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### Additional experts
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### Short Description/Transmitted Information
- The Open Simulation Interface (OSI) defines an interface for the interconnection between the simulation environment and the automated driving functions in virtual scenarios

### Application Scope
- Simulation based Engineering and Testing of automated driving functions, virtual and scenario based testing, sensor and environment simulation

### Maturity
- Automotive-specific shaping

### Goals
- Connect any automated driving function to any driving simulator, simplify and improve virtual testing

### Penetration
- Individual expert teams

### Visibility
- Approximately 10%

### Promoting Bodies
- Projects of the PEGASUS family (PEGASUS, VVMethoden, SET Level), VDA Leitinitiative, ASAM, referenced in some ISO standards

### Type
- ASAM standard (work-in-progress)

### IT Standard Classification
- Interoperability Standard, Integration Standard

### Data Format
- OSI uses the message format by Google's protocol buffers for structuring data

### Relations to other standards
- ASAM OpenScenario, OpenDRIVE
- MODELICA FMI 3.0
- ISO 23150 (standard for sensor output)

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1. [https://intranet.prostep.org/display/PROJ/Smart+Systems+Engineering](https://intranet.prostep.org/display/PROJ/Smart+Systems+Engineering)
The Open Simulation Interface (OSI) defines an interface for the connection between the simulation environment and the automated driving functions in virtual scenarios.

Version 3.1.2 released Jan. 2019 of OSI was published as an Open Source Project on Github and was transferred to the ASAM association. The current version from ASAM is 3.2.0.

OSI uses the message format by Google's protocol buffers for structuring data. One message for the simulation environment interface (osi::GroundTruth), which describes the simulated objects in a global coordinate system.

OSI since V3.0 distinguishes between Sensor View (osi::SensorView) and Sensor Data (osi::SensorData) as input and output of a sensor.

Application areas are

- automated and autonomous driving
- virtual scenarios based testing
- sensor and environment simulation

Sensor data and ISO 23150 are harmonized. ISO 23150 is the standard for sensor output.

Actual developments standardize e.g. commands for the control of further traffic participants within traffic scenarios (osi::TrafficCommand and osi::TrafficUpdate).
Interoperability between Environmental Models, Scenarios, Systems under Test (SUT), and other Traffic Participants within simulations during runtime.

- Naming convention: always talk about Open Simulation Interface, the abbreviation OSI is already used for the ISO 7-layer-model of interprocess communication.
- Many stakeholders with different requirements.
- Dependence on protocol buffers which don’t guarantee performance in different programming languages and in all application areas.
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