

ASAM

Standards for the Automotive Industry

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ASAM e.V.

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Dresden



Association for Standardization of
Automation and Measuring Systems

ASAM - Introduction

Compliance Statement

For almost 20 years, ASAM e.V. (Association for Standardization of Automation and Measuring Systems) is actively promoting [standardization within the Automotive Industry](#). Together with its more than 280 members worldwide, the association develops standards that define [interfaces and data models for tools used for the development and testing of electronic control units \(ECUs\)](#) and for the [validation of the whole vehicle](#).

ASAM standards are [recommendations](#), they do not have an impact on regulatory framework.

From the beginning, ASAM has requested and encouraged an open exchange among all [stakeholders: manufacturers, suppliers, tool vendors and research institutes](#). Following this ASAM policy, technical experts from ASAM member companies worldwide commonly [develop new standards in project groups](#). The developed standards are [accessible for all interested companies](#) and serve as basis for the development of tools and ECUs within the respective companies worldwide. Tools and products developed based on ASAM standards allow [easy integration](#) into existing value chains and [seamless data exchange](#).

ASAM project groups [do not define products or take any business decisions](#) preventing competition.

Prof. Dr. Marcus Rieker
Chairman of the Board of Directors

Dr. Klaus Estenfeld
Managing Director

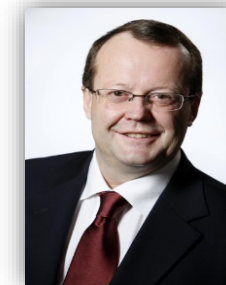
<https://www.asam.net/home/about-asam/compliance.html>

Organizational Development

Board of Directors

Voluntary Representatives from International Tier-1s, Tool Vendors and Research Institutes

- Prof. Dr. Frank Köster
DLR
- Dr. Ralf Nörenberg
HighQSoft GmbH
- Prof. Dr. Marcus Rieker, Chairman
HORIBA Europe GmbH
- Armin Rupalla
RA Consulting GmbH
- Richard Vreeland
Cummins Inc.



Technical Steering Committee (TSC)

A Highly Experienced International Team of Experts from Automotive Industry

- **AVL LIST GmbH**

Dr. Gerald Sammer



- **BMW AG**

Michael Schwarzbach



- **Continental AG**

Helmut Wellenhofer



- **dSPACE GmbH**

Dr. Hans-Joachim Rabe



- **emotive GmbH**

Dr. Jörg Supke



- **ETAS GmbH**

Killian Schnellbacher



- **National Instruments Corp.**

Stefan Romainczyk (Speaker)



- **Softing GmbH**

Markus Steffelbauer



- **Siemens Industry Software GmbH**

Oliver Philipp



- **Vector Informatik GmbH**

Dr. Christoph Dallmayr



Some Highlights (Last Twelve Months)

ASAM actively drives its evolution – inside and outside

- **Services for ASAM members worldwide** (members in 26 countries)
New ASAM Website well received, International Conference 2019, ...
- **New Standards Related Activities**
New domain “Simulation” established, high interest worldwide, six ASAM OpenX projects identified, next standards in ideation
First successful local Concept Project outside Europe finished, first standard development outside Europe, ...
- **Next Steps towards Internationalization**
Local entry in China (C-ASAM), Re-vitalization of North American Activities, Requests from Korea,
First ASAM members in Canada, Croatia, Israel, Slovenia, Romania,
- **A Recognized Partner in the Standardization Community**
Liaison Agreements with ISO, MoU with SAE, AUTOSAR Attendee Agreement, ...
- ASAM Standards used in **Non-Automotive Industries** (e.g. ASAM XIL in aviation)



ASAM Membership

More Than 280 Member Organizations Develop and Apply ASAM Standards

OEMs



Tier-1 Suppliers



Tool Vendors / Service Providers



Universities / Research Institutes



Status Nov. 18, 2019

Standardization Activities

ASAM Standards Portfolio

A New Domain since 2018

Data Management & Analysis

CEA ODS

Measurement & Calibration

CDF CPX MCD-1 CCP / XCP
MCD-1 POD MCD-2 MC MDF
MCD-2 CERP

Test Automation

ACI ASAP 3 ATX GDI
MCD-3 D MCD-3 MC XIL

Diagnostics

MCD-2 D MCD-3 D
OTX Extensions

Software Development

CC FSX ISSUE LXF
MBFS MDX

ECU Networks

MCD-2 NET



Simulation

OpenX standards

Standards Development

Process

- ASAM members can propose a new standardization activity at any time.
- Standards are developed and maintained via projects.
- Experts from member organizations participate in standard development projects.
- Projects have a defined start and end.
- Project groups (working groups) are given a lot of freedom to organize their own work.
- Errors are corrected via a continuous issue resolution process.

Project Support

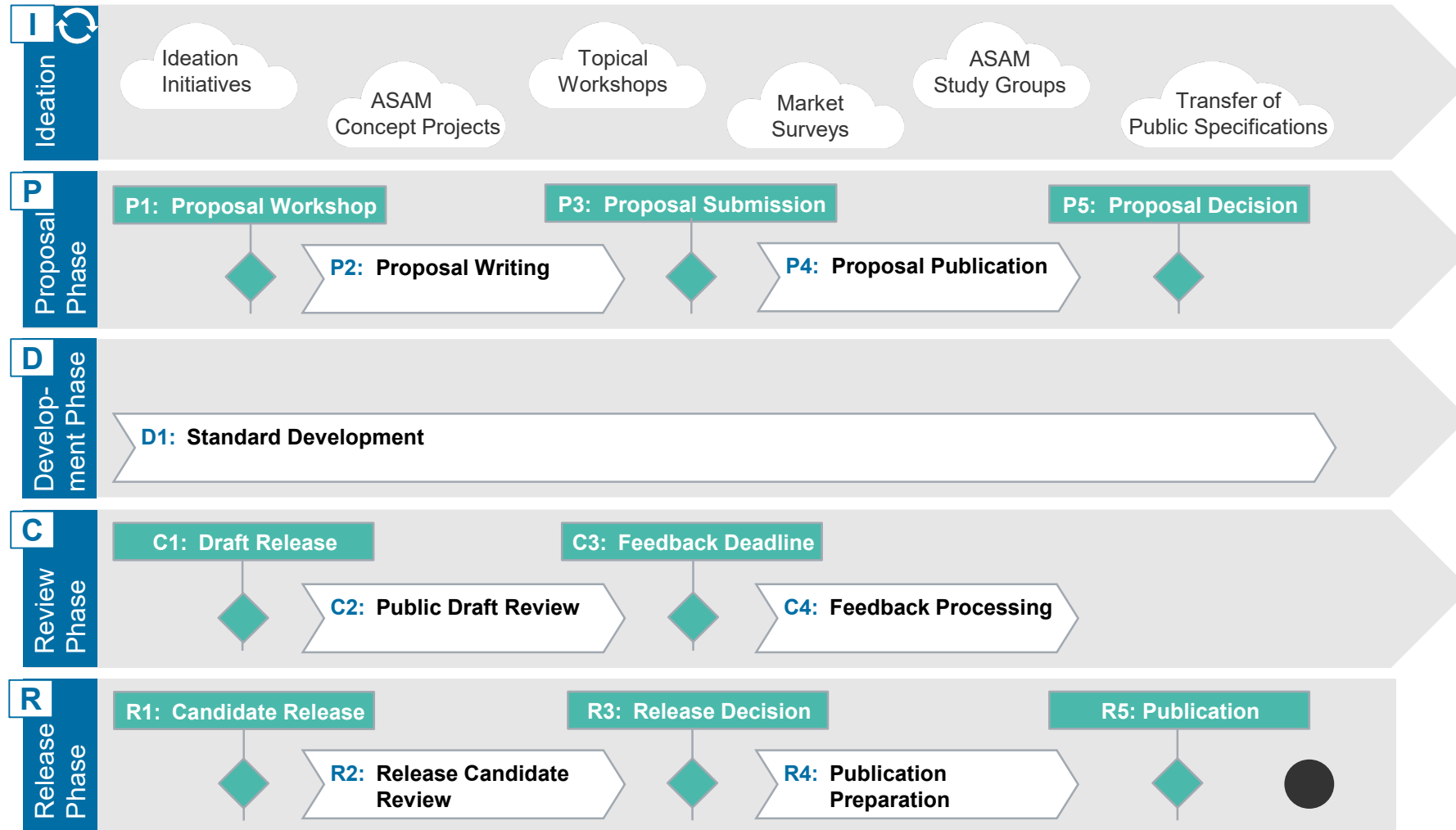
- Projects may have a budget, funded by ASAM.
- Projects may be supported by a service provider.
- Administrative and infrastructure support through the ASAM office.

Project Types

- | | |
|-----------------------------------------|--------------------------|
| • Standard Development Projects: | • Other Projects: |
| • New Standard Development | • Concept Project |
| • Major Version Development | • Implementation Project |
| • Minor Version Development | • Study Project |
| • Revision Version Development | |

ASAM Development Process for Standards

From First Ideas to New Standards



ASAM Offers a Complete Environment for Standardization

Professionalism & Culture

- **Proven processes** for standards development and long-term maintenance.
- **Time-to-Market:** Low process overhead, fast project turn-around times.
- **Legitimacy:** Decisions are made by elected industry representatives.
- **Neutrality:** The ASAM Office guarantees unbiased support for every company (big or small).
- **Non-Profit Paradigm:** Our goal is to provide best-in-class technologies in automotive electronic engineering.

Project Budget

- Membership fees are invested in technical projects (ROI can be higher than 100%, if a member uses ASAM a lot).
- ASAM pays for project service providers, e.g. standard writing, code development, prototyping, benchmarking, etc.
- Relieve experts from routine work. Let them focus on requirements, concept development and reviews.

Tools

- IT Infrastructure: Bugzilla, SVN, Adobe Shared Review, Microsoft Teams.
- Communication Infrastructure: WebEx, Video conferencing (as required, e.g. for inter-continental projects).

Network

- Large, worldwide network of experts in the automotive electronic engineering, throughout all tiers.
- Collaboration with ISO, SAE, AUTOSAR, other SDOs^{*)} and government agencies.

^{*)} Standard Development Organizations

Worldwide Marketing & Distribution

ASAM Home Page

- Specifically geared towards standard promotion and distribution.
- Technical Wiki for standards.
- Download of standards for members. Sales for non-members.
- Project and events information.

Regional Membership Activities

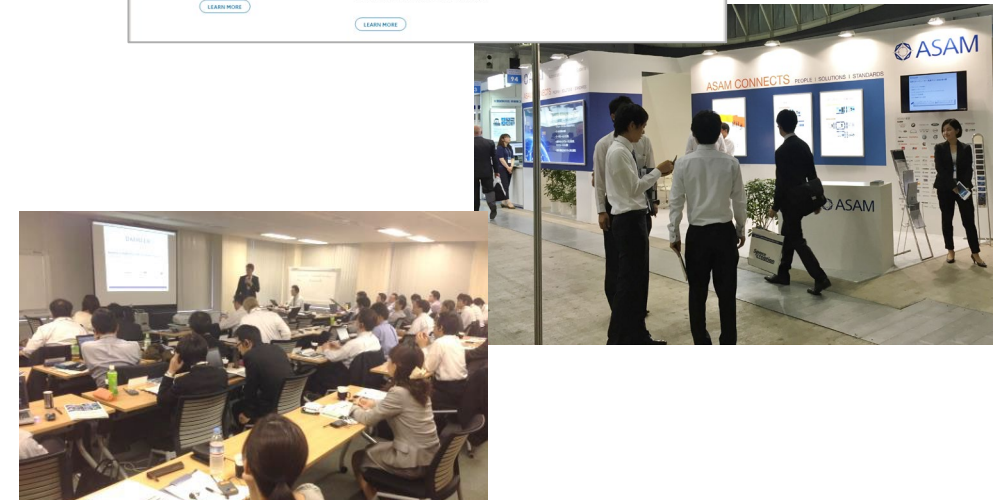
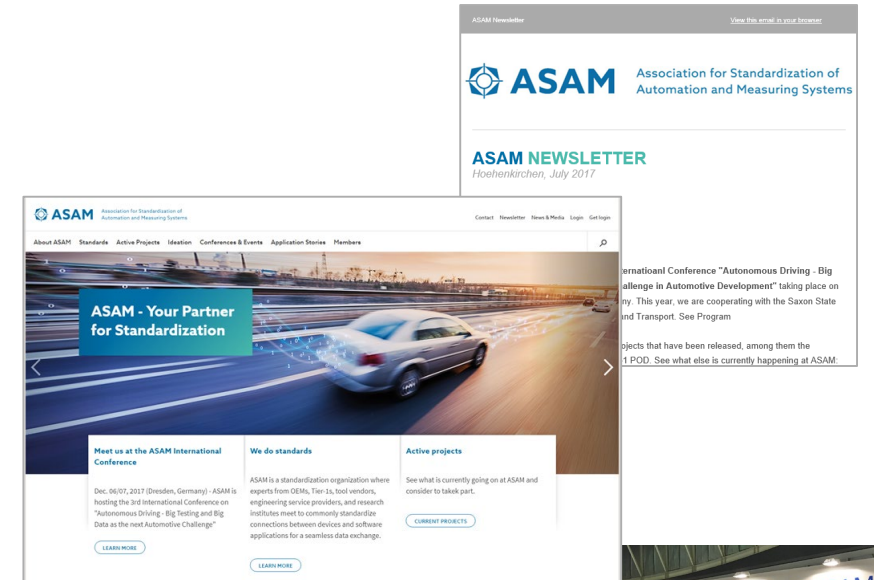
- Regular meetings in EU, USA and JP.

Public Relations

- ASAM Newsletter.
- Presentations at international conferences
- Trade show participation in emerging markets (JSAE, ...).

Training & Support

- Technical support for all standards (support@asam.net).
- Overview training on ASAM standard portfolio.
- Update training on new releases (upon request).



A New ASAM Domain for Highly Automated Driving

ASAM OpenX Standards for Driving and Traffic Simulation

Transfer of OpenDRIVE® to ASAM

Since September 2018, a Lot of Activities Started at ASAM



Open
Dynamic
Road
Information for
Vehicle
Environment

New Domain at ASAM: Simulation



Simulation

- Standards for [simulation model data exchange](#).
- High demand for standards for new type of simulation: [Driving and Traffic Simulation](#).
- Public specs driven by tool vendors have emerged in recent years.
- **Specs have been transferred to ASAM to:**
 - **Become official standards for the industry**
 - **Be hosted by a neutral professional organization**
 - **Guarantee long-term and professional further development**
- Current projects have been transferred to ASAM:
 - [OpenDRIVE](#)
 - [OpenCRG](#)
 - [OpenSCENARIO](#)
 - [Open Simulation Interface \(OSI\)](#)
- Next standards in ideation ...

Positioning of ASAM OpenX Standards

ASAM OpenDRIVE

- Road Network



ASAM OpenCRG

- Road Surface



ASAM OpenSCENARIO

- Driving Maneuvers



Static Content

Dynamic Content

- **Motivation**

- Exchange of data between creation tools (e.g. road network editors) and simulators.
- Use of the data in simulators from different vendors.
- Use with other public standards.

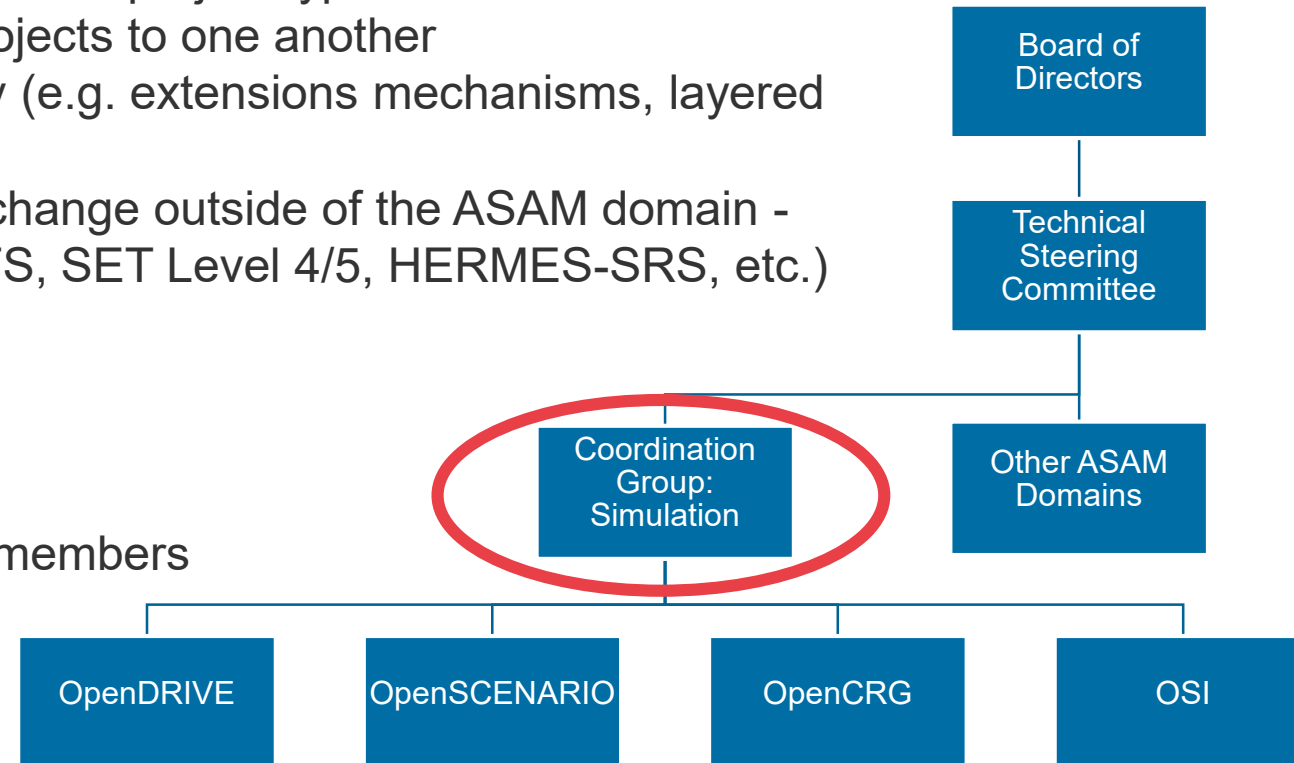
Coordination Group: Simulation

Organization and Purpose

- Consists of domain experts, project leads & external consultants
- Clarification of project requirements
- Identify and assist in implementation of new projects & project types
- Ensures alignment of individual ASAM OpenX projects to one another
- Homogenize approaches to standard extensibility (e.g. extensions mechanisms, layered standard approaches)
- Provides an interface for synchronization and exchange outside of the ASAM domain - collaborations with other projects, e.g. ISO, IAMTS, SET Level 4/5, HERMES-SRS, etc.)

Current Status

- Successful initial Kick-off: Aug. 09
- Presentation of TSC approved proposal to initial members
 - Discussion of group role & participants
- First operational meeting on Sept. 18



Thank you!

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For more information
on ASAM visit

www.asam.net