

[General](#) [Details](#) [Positioning in V-Model](#) [Relevance and Benefit for MBSE](#) [Risks and Impediments](#)

Additional Resources

Editor	Stefan Rude
Additional experts	Smart Systems Engineering Group ¹
Short Description/ Transmitted Information	<ul style="list-style-type: none"> • OpenDRIVE defines a data file format • OpenDRIVE specification is currently transferred to ASAM to become a public standard
Application Scope	<ul style="list-style-type: none"> • Description of road networks • Driving and Traffic simulation
Maturity	<ul style="list-style-type: none"> • Automotive-specific shaping
Goals	<ul style="list-style-type: none"> • Standardized description format for a detailed and logical structure of complex road networks with static objects • 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. 50%
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 (ASCII/XML)

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

Relations to other standards	<ul style="list-style-type: none"> • Used together with OpenScenario • May include 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.opendrive.org/ • OpenDRIVE Format Specification Rev. 1.5 (2019), download from website above • https://www.asam.net/standards/detail/opendrive/ • https://www.pegasusprojekt.de/files/tmpl/PDF-Symposium/11_Scenario-Formats.pdf – PEGASUS Projekt
Available accompanying documentation (Management)	<ul style="list-style-type: none"> • ...

General [Details](#) Positioning in V-Model Relevance and Benefit for MBSE Risks and Impediments

Additional Resources

- **OpenDRIVE** defines a file format for the precise analytical description of road networks
- OpenDRIVE files are defined by XML schemata (*.xodr, *.xodrz)
- The current version (1.4 Rev. H. - released 2015 – ASAM; 1.5 at OpenDRIVE Homepage) of OpenDRIVE 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 road networks**
 - **Driving simulation**
 - **Traffic simulation**
- While **OpenSCENARIO** (1) (Vehicle Maneuver) describes the **dynamic content** of driving simulation environments, **OpenDRIVE** describes the **static content** including **OpenCRG** (2) (Road Surface Profiles)
- The description of road geometry includes surface properties, markings, signposting and logical properties such as lane types and directions
- OpenDRIVE is a key element in PEGASUS (3) project, which defined various initial use cases

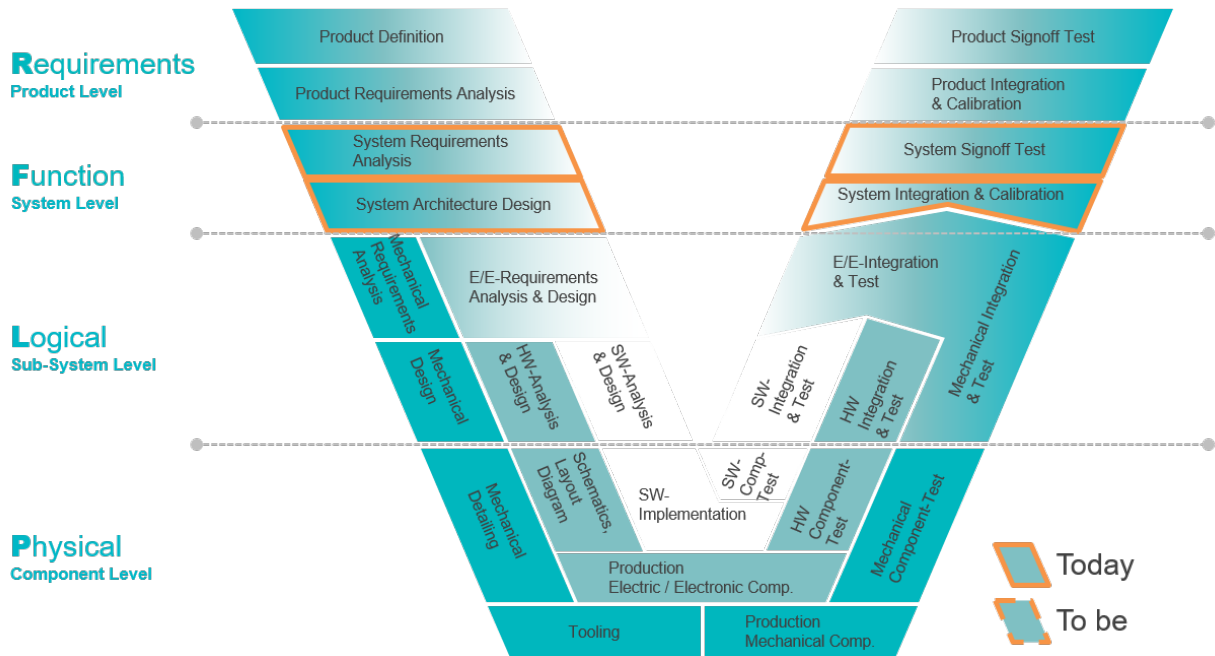
1) <http://www.openscenario.org/> 2) <http://www.opencrg.org/> 3) <https://www.pegasusprojekt.de/en/home>

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

General Details [Positioning in V-Model](#) Relevance and Benefit for MBSE Risks and Impediments

Additional Resources

Positioning of OpenDrive in V-Model



General Details Positioning in V-Model [Relevance and Benefit for MBSE](#) Risks and Impediments

Additional Resources




- OpenDRIVE is a base/core technology for highly automated vehicles
- The relevance of OpenDRIVE for SE/MBSE is closely related to the relevance of the exchange of simulation models and co-simulations, which both have a very high relevance
- The benefits of using OpenDRIVE files are
 - open file format
 - tool-independent description of road networks for a simplified exchange between simulators
 - creation of database pools for multi-party projects
 - possibility of custom extensions
 - Established and well managed format since 2006, build from actual user use cases
 - easy importing, exporting, editing and validating of the XML file by simulation tools and content editors

General Details Positioning in V-Model Relevance and Benefit for MBSE [Risks and Impediments](#)

Additional Resources

General Details Positioning in V-Model Relevance and Benefit for MBSE Risks and Impediments

Additional Resources

Datei	Geändert
 image2019-10-2_13-32-56.png ²	Nov. 17, 2020 by Peter Tabbert ³
 Positioning of OpenDrive in V-Model.png ⁴	gestern um 9:18 vorm. by Peter Tabbert ⁵
 Fact Sheet_ OpenDRIVE (OpenDRIVE).pdf ⁶	vor weniger als einer Minute by Peter Tabbert ⁷

² https://intranet.prostep.org/download/attachments/22806543/image2019-10-2_13-32-56.png?api=v2

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

⁴ <https://intranet.prostep.org/download/attachments/22806543/Positioning%20of%20OpenDrive%20in%20V-Model.png?api=v2>

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

⁶ https://intranet.prostep.org/download/attachments/22806543/Fact%20Sheet_%20OpenDRIVE%20%28OpenDRIVE%29.pdf?api=v2

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