

## Project Proposal Summary Sheet

<b>Project Number</b>	P_2024_01
<b>Project name</b>	ASAM_OpenDRIVE_Checker_Rules_Definition_M
<b>Domain</b>	Simulation
<b>Impacted standard(s)</b>	OpenDRIVE
<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
<b>Proposer(s)</b>	Jonas Conrad (Porsche Engineering) Mirco Nierenz (Triangraphics)
<b>ASAM Office Responsible (OR)</b>	Diego Sánchez Lázaro
<b>Initiating Companies</b>	<i>Porsche Engineering, CARIAD, 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> 1.8.0

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, dedicating efforts to remove ambiguity and adding examples as well as usage guidelines.

ASAM OpenDRIVE consists of a specification, a style guide and a schema for the logical description of road networks. It is intended for vehicle dynamics simulation, traffic simulation and sensor simulation.

ASAM OpenDRIVE is used in virtual development, testing and validation of driving assistance systems, as well as of automated and autonomous driving modes. Within these use cases, ASAM OpenDRIVE files describe road networks with respect to all data belonging to the road and its environment. However, they do not describe those entities acting on or interacting with the road.

This is a proposal to further develop the ASAM OpenDRIVE Standard. Its aim is to be a maintenance project of the current standard version 1.8.0, by defining the necessary rules to avoid ambiguities in the standard and to specifically address interoperability issues raising from differing levels of compliance across tools.

Currently, ASAM is working on the Quality Checker Framework, an active project that will allow users to verify the conformity of files and implementations against the ASAM standards. This will foster greater adoption and understanding of the standards as well as significantly improving their interoperability. The framework shall be standard agnostic, allowing the execution of a wide variety of both ASAM and user-defined checks for different standards. This standard maintenance project will integrate with the ASAM Quality Checker project, contributing on the ASAM OpenDRIVE front.

The participants in this project shall only focus on the rule definition towards the ASAM OpenDRIVE standard, as well as their finalization, approval and check the implementation. 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 OpenDRIVE versions focusing on versions '1.6', '1.7' and '1.8'. Versions '1.4' and '1.5' will be deferred from the rules specified in '1.6'.

#### 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!*

OpenDRIVE 1.8.0

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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 OpenDRIVE Standard.

These rules shall enable syntactic 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 OpenDRIVE rules according to the priority</b>
2	<a href="#">ASAM OpenDRIVE BS 1.8.0 Specification, 2023-11-22</a> (this document, contained in this site)
3	<a href="#">ASAM OpenDRIVE 1.8.0 Junction guideline 1.0.0, 2023-11-22</a> (contained in this site)
4	<a href="#">ASAM OpenDRIVE 1.8.0 Signal reference 1.0.0, 2023-11-22</a> (contained in this site)
5	<a href="#">ASAM OpenDRIVE 1.8.0 Enterprise Architect UML model</a> (contained in the deliverables menu of this site)
6	<a href="#">ASAM OpenDRIVE 1.8.0 Enterprise Architect UML model reference</a> (hosted on opendrive.asam.net)
7	<a href="#">ASAM OpenDRIVE 1.8.0 XSD schema files</a> (contained in the deliverables menu of this site)
8	<a href="#">ASAM OpenDRIVE 1.8.0 Examples and uses cases</a> (contained in the deliverables menu of this site)
9	<a href="#">ASAM OpenDRIVE 1.8.0 Implementation examples</a> (contained in the deliverables menu of this site)
10	<a href="#">ASAM OpenDRIVE 1.8.0 Release Presentation</a> (contained in the deliverables menu of this site)

### 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**

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*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.*

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]