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Additional Resources

Editor	Stefan Rude
Additional experts	Smart Systems Engineering Group ¹
Short Description/ Transmitted Information	<ul style="list-style-type: none"> • OpenSCENARIO defines a data file format • OpenSCENARIO specification is currently transferred to ASAM to become a public standard
Application Scope	<ul style="list-style-type: none"> • Description of vehicle maneuvers • Driving and Traffic simulation
Maturity	<ul style="list-style-type: none"> • Automotive-specific shaping • Industrialization (potentially standardization)
Goals	<ul style="list-style-type: none"> • Standardized description format for complex, synchronized maneuvers, involving multiple traffic participants • Scenario based virtual verification, testing and validation of driver assistance systems and highly automated vehicles
Penetration	<ul style="list-style-type: none"> • Individual expert teams • Individual domains
Visibility	<ul style="list-style-type: none"> • Approx. 30%
Promoting Bodies	<ul style="list-style-type: none"> • ASAM
Type	<ul style="list-style-type: none"> • ASAM Standard
IT Standard Classification	<ul style="list-style-type: none"> • Interoperability Standard • Integration Standard
Data Format	<ul style="list-style-type: none"> • Text Format (XML)

¹ <https://intranet.prostep.org/display/PROJ/Smart+Systems+Engineering>

Relations to other standards	<ul style="list-style-type: none"> • Used together with OpenDRIVE • May use OpenCRG
Overlap with other standards	<ul style="list-style-type: none"> • none
Available accompanying documentation (Software vendors)	<ul style="list-style-type: none"> • https://vires.mscsoftware.com/?s=open+solutions
Available accompanying documentation (Industry Users)	<ul style="list-style-type: none"> • http://www.openscenario.org/ - Specification and Examples • https://www.asam.net/standards/detail/openscenario/ • https://www.pegasusprojekt.de/files/tmpl/PDF-Symposium/11_Scenario-Formats.pdf – PEGASUS Projekt
Available accompanying documentation (Management)	<ul style="list-style-type: none"> • ...

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- **OpenSCENARIO** defines a file format for the description of the **dynamic content** of driving and traffic simulators
- OpenSCENARIO files are defined by an XML schema (*.xosc)
- The current version (0.9.1 released 2017) of OpenSCENARIO is developed, owned and published by VIRES Simulationstechnologie GmbH. The specification is transferred to ASAM to become a public standard (first release expected in 2019)
- Application areas are
 - **Description of vehicle maneuvers in a storyboard**
 - **Driving simulation**
 - **Traffic simulation**
- While **OpenDRIVE** (1) (Road Network) and **OpenCRG** (2) (Road Surface) describe the **static content** of driving simulation environments, **OpenSCENARIO** describes the **dynamic content**
- OpenSCENARIO is a key element in PEGASUS project (3), which defined various initial use cases
- The ASAM OpenSCENARIO Concept project, starting in January 2020, aims to evaluate and to conceptually specify feature requests for the further development of ASAM OpenSCENARIO

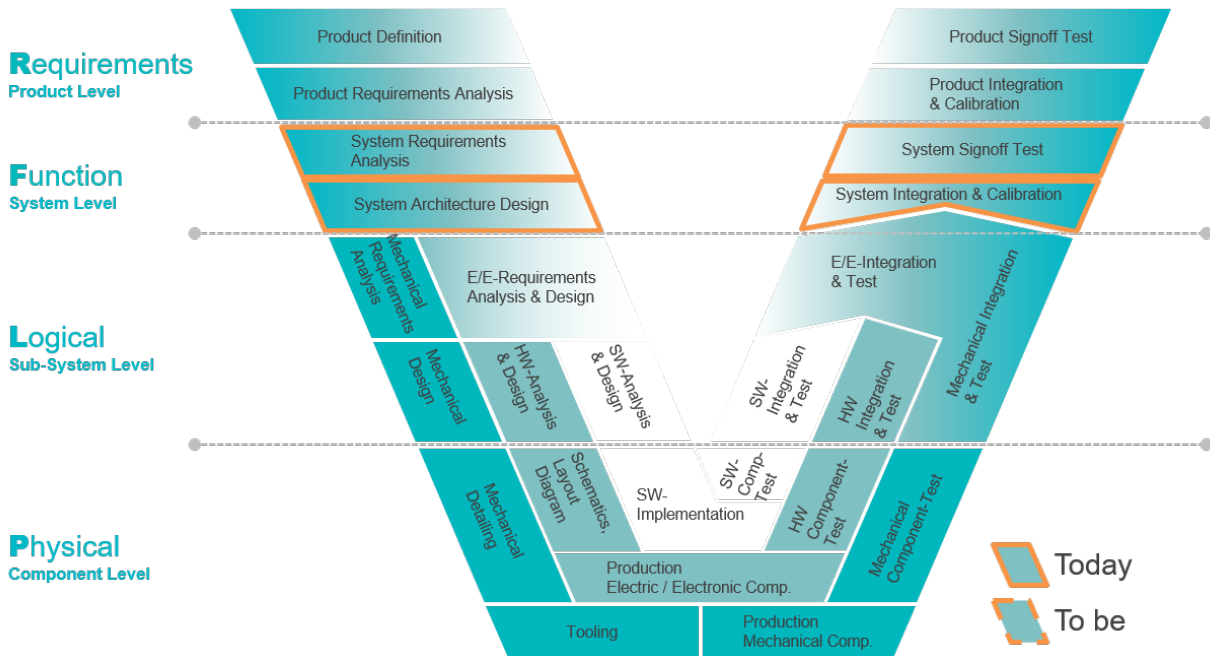
1) <http://www.opendrive.org/> 2) <http://www.opencrg.org/> 3) <https://www.pegasusprojekt.de/en/home>

Information from <http://www.openscenario.org/> and <https://www.asam.net/standards/detail/openscenario/>

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Positioning of OpenScenario in V-Model



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- Scenario based virtual verification, testing and validation of driver assistance systems and highly automated vehicles
- Basis technology for scenario modelling and to the exchange of scenario models between development partners
- The benefits of using OpenSCENARIO files are
 - open file format
 - tool-independent description of specifications for time-variant behavior of elements in a simulation run
 - possibility to describe very complex traffic situations from highway to urban areas
 - description of scenarios on a logical and a concrete layer of abstraction
 - enabling of reusability using parameterization and catalog-based scenarios
 - easy validating, editing, importing and exporting of the XML file by simulation tools and content editors

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- New and upcoming standard
- Actual less tool & vendor support
- Missing interoperability between modelling tools

- Small user community – but growing
- No reference implementation for driver models
- Version 2.x is work in progress – unclear compatibility between 0.x und 2.x of the XML schema

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Datei	Geändert
 image2019-10-2_13-32-56.png ²	Nov. 17, 2020 by Peter Tabbert ³
 Positioning of OpenScenario in V-Model.png ⁴	gestern um 9:20 vorm. by Peter Tabbert ⁵
 Fact Sheet_ OpenSCENARIO (OpenSCENARIO).pdf ⁶	vor weniger als einer Minute by Peter Tabbert ⁷

² https://intranet.prostep.org/download/attachments/22806555/image2019-10-2_13-32-56.png?api=v2

³ <https://intranet.prostep.org/display/~petertabbert>

⁴ <https://intranet.prostep.org/download/attachments/22806555/Positioning%20of%20OpenScenario%20in%20V-Model.png?api=v2>

⁵ <https://intranet.prostep.org/display/~petertabbert>

⁶ https://intranet.prostep.org/download/attachments/22806555/Fact%20Sheet_%20OpenSCENARIO%20%28OpenSCENARIO%29.pdf?api=v2

⁷ <https://intranet.prostep.org/display/~petertabbert>