

## Project Proposal Summary Sheet

<b>Project Number</b>	P_2024_02
<b>Project name</b>	ASAM_OpenSCENARIO_XML_Checker_Rules_Definition_M
<b>Domain</b>	Simulation
<b>Impacted standard(s)</b>	OpenSCENARIO XML
<b>Project type</b>	StandardDevelopment
<b>Start date</b>	15.03.2024
<b>End date</b>	31.10.2024
<b>TSC Submission:</b>	15.02.2024
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<b>Initiating Companies</b>	Volvo Cars, DLR (Deutsches Zentrum für Luft- und Raumfahrt e. V.), <i>Porsche Engineering</i> , <i>CARIAD</i> , <i>Triangraphics</i>
<b>ASAM funds</b>	0 Eur
<b>Backwards Compatibility</b>	<i>If applicable, indicate to which prior version this release is backward compatible.</i> 1.3.0

For more information on the ASAM project process and the proposal phase in particular, please refer to the [ASAM Project Guide](#).

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# 1 Executive Summary

ASAM is continually working on improving the quality of its standards, such as removing ambiguity and adding examples, as well as usage guidelines.

This is a proposal to further develop the ASAM OpenSCENARIO XML 1.3.0 Standard. ASAM OpenSCENARIO XML 1.3.0 defines a file format for the description of the dynamic content of driving and traffic simulators. The primary use-case of ASAM OpenSCENARIO XML is to describe complex, synchronized maneuvers that involve multiple entities like vehicles, pedestrians and other traffic participants.

The data for maneuver descriptions in ASAM OpenSCENARIO XML is organized in a hierarchical structure and serialized in an XML file format. The schema is provided with the standard. The XML file can be easily validated, edited, imported and exported by simulation tools and content editors. The format is technology and vendor independent.

The standard is used together with road network descriptions from ASAM OpenDRIVE and can use road surface profiles from ASAM OpenCRG. The three standards complement each other and cover the static and dynamic content of in-the-loop vehicle simulation applications.

This release shall be a maintenance project of the current standard ASAM OpenSCENARIO XML 1.3.0 and intended to define the necessary rules to avoid ambiguities in the standard and interoperability issues created due to differing levels of compliance across tools.

This standard maintenance project will work closely with the already active ASAM Quality Checker project. ASAM Quality Checker Framework will allow users to verify the conformity of files and implementations against the ASAM standards, fostering greater adoption and understanding of the standards as well as significantly improving interoperability. The framework shall be standard agnostic, allowing the execution of a wide variety of both ASAM and user-defined checks for different standards.

The participants in this project shall only focus on the rule definition towards the ASAM OpenSCENARIO XML standard, as well as their finalization and approval. The outcome of this project shall be a suite of rules to check the aforementioned standard, which are considerate normative deliverables.

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## 2 Overview / Goals

### 2.1 Motivation

The widespread adoption of industry standards has highlighted the need for a consistent and homogeneous implementation. However, discrepancies in standardized data formats due to ambiguities, non-compliance, interactions with other standards, platform, or language differences, as well as human error can hinder interoperability and compatibility. These issues can be addressed through rigorous standards development, clear documentation, comprehensive testing, and ongoing support for implementers.

This project will establish a comprehensive suite of rules in the form of normative deliverables for this and future ASAM releases.

### 2.2 Relations to Other Standards, Projects, or Organizations

#### Standard and Standardization activities

The project participants in this standard maintenance group shall only focus on the previous ASAM OpenSCENARIO XML versions focusing on versions from 1.0.0 to 1.3.0 (It might be necessary to distinguish between syntactic (older versions like 1.0.0, 1.1.0, 1.1.1) and semantic validation (1.2.0)).

There is going to be a collaboration work between OpenSCENARIO XML and OpenDRIVE, where some common rules might be defined.

#### 2.2.1 Backward Compatibility to earlier releases

*If applicable, indicate to which prior version this release is backward compatible. Standards for minor and maintenance releases shall be backward-compatible!*

OpenSCENARIO XML 1.3.0

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## Technical Content

The standard maintenance project must define, document and approve the necessary normative rules to check the conformity of the ASAM OpenSCENARIO XML Standard.

These rules shall enable syntactic and semantic validation of elements/objects against the respective schemata of the standards that directly reduce ambiguity in the standards.

Parallel to the definition of the rules, the ASAM Quality Checker project group will implement the defined rules in the form of a suite of checks.

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## Deliverables

At the end of the project, the project group will hand over the following deliverables to ASAM:

**Table 1 Deliverables**

Item No.	Description
1	<b>Definition and documentation of a normative suite OpenSCENARIO XML rules according to the priority</b>
2	Specification
3	XML schema file
4	UML model
5	UML Model reference documentation (HTML)
6	Examples
7	Migration scripts and schemas
8	

### 2.3 Review Process

The process for deliverable review documented in the project guide is applicable to all projects (see [here](#)).

The ASAM OR will provide further details on quality criteria and tools used prior to the initiation of a review in a project.

**Table 2 Selection of Review Type**

<i>Please indicate whether the project is aiming to perform an ASAM member review or a full public review. This is not required for maintenance projects.</i>	Wählen Sie ein Element aus.
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## 3 References

*Provide a list of documents and their authors that are referenced in earlier chapters. Use the sequential number in squared brackets for referencing them in earlier chapters.*

See guidance on References in the [ASAM Editorial Guide](#)

[1] <Author 1 Last Name>, <Author 1 First Name>; <Author 2 Last Name>, <Author 2 First Name>; <...more Authors...>: <Title>; <Publishing House>; <Year>; ISBN: <ISBN-13 Number>

[2]