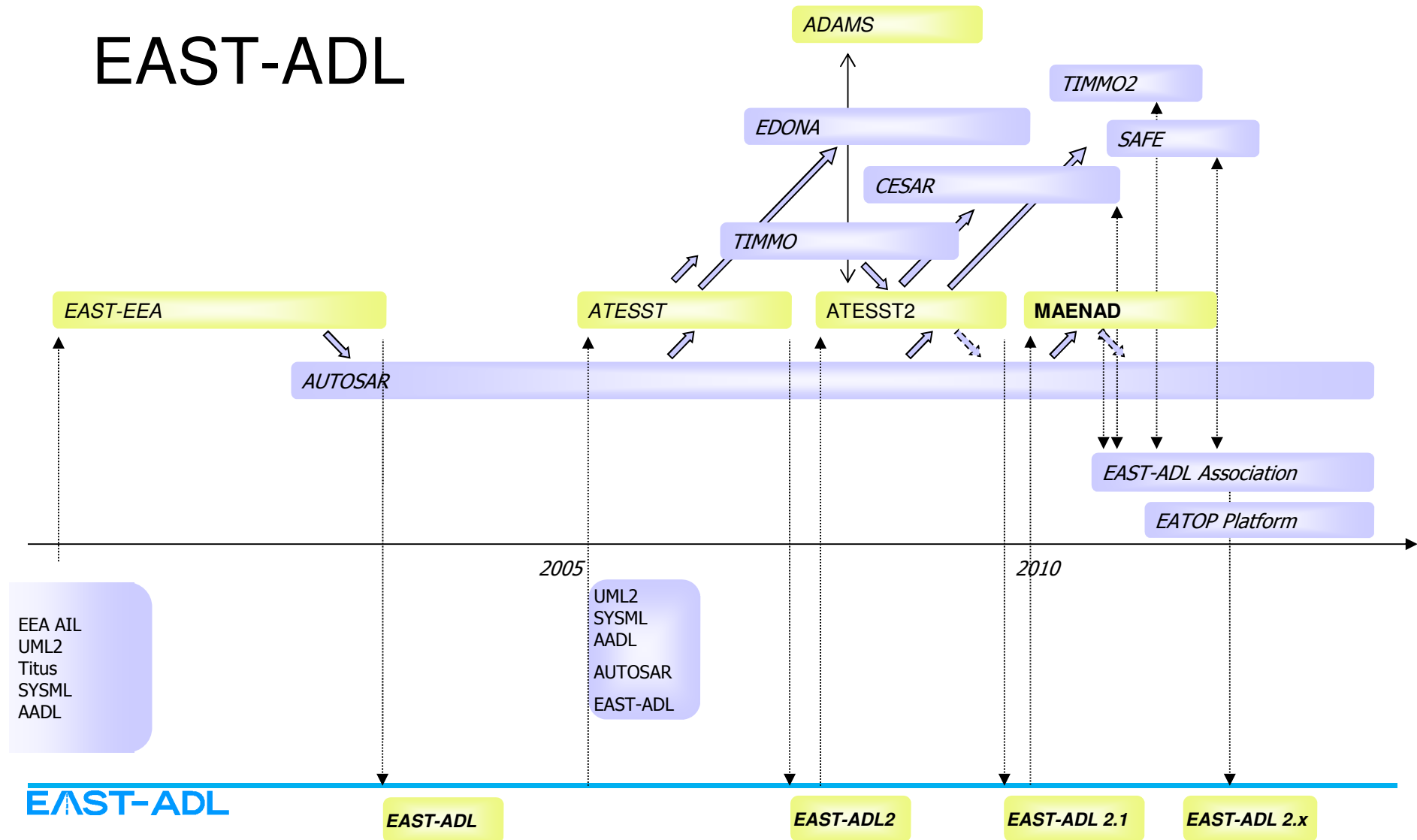
For Features, Functional Architecture and
Topology

AUTOSAR

For Software Architecture and Execution Platform



EAST-ADL



MAENAD Project: maenad.eu

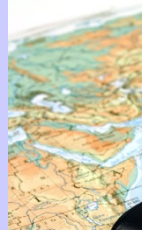
Model-based Analysis & Engineering of Novel Architectures for Dependable Electric Vehicles

Purpose: Refine EAST-ADL Language, tools and methodology to support Electrical Vehicle development

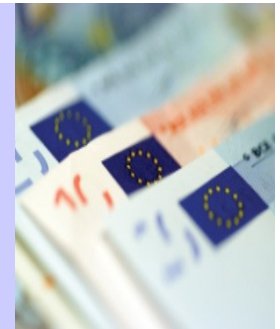


OEMs: Volvo Technology, Centro Recherche FIAT
Suppliers: Continental, Delphi/Mecel, 4S Group
Tools: MetaCase, Pulse-AR, Systemite
Research: CEA LIST, KTH, TU Berlin, U Hull

SE, IT
DE, SE, IT
FI, SE, FR
FR, SE, DE, UK



Kind: FP7 STREP
Budget: 4 MEUR
Duration: 2011-2013
Coordinator: Henrik Lönn, Volvo Technology



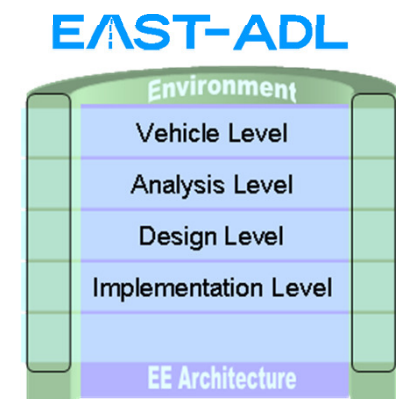
Motivation

- Electrical Vehicle development and ISO 26262 require adequate engineering support
- Collaborative character of automotive industry makes standards necessary also for specifications

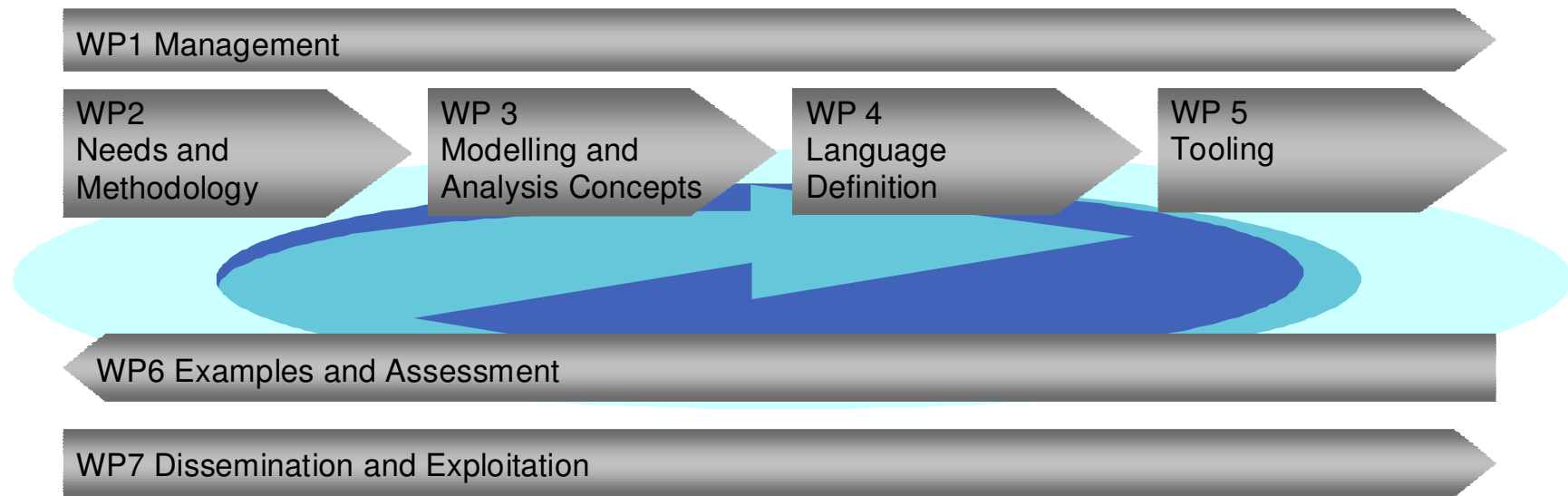
Objectives

Refine EAST-ADL Language, Tools and Methodology to

- Assist the safety process defined in the ISO 26262 safety standard
- Provide effective prediction of quality attributes (dependability and performance)
- Provide tool support for the automated exploration of design spaces (dependability, performance and cost optimization).



Milestones



Sept 2010							Sept 2013
MS1	MS2	MS3	MS4	MS5	MS6	MS7	MS8
Project Start	Baseline	Case Study	Language	Methodology	Analysis and Optimization	Finalization	Project End

EAST-ADL Association

- Non-profit, non-governmental organization
- Assist and promote the development and application of the EAST-ADL.
- The EAST-ADL Association will stipulate the content of new versions of the EAST-ADL language.
- The EAST-ADL Association has no fees or funds, and each member carry any costs for contributing.
- Membership is open to individuals and organizations
- 50 members: OEMs, Suppliers, Tool Vendors, Institutes, Academia



EAST-ADL

Finally...

- A Specification is a core asset – Shall not be tool specific
- EAST-ADL is an open, AUTOSAR-compliant representation for specifying embedded systems
 - Shared ontology/terminology across companies and domains
 - EAXML exchange format to secure tool interoperability
 - Allows joint efforts on methodology, modelling and tools
- Supports several aspects (timing, variability, behavior, V&V, etc. through extensions)
- EATOP open tool platform for EAST-ADL tool development
- EAST-ADL Association directs EAST-ADL evolution

THANK YOU FOR YOUR ATTENTION!

*Joint Workshop on Representation-Methodology-Tools
Berlin Sept 24-25 See www.maenad.eu*

AMALTHEA°MAENAD°TIMMO-2-USE°SAFE

sig-adl mailing list - subscribe at
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EAST-ADL
WWW.EAST-ADL.INFO