

ASAM OpenODD Concept Webinar

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ASAM e.V.

11.11.2021
Online

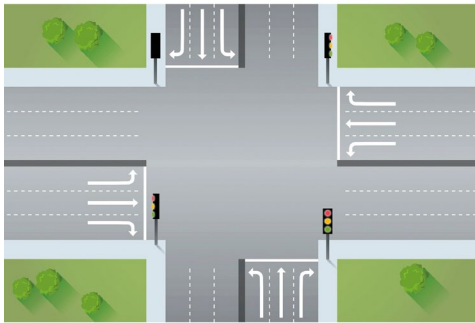


ASAM OpenODD within the OpenX Family

An Overview of ASAM OpenX...

8 individual standard initiatives

ASAM OpenDRIVE®



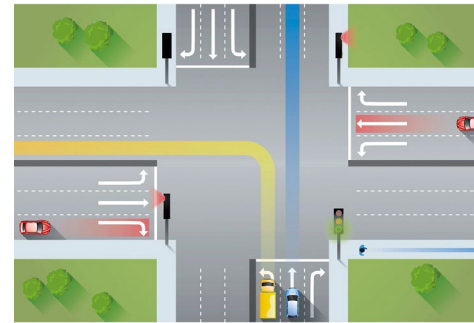
Static Road Network Description

ASAM OpenCRG®



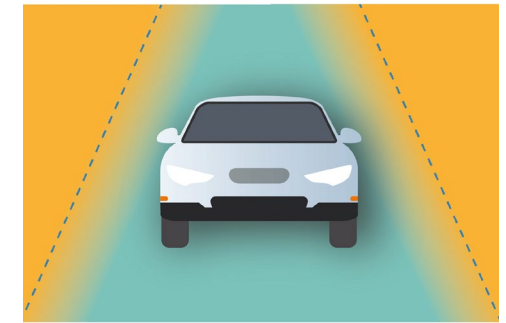
Static Road Surface Description

ASAM OpenSCENARIO®



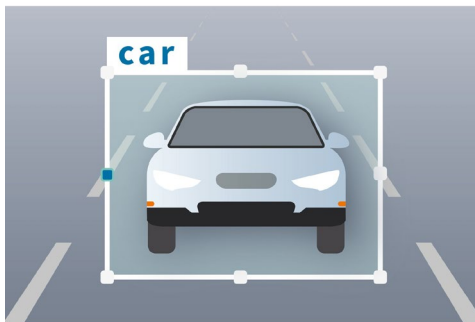
Dynamic Scenario Description

ASAM OpenODD



Defining the Operational Design Domain for Automated Vehicles

ASAM OpenLABEL



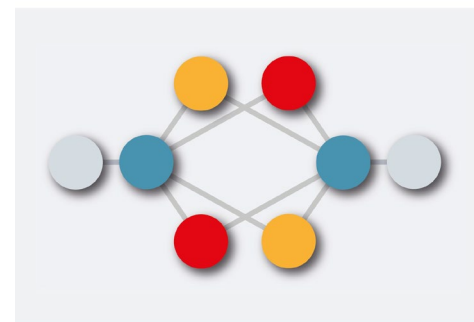
Standardized Labeling for objects and Scenarios

ASAM OSI®



Interface for Simulation

ASAM OpenXOntology



Core Domain Model for the ASAM Simulation Domain

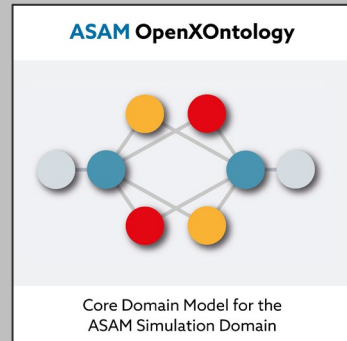
ASAM Study Project Test Specification



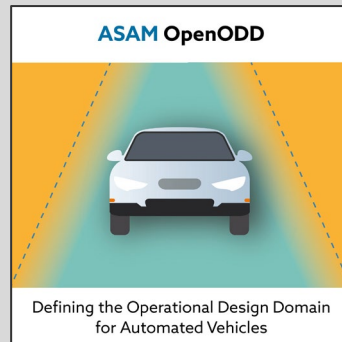
Analysis and harmonization of automotive testing techniques and standards

Vision of ASAM OpenX...

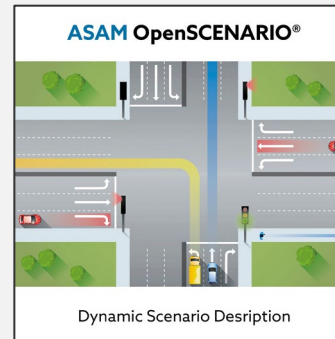
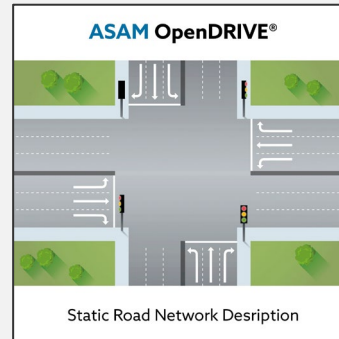
Domain Ontology



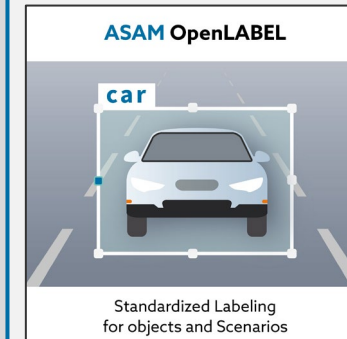
Operational Design Domain



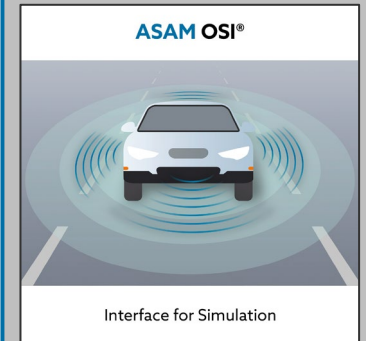
Static and dynamic content of a scenario



Annotation

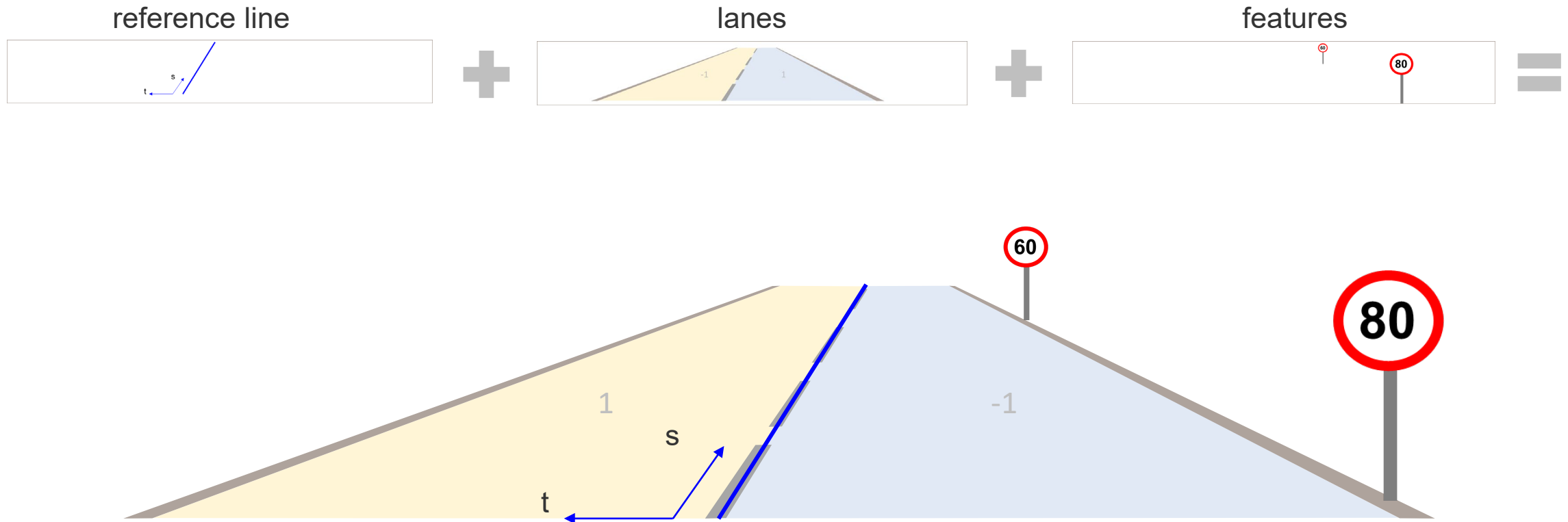


Interface

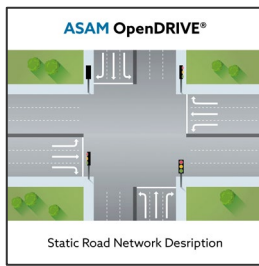


Define ASAM OpenDRIVE for a simple T-Junction

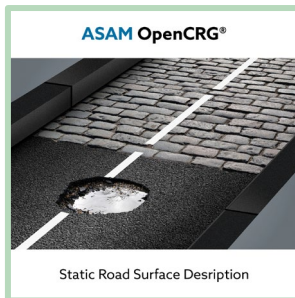
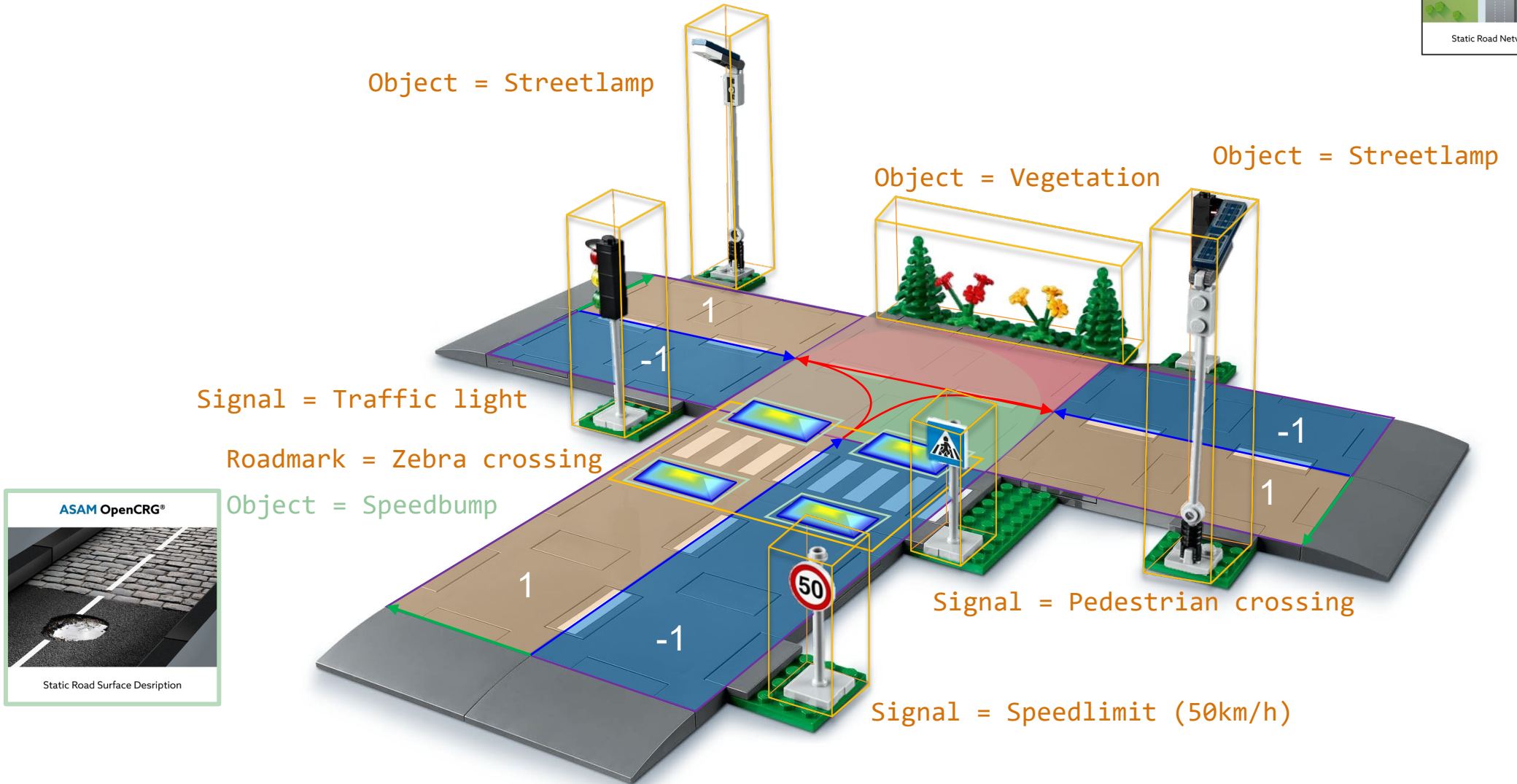
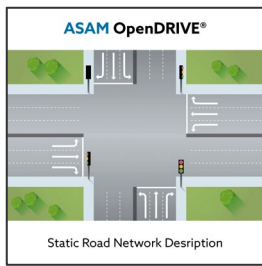
ASAM OpenDRIVE: Hierachy



ASAM OpenDRIVE Example: T-Junction

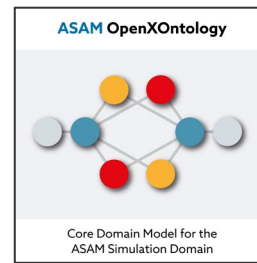
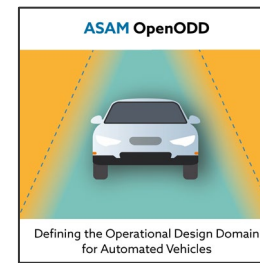
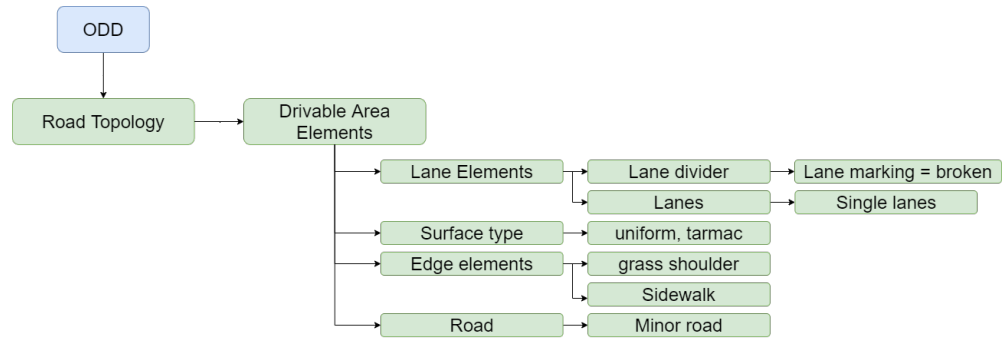


ASAM OpenDRIVE Example: T-Junction

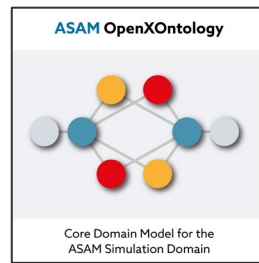
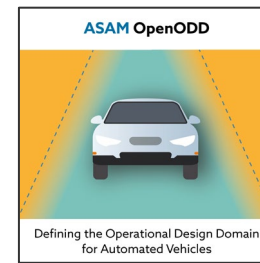
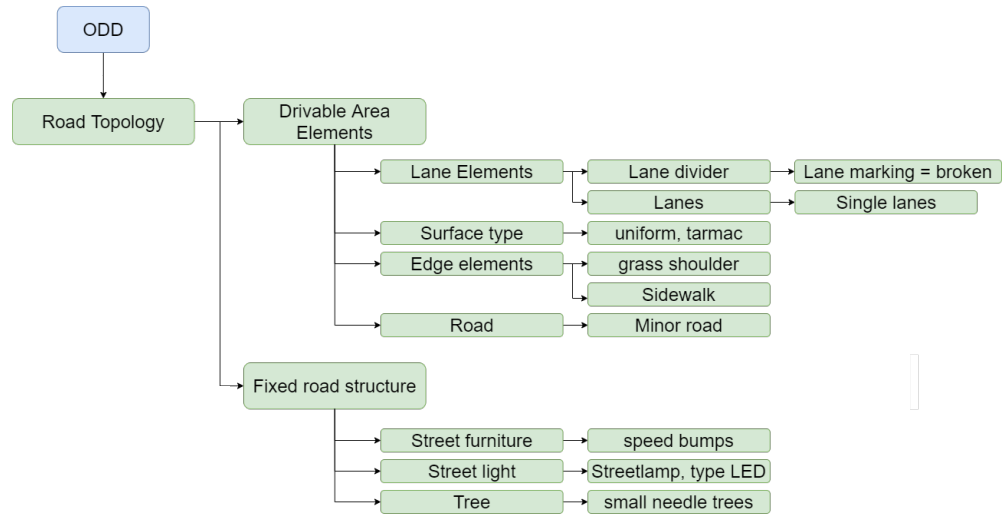


Define an ontology for the T-Junction

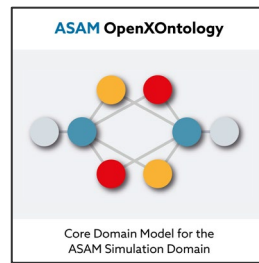
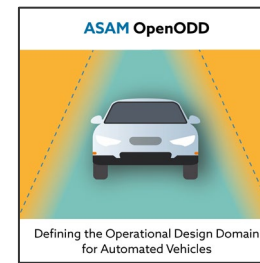
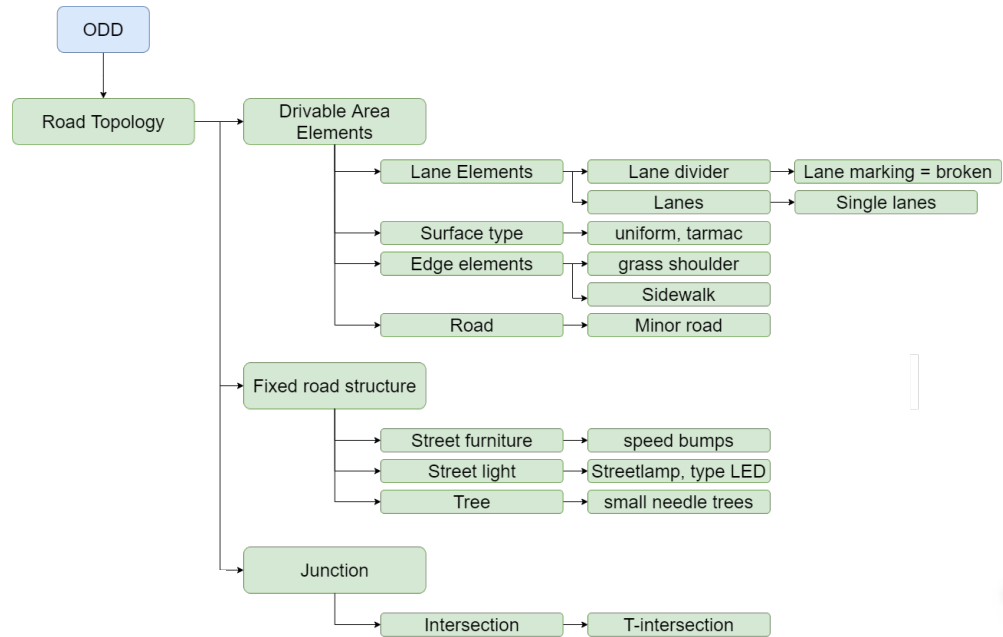
Ontology for Example: T-Junction



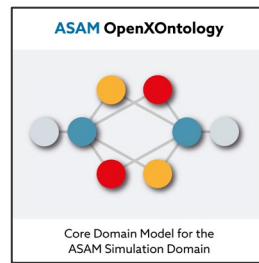
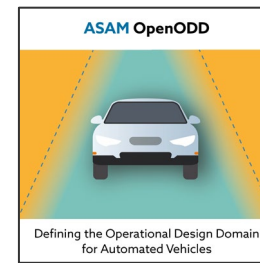
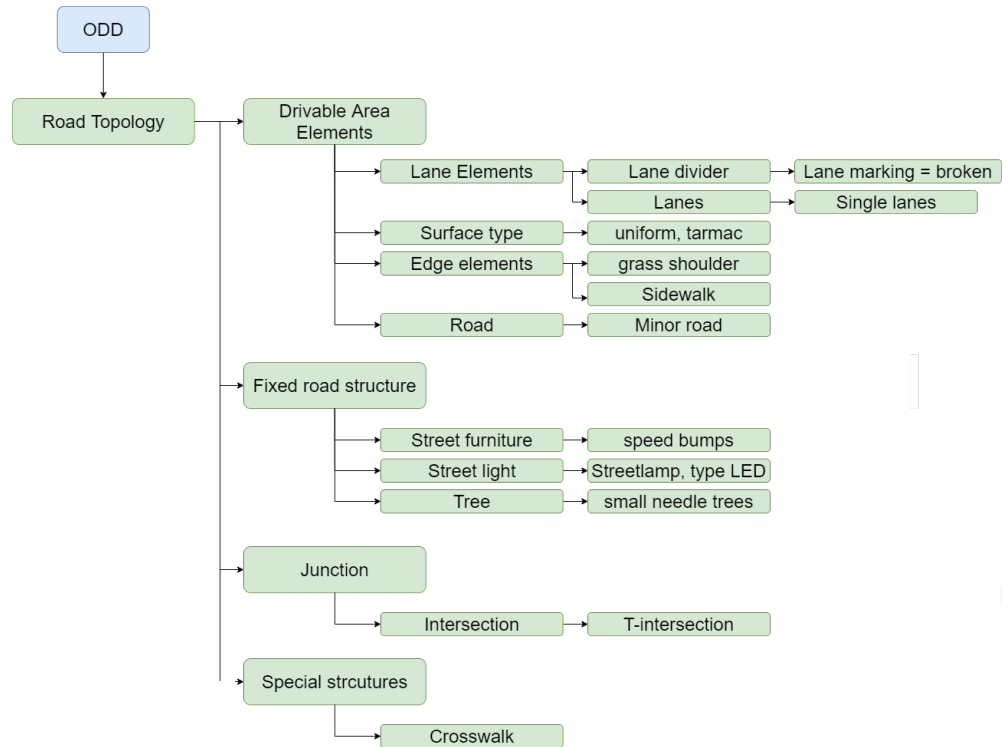
Ontology for Example: T-Junction



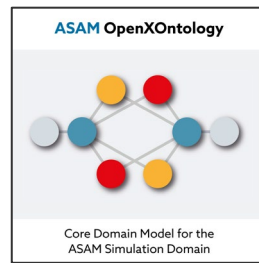
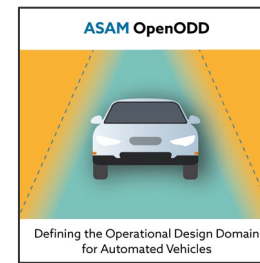
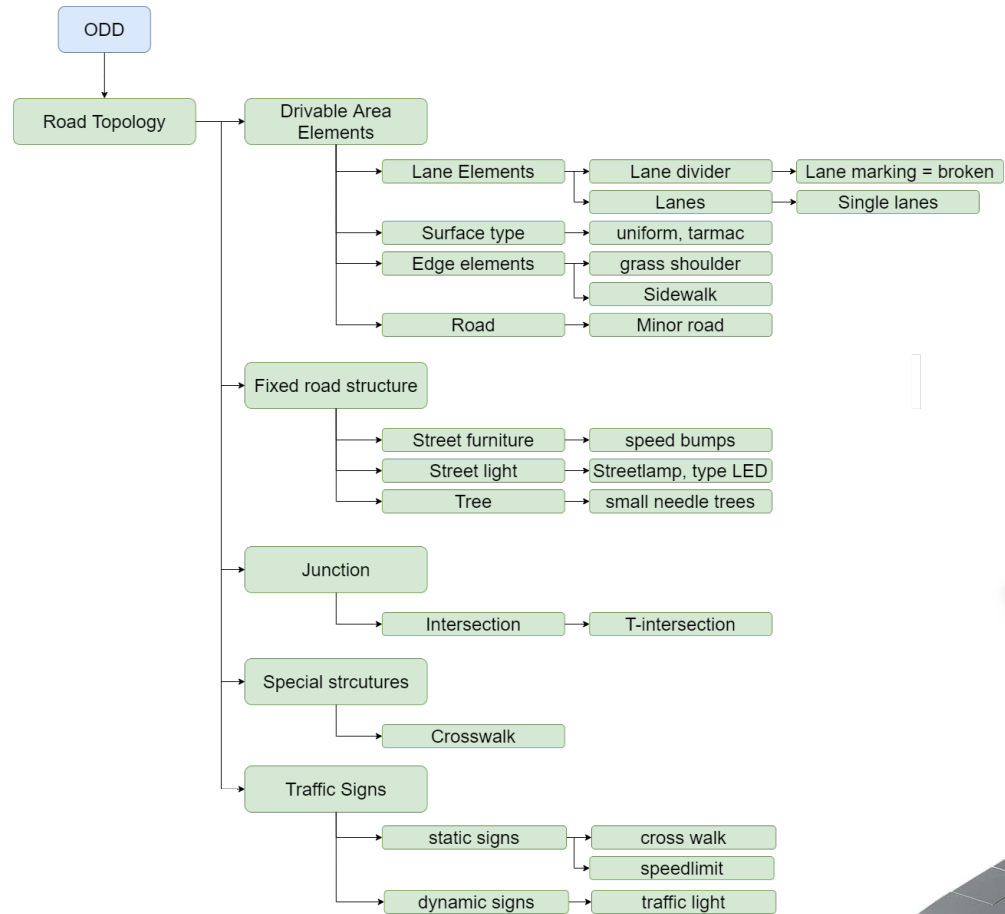
Ontology for Example: T-Junction



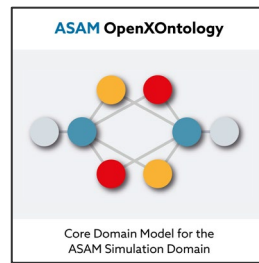
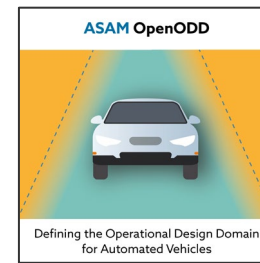
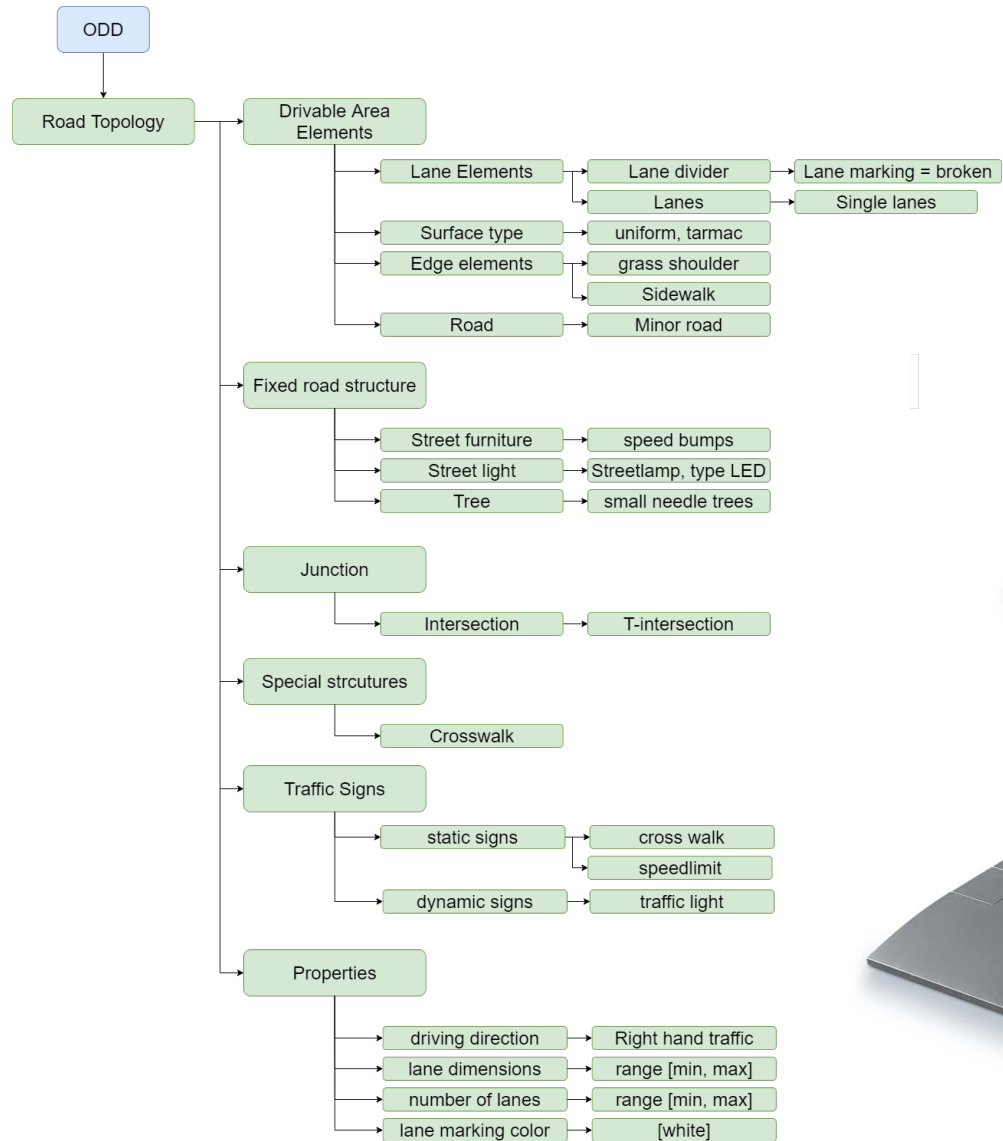
Ontology for Example: T-Junction



Ontology for Example: T-Junction

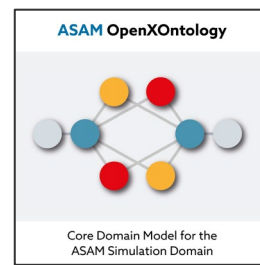
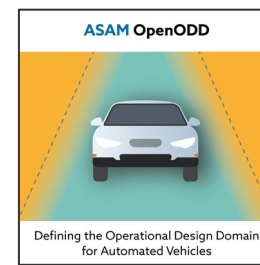
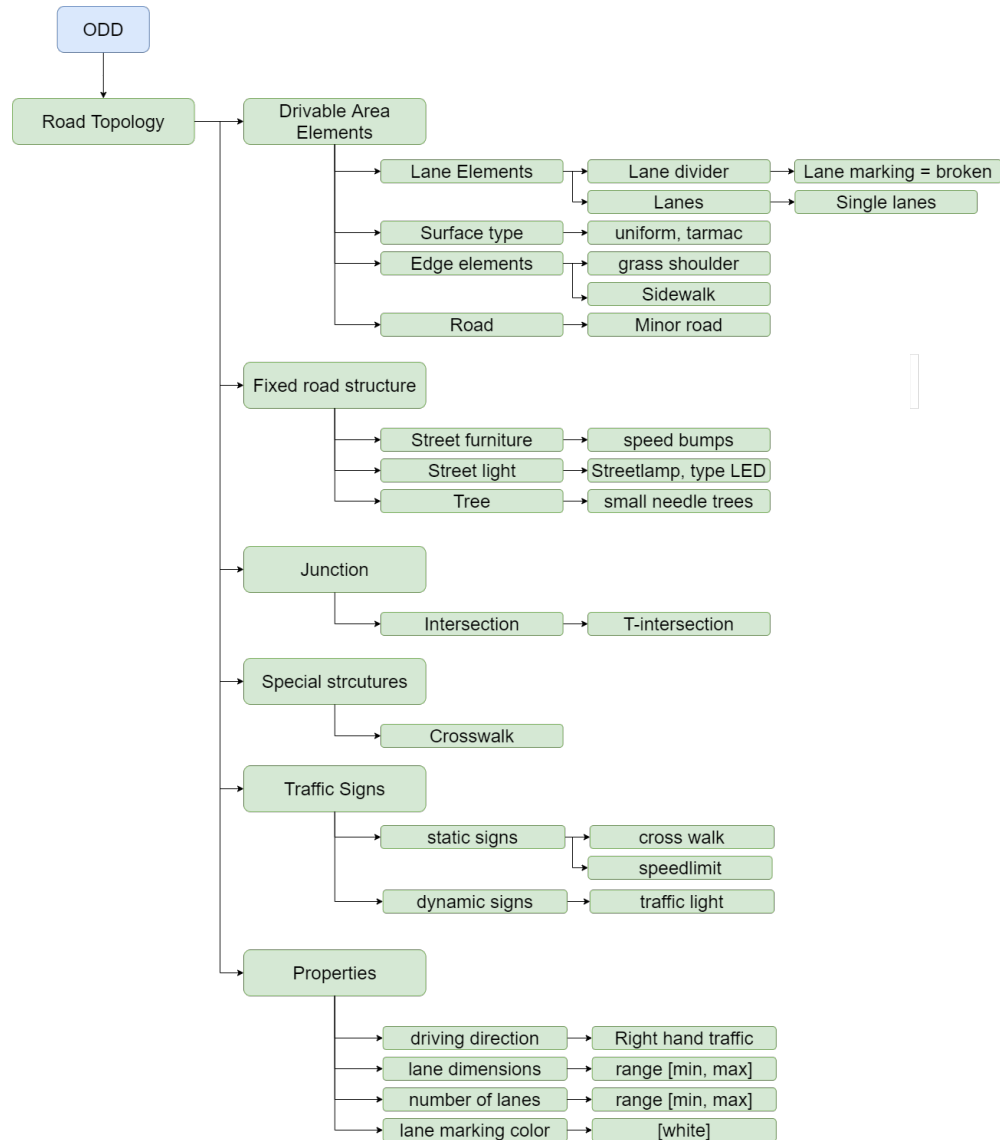


Ontology for Example: T-Junction



Define the Operational Design Domain for the T-Junction

ODD Definition for the T-Junction: Permissive



Example with Pseudo code:

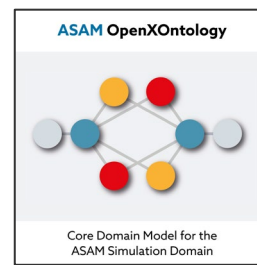
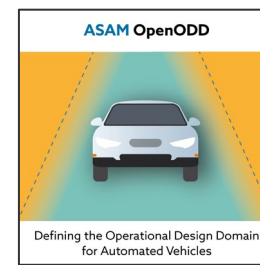
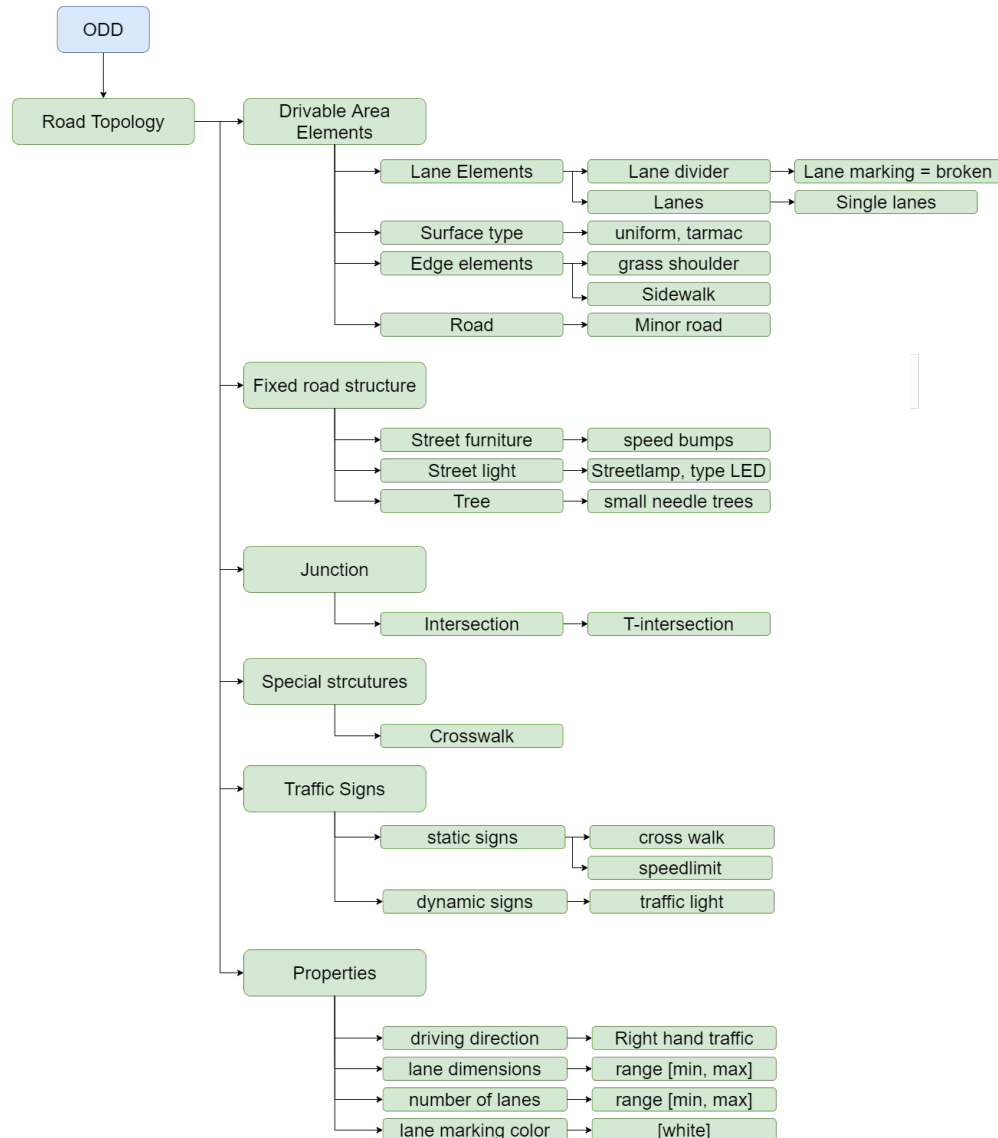
```

include odd_ontology

#permissive definition
myODD(
    mode: 'permissive';
    SUITABLE laneDimensions WHEN {min: 3.0, max: 5.0};
);
    
```



ODD Definition for the T-Junction: Restrictive



Example with pseudo code:

```

include odd_ontology

#restrictive definition
myODD(
  mode: 'restrictive'
  SUITABLE Lanemarking WHEN 'broken';
  SUITABLE Lanes WHEN 'single lanes';
  ...
  SUITABLE driving_direction WHEN 'right_hand_traffic';
  SUITABLE laneDimensions WHEN {min: 3.0, max: 5.0};
);
    
```



Next Steps for ASAM OpenODD

ASAM Development

From the First Idea to the Publication of a Standard

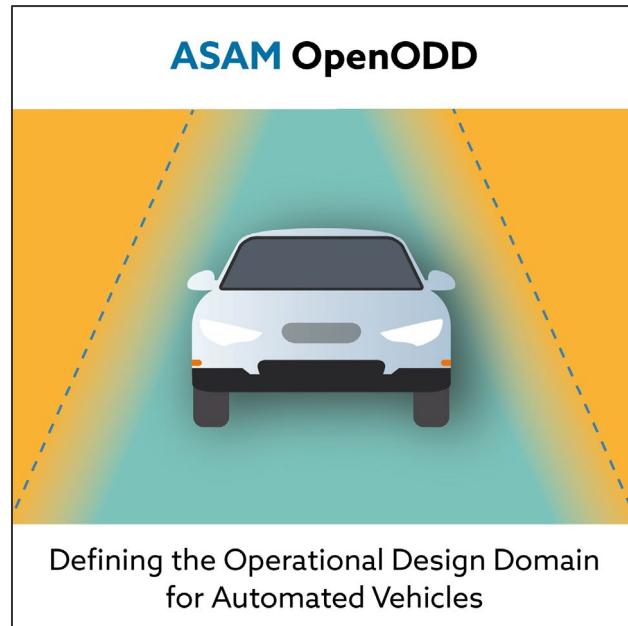


Guiding Principles:

- **Member-driven**
Initiatives and decisions are taken by the member companies.
- **Open exchange**
ASAM requests open exchange among all stakeholders.
- **Domain expertise**
ASAM has a global network of domain experts to develop standards
- **Flexible processes**
ASAM has lean yet flexible process structures leading to short development times
- **Project support**
Experienced Technology Managers support the working groups

Next Steps for ASAM OpenODD

The goal is to start the standardization project for ASAM OpenODD V1.0.0 in March/April 2022



Necessary steps to setup the project

- Write the project proposal until 4th of February
 - Schedule first proposal meeting early January 2022
 - Define workpackages
 - Estimate work effort
 - Define required service provider budget
 - Find committed project members
- Present the project proposal at the TSC on 22nd of February
- Plan the kickoff workshop if the TSC approved the project proposal for March or April 2022

Aim to release OpenODD V 1.0.0 in 2023