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Additional Resources

Editor	Dirk Denger
Additional experts	
Short Description/ Transmitted Information	<ul style="list-style-type: none"> • Graphical, descriptive, semi-formal, modelling language • SysML is extension of UML • Suitable for mechatronic systems
Application Scope	<ul style="list-style-type: none"> • Describe system-level use cases, actors and requirements • Describe system-level structure and behavior
Maturity	<ul style="list-style-type: none"> • Automotive-specific shaping
Goals	<ul style="list-style-type: none"> • Traceability across multiple aspects/views („from requirement to test“) • Cross-disciplinary communication and collaboratio • Lifecycle-oriented
Penetration	<ul style="list-style-type: none"> • Individual expert teams
Visibility	<ul style="list-style-type: none"> • Approx. 10%
Promoting Bodies	<ul style="list-style-type: none"> • prostep ivip Association • INCOSE • GfSE
Type	<ul style="list-style-type: none"> • OMG Standrad
IT Standard Classification	<ul style="list-style-type: none"> • Modeling Standard
Data Format	<ul style="list-style-type: none"> • Graphical modelling language

Relations to other standards	<ul style="list-style-type: none"> • extension of UML • leverages XML for data exchange of SysML models
Overlap with other standards	<ul style="list-style-type: none"> • none
Available accompanying documentation (Software vendors)	<ul style="list-style-type: none"> • Modeling methodologies (Harmony-SE¹, OOSEM², SysMOD³, FAS-Method⁴...) • Many web information resources, e.g. <ul style="list-style-type: none"> • OMG⁵SysML⁶ Knowledge Base⁷ • SE Body⁸of⁹ Knowledge¹⁰
Available accompanying documentation (Industry Users)	<ul style="list-style-type: none"> • Use Cases, Guidelines, Best Practice Examples • Literature (Books, Scientific Papers) • Best Practices
Available accompanying documentation (Management)	<ul style="list-style-type: none"> • ...

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Additional Resources

1 <http://www.omgwiki.org/MBSE/doku.php?id=mbse:harmonyse>

2 <http://www.omgwiki.org/MBSE/doku.php?id=mbse:incoseoossem>

3 <http://model-based-systems-engineering.com/sysmod/>

4 http://fas-method.org/fas.core.en/guidances/supportingmaterials/overview_fas_DF8F5399.html?nodeId=4d8c1ebd

5 <http://www.omgsysml.org/>

6 <http://www.omgsysml.org/>

7 <http://www.omgsysml.org/>

8 http://sebokwiki.org/wiki/Representing_Systems_with_Models

9 http://sebokwiki.org/wiki/Representing_Systems_with_Models

10 http://sebokwiki.org/wiki/Representing_Systems_with_Models

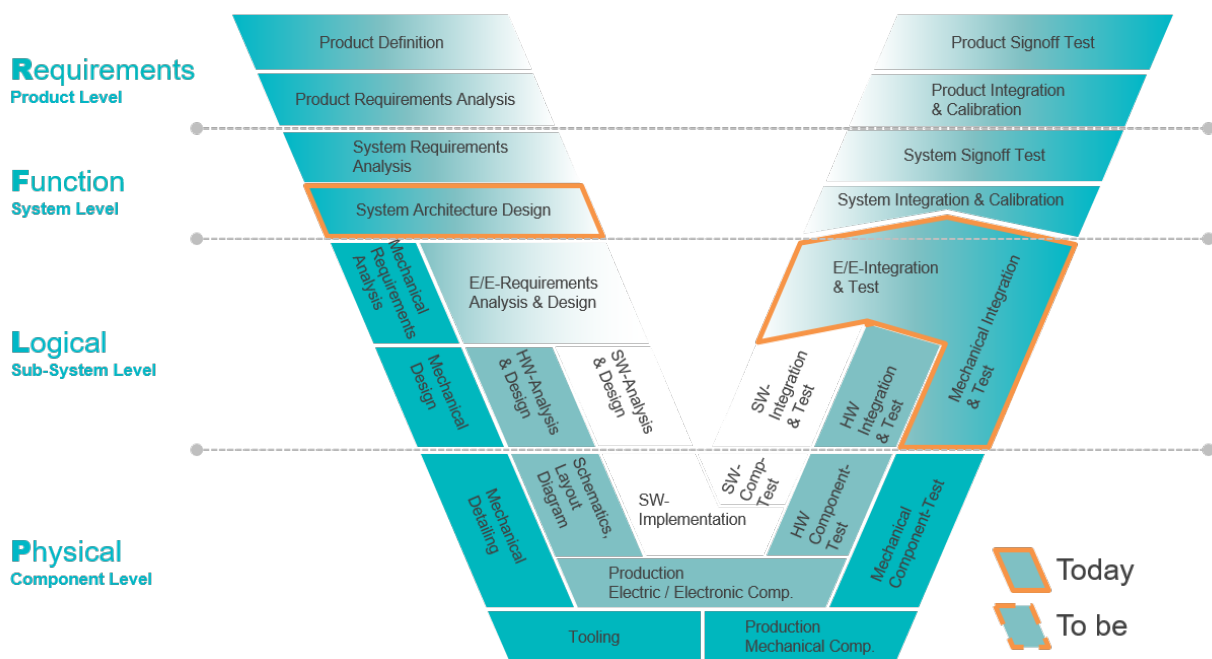
1 What is the contribution of especially this format/ standard to Systems Engineering and/ or Collaboration:

- **Simplify** the model creation with SysML as a basis for **visualization, complexity management and better handling of product views** due to the product life cycle.
- **One industry-wide SysML profile** to address many areas of common interest such as **Automotive Regulatory Requirement & Verifications, Automotive Structures, Automotive Feature definitions, Risk Management** (-FMEA, Functional Safety, Fault Tree analysis), integrated Dynamical Analysis and Optimization, ALM and PLM Integration
- The Automotive Domain is witnessing rising SysML and MBSE adoption to cope with the pace of change -especially with Mechatronics seemingly entering every feature of the automobile.
- An Automotive SysML profile accepted by the industry is not known to exist
- If collaboration is not enabled, practitioners within the domain will create adhoc profile extensions and fragment the space.
- Competing profiles that conflict within the same domain are a failure mode that will impede accelerated adoption of SE in general.
- SE practitioners in a particular domain do become more efficient by extending the base SysML standard to meet their needs

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Positioning of SysML in V-Model



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- The relevance of SysML for SE/MBSE is ...

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Additional Resources

. 2 What happens if we do nothing

- Software vendor solutions that will lock Auto OEMs into proprietary products not based on standards.
- Major and lower tier suppliers unable to support diverging OEM proprietary standards without adding significant time and cost which eventually gets shared with the OEMs.
- Supplier requirements not considered → no collaboration possible

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Additional Resources

Datei	Geändert
 image2019-10-2_10-51-47.png ¹¹	Nov. 11, 2020 by Peter Tabbert ¹²
 Positioning of SysML in V-Model.png ¹³	gestern um 9:34 vorm. by Peter Tabbert ¹⁴
 Fact Sheet_ Systems Modeling Language (SysML).pdf ¹⁵	vor weniger als einer Minute by Peter Tabbert ¹⁶

¹¹ https://intranet.prostep.org/download/attachments/20283980/image2019-10-2_10-51-47.png?api=v2

¹² <https://intranet.prostep.org/display/~petertabbert>

¹³ <https://intranet.prostep.org/download/attachments/20283980/Positioning%20of%20SysML%20in%20V-Model.png?api=v2>

¹⁴ <https://intranet.prostep.org/display/~petertabbert>

¹⁵ <https://intranet.prostep.org/download/attachments/20283980/>

[Fact%20Sheet_%20Systems%20Modeling%20Language%20%28SysML%29.pdf?api=v2](https://intranet.prostep.org/download/attachments/20283980/Fact%20Sheet_%20Systems%20Modeling%20Language%20%28SysML%29.pdf?api=v2)

¹⁶ <https://intranet.prostep.org/display/~petertabbert>