ASAM OSI v3.3.0
Release Presentation

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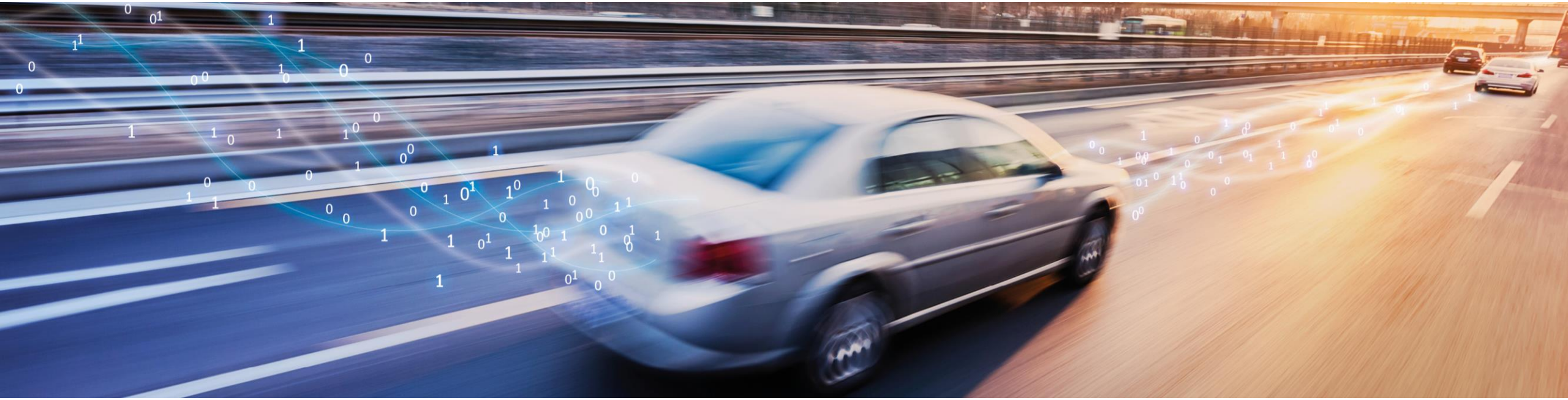
Online



ASAM Association for Standardization of Automation and Measuring Systems

Agenda

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Introduction

The Open Simulation Interface (OSI) is a specification for interfaces between models and components of a distributed simulation.

Some of OSI’s characteristics:

1. OSI defines generic interfaces to ensure modularity, integrability, and interchangeability of the individual components.
2. OSI has a strong focus on environmental perception of automated driving functions.
3. OSI was also developed to addresses the emerging standard ISO 23150 for real sensors' standardized communication interface.

One of the key goals remains to simplify the integration and therefore significantly strengthen accessibility and usefulness of virtual testing.

In tandem with packaging specifications, like the OSI Sensor Model Packaging (OSMP) specification, it provides solutions for simulation models exchange across different implementations.

Motivation

1. The current release will improve/extend OSI's usability since all changes and new features are based on concrete use-cases and tend to solve one or several "customer" issues.
2. Changes that have been done take into account other OpenX standards to ensure compatibility, in fact there is a dedicated working group for this specific purpose "Harmonization with OpenX".
3. Current changes have, for the first time, attracted Tier 1 suppliers to help us better understand sensor specific technology.
4. All in all, the current extension ensures a better support for virtual verification and validation of autonomous driving functions.
5. All merged features went through several technical and linguistic checks.

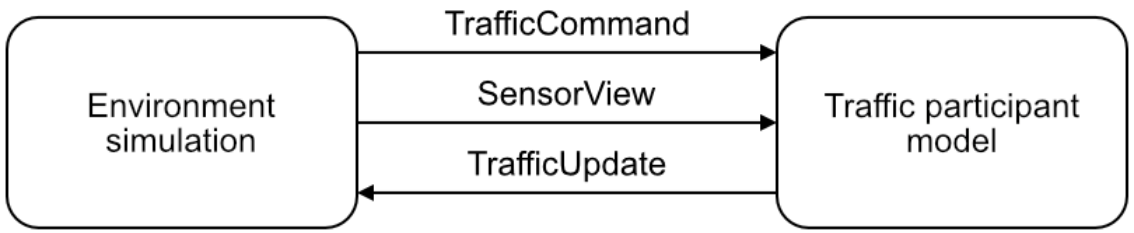
New Features

TrafficCommand

- A new top-level message which enables event-based control of traffic participant models, e.g. with regard to a scenario specification.
- Traffic commands influence the behavior of the traffic participant model.

TrafficUpdate

- A new top-level message to send updated properties of traffic participant models.
- Represents the perceivable state of the traffic participant.



New Features

LogicalDetectionData

- Add new LogicalDetectionData message to SensorData, which provides detection data with respect to the reference frame of the logical/virtual sensor.
- Alignment with ISO 23150 is also considered (from the naming point of view).

WheelData

- A sub-message to support additional information the vehicle’s wheel data.

OSI_lane

- Better align with OpenDrive's lane type information and enable traffic participant models to identify lanes on which they are supposed to move.

ModelReferences

- Extended to be part of traffic lights and signs.
- Added to the global ground truth to specify the 3D model representing the environment.

New Features

CameraSensorView

- Extended the camera sensor view configuration to better support the configuration of the simulation environment.
- E.g., introducing new messages to describe the light’s wavelength range to consider.

SteeringWheel

- New field to describe the position of the steering wheel.

MovingObjectClassification

- Introduced the assigned lane id and the assigned lane percentage of a moving object.

Other Changes

Documentation Update

- Linguistic review on all new documentation.
- Enhancements on previous documentation and pictograms.

Pull Request Check List update

- Updated to checklist for pull requests to provide clearer orientation for all users.

Other improvements

- Make handling of enums in rules check more robust, especially ones.
- Set the default compiler to C++ 11 to support protobuf>3.6.

Backward Compatibility

All changes for the current minor release are backward compatible.

Relation to Other Standards

OpenScenario

- ID Management
- Environmental conditions
- Exchange scenario specific information
  - E.g., enable the scenario engine to communicate with traffic participant models.

OpenDrive

- ID Management
- Road-specific/map information
  - Enrich road network description to solve existing ambiguities and facilitate the coupling of traffic participants.
- Ensure consistency
  - Traffic signs, road markings, etc…

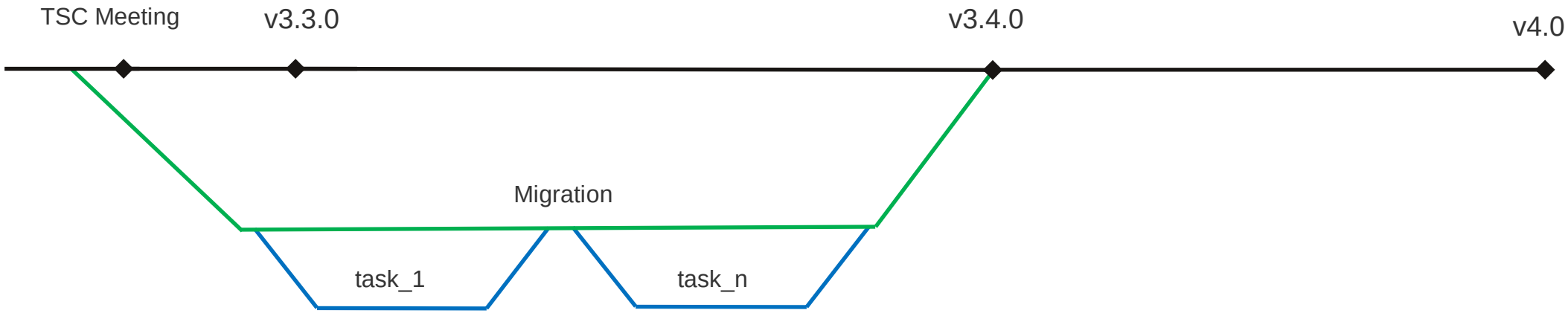
ISO 23150

- Alignment on OSI SensorData level.
- Clarification how to adapt OSI regarding ISO23150 correctly.

Deliverables

- All deliverables can be directly downloaded from the master branch:
  - https://github.com/OpenSimulationInterface/open-simulation-interface

Timeline and Next Steps



- v3.3.0 – Date to be specified after TSC release approval.
- v3.4.0 – Between mid and end of June, focus on documentation restructuring.
- v4.0.0 – To be shifted to October, focus on non-backward compatibility features and ISO 23150.

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