

# ASAM Simulation Domain – Status Update

## ASAM Technical Seminar

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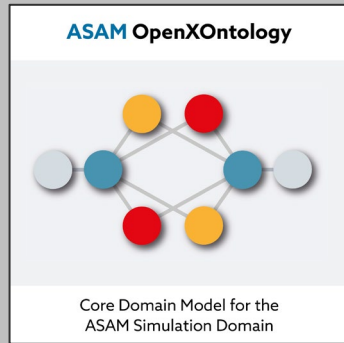
Stefan Cyliax  
ASAM e.V.

2. Mai 2022

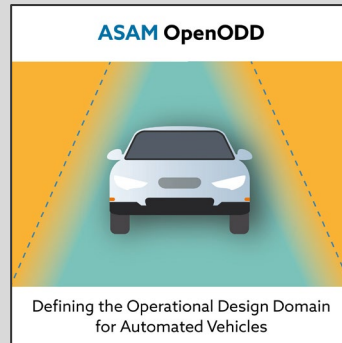


# Vision of ASAM OpenX...

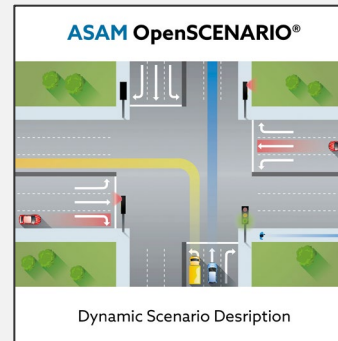
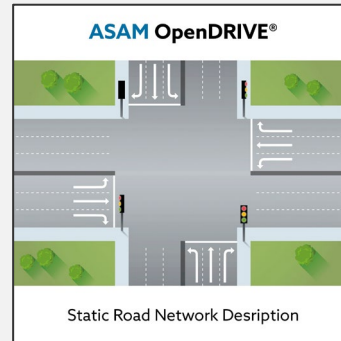
## Domain Ontology



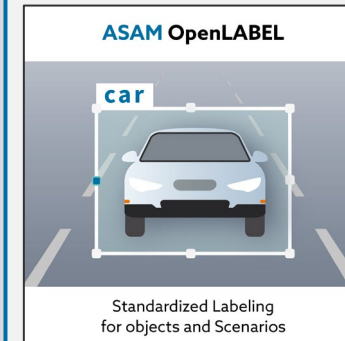
## Operational Design Domain



## Static and dynamic content of a scenario



## Annotation



## Interface



# OpenDRIVE

- File format for the **description of road networks**.

- **V1.6.1** released March 2021

- Integration of OpenCRG
- Bug fixes & clarifications

- New project started in May 2021 [[Proposal](#)]

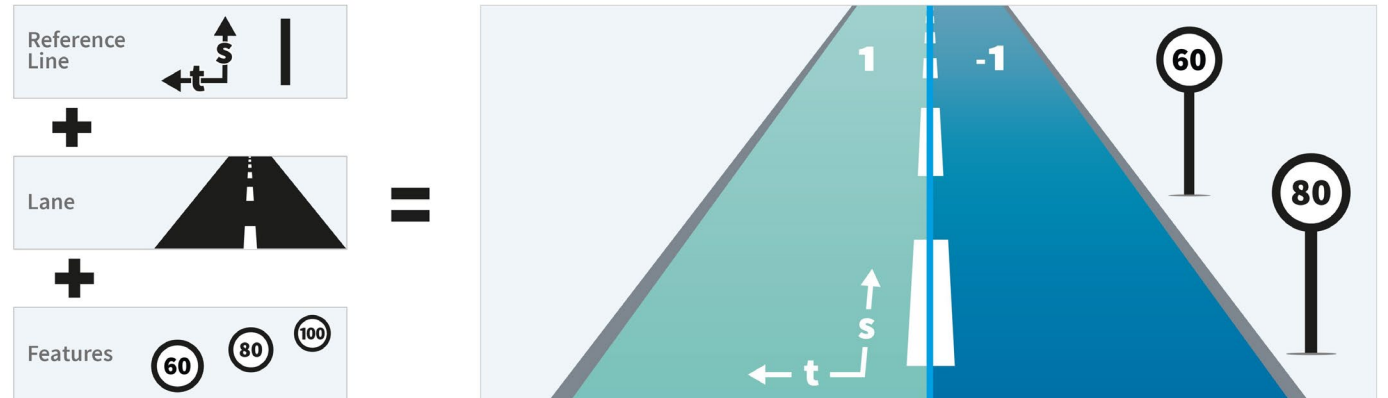
- Two releases:

- **V1.7.0** in July 2021

- Address known issues in V1.6.1

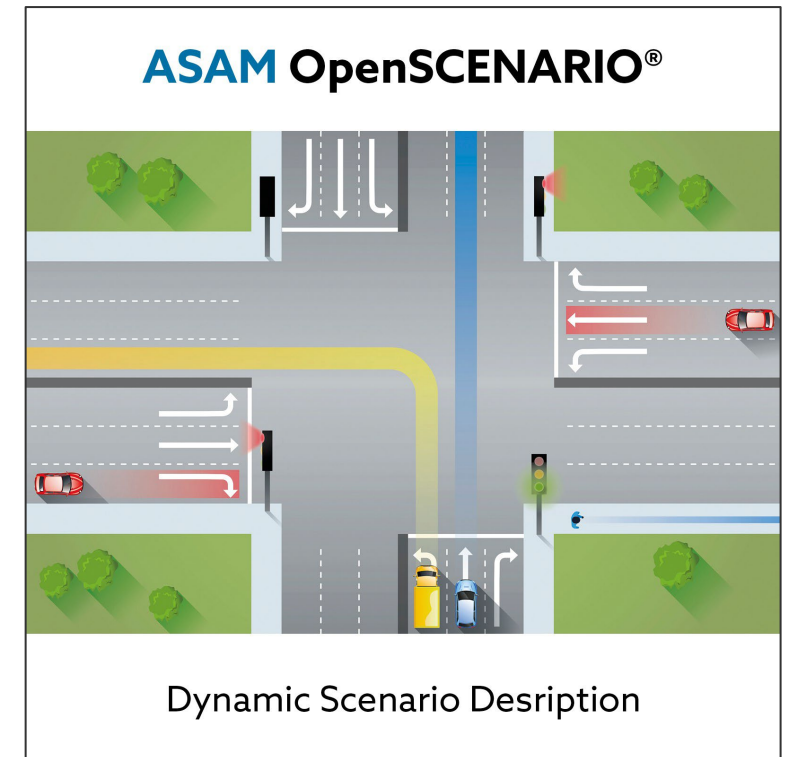
- **V1.8.0** planned for Q4 2022/Q1 2023

- New features based on concepts from the [OpenDRIVE Concept Paper](#)



# OpenSCENARIO 1

- File format for the **description of dynamic content in driving simulation applications**.
- **V1.1.1** bugfix released Nov 2021
  - Fixed small issue in schema
- **V1.2.0** will be releasing May 2022
  - Many clarifications in the specification
  - Support for virtual sensor recognition algorithm testing
  - Support for sensor error injection
  - Introduction of variables
  - Support for multiple controllers
  - Vehicle role, light action, animation action and much more...
  - backward compatible to v1.1.1 and v1.0.0

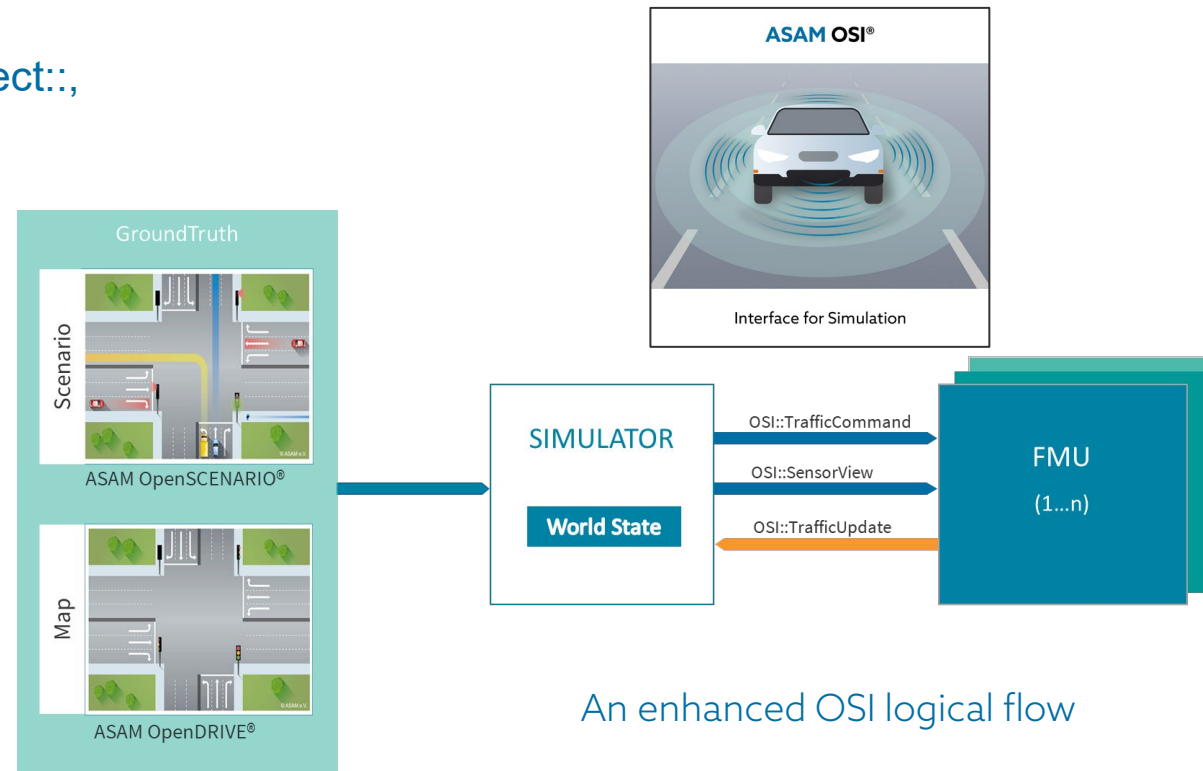


# ASAM OpenSCENARIO V2.0.0

- Public Release Candidate phase ended successfully last week
  - Core goal of the phase: Take the time to make sure that there are no significant errors or showstoppers in the standard
  - In other words: Give everyone time to submit feedback on the upcoming standard!
  - Main feedback channel: Implementers Forum
  - Participants from all across the globe participated in the forum and submitted very high amounts of very useful feedback on the standard
- ASAM OpenSCENARIO V2.0.0 has been submitted to the ASAM TSC for review and release approval
- Aim to release this May

# Open Simulation Interface (OSI)

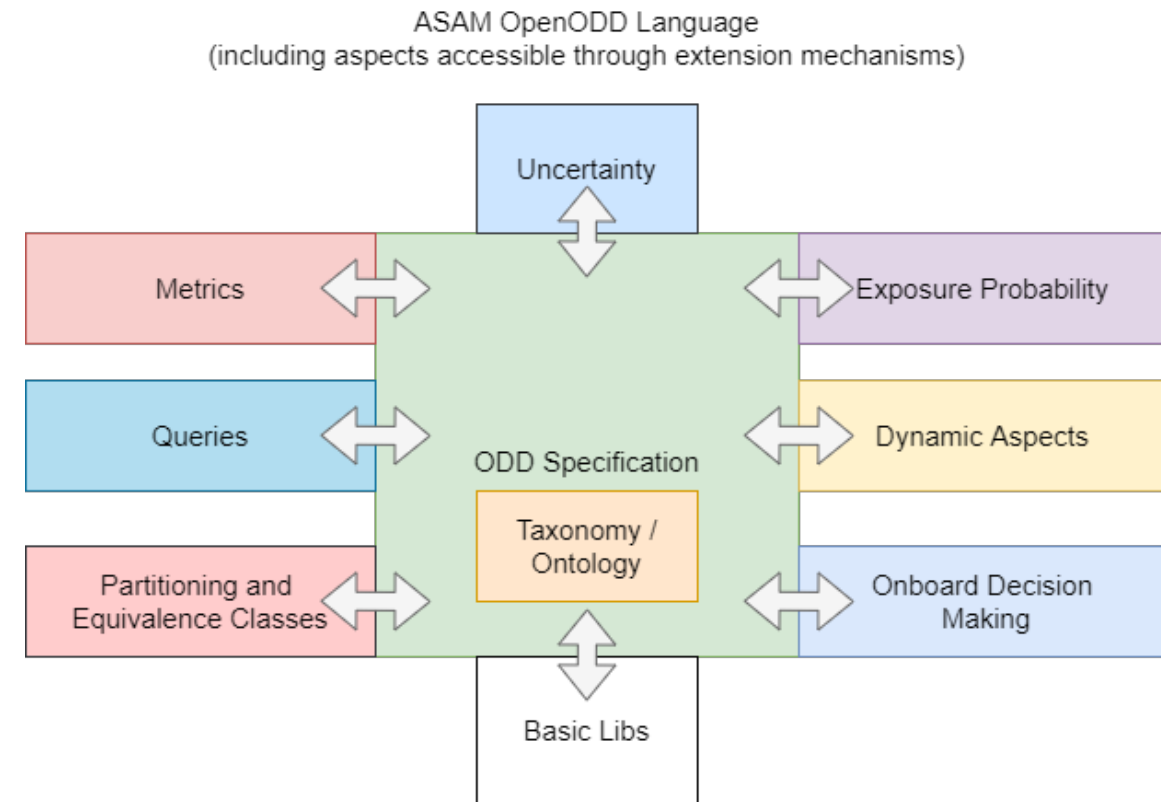
- Open-source, generic **interface between models (e.g. sensors, traffic participants) and simulation environments**
- **V3.4.0** released Nov 2021
  - Extensions to `SensorViewConfiguration::`, `StationaryObject::`, `LaneBoundary::`, `TrafficSign::` and more
  - Added support for using OSI with Flatbuffers
  - Migrated documentation to asciidoc in accordance to ASAM information architecture
- **V3.5.0** to be releasing Q3 2022
  - Logic Lanes
  - Improvements to documentation
  - Followup project planned directly after – details to follow!



An enhanced OSI logical flow

# ASAM OpenODD

- Standardized format for the **definition of Operational Design Domains (ODDs)**
- Concept paper released in November 2021 [\[link\]](#)
- Standardisation project is planned for July 2022
  - Proposal workshop took place March 14<sup>th</sup> [\[link\]](#)
  - Now: Proposal in preparation
  - Enrollments for the project will open soon!
- More detail to be presented in our technical seminar!



# Test Specification Study Group

Mit Headline, Subheadline und Aufzählung

- Examine the **relevant test techniques and use cases for testing and homologation** of the ADAS/AD Domain in automotive.
- A documented set of **overall use cases for testing and homologation**, a set of potential workflows implementing these, together with an overview of relevant users, standards and their application.
- **Recommendations** for additions to existing standards or new standards
- Core goal: **Define a valid basis for follow-up activities and projects**
- Check it out here: <https://report.asam.net/>
- **More details on Thursday!**



# Test Specification Study Group

## Relevant next Steps

- **Initiation of a Committee at ASAM** to coordinate the discussion, networking and initiation of new activities based on the results of the report → stay tuned for more information on this
- Proposal workshop to start forming the ideas for a **Test Specification Interface standard** at ASAM
- Proposal workshop for the first version of ASAM OpenODD based on the concept paper released in Dec. 2021
  - Workshop: <https://www.asam.net/conferences-events/detail/proposal-workshop-asam-openodd-v100/>
  - Concept paper: <https://www.asam.net/standards/detail/openodd/>
- Close alignment and integration of the recommendations into OpenSCENARIO V2.0/V2.xx

# Further Important Highlights

new Standard initiative

- OpenLabel → **Labeling formats for objects of interest and scenario data**
  - **V1.0.0** released November 2021
  - Now: Giving the industry time to begin implementation
  - Q4 2022: Evaluation of the next steps
- OpenXOntology → **a common definition of the domain model for the OpenX standards**
  - Detailed concept released in Q1 2022
  - Now: Evaluation of how to closely integrate the ontology into ASAM's other standards
  - Share your feedback with us!
- OpenDRIVE & CityGML → representing real-world data at a large scale
  - Proposal phase for a concept project
  - Bring together the expertise of both, automotive and city modeling domain to propose an easy and modular solution that is easy to use and extendable by further relevant stakeholders (e.g. traffic or energy management).
  - Based in part on the area modelling concept of the ODR concept project

# The OpenX Roadmap

(Status 27.04)

Roadmap		2022												2023											
Name	Status	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
OSC 2 Implementers Forum	Running	█	█	█																					
OSC 1.2.0	Running	█	█	█	█																				
OSC 2.0	Running	█	█	█	█																				
OSI 3.5.0	Running	█	█	█	█																				
ODR 1.8	Running	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█									
OpenODD	Planned						█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Test Specification Followup	Planned						█	█	█	█	█	█	█												
OSI	Planned						█	█	█	█	█	█	█	█	█	█									
OSC 2.0.1	Planned								█	█	█	█	█	█	█	█	█	█							
OSC 1.3.0	Planned										█	█	█	█	█	█	█	█	█	█					
OpenDRIVE + CityGML Concept	Planned										█	█	█	█	█	█	█	█	█	█	█	█			

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