

|                            | Capella/ Arcadia   | SYSMOD   |
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| Tool                       | <ul style="list-style-type: none"> <li>• Open-source (Eclipse Public License - EPL)</li> <li>• <a href="#">Add-Ons/Viewpoints</a> extend Capella with additional features <ul style="list-style-type: none"> <li>○ Requirements Viewpoint for ReqIF-import and traceability</li> <li>○ Export functions for Word and other formats</li> <li>○ Integration with other PLM and MBSE tools</li> <li>○ Property Value Management with the PVMT</li> <li>○ Etc.</li> </ul> </li> <li>• Possibility to build your own add-ons using <a href="#">Capella Studio</a></li> </ul>  | <ul style="list-style-type: none"> <li>• <a href="#">Profiles</a> for various modeling tools available, e.g., Cameo Systems Modeler, Enterprise Architect</li> <li>• Possibility to implement a SYSMOD-profile and use it with any tool that is conform to the SysML-specification</li> </ul>  |
| Language, Method & Process | <ul style="list-style-type: none"> <li>• High integration of language, methods, processes, and tool. <ul style="list-style-type: none"> <li>○ Capella is the modeling tool, it fully supports Arcadia which contains the modeling language, method, and process.</li> <li>○ The Arcadia modeling language is SysML-oriented, this means that it uses similar concepts. (For a detailed comparison check blog part I)</li> <li>○ The Arcadia processes and methods provide a built-in abstraction mechanism for the different layers of analysis and architecture. The System Analysis and Logical and Physical Architecture processes are obligatory. The Operational Analysis and EPBS Architecture are optional. (For a detailed comparison see blog part II)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• SYSMOD is language-agnostic but it is recommended to use it with SysML</li> <li>• The SYSMOD modeling concepts are very generic so they can be used to describe Arcadia elements. For example: <ul style="list-style-type: none"> <li>○ The SYSMOD System Objectives can be used as Arcadia System Missions, but they can also be used to describe the Operational Missions on the OA-Level</li> <li>○ The System Context in SYSMOD can be abstracted to the Arcadia Contextual System Actors [CSA] diagram, but also be detailed to the Arcadia Contextual Detailed Interface [CDI] diagram</li> </ul> </li> <li>• SYSMOD enables a high-level of freedom. Depending on your project requirements you are free to choose what methods you need and how your process should look like <ul style="list-style-type: none"> <li>○ The concepts are very generic and support different levels of abstraction</li> </ul> </li> </ul> |
| Customization, Adoption,   | <ul style="list-style-type: none"> <li>• Advantage of Capella is that it is a ready to use tool for modeling. It provides the Activity Browser to guide through the process. Each process step contains specific diagrams with a customized</li> </ul>   | <ul style="list-style-type: none"> <li>• SYSMOD is a toolbox or collection of well-known and good MBSE-practices. This enables a wide variety of possibilities:</li> </ul>   |

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| <p>Training and Roles</p> | <p>palette. Small customization of the tool, language and method is required to get started</p> <ul style="list-style-type: none"> <li>• This can enable a steep learning curve and reduce the resistance to change, as there is no in-depth knowledge of tool, method and language customization required</li> <li>• But still you cannot get started without training of the concepts and the integration of Capella/ Arcadia into the existing toolchain and processes</li> </ul> | <ul style="list-style-type: none"> <li>○ Following kind of a "Pick what you need"-approach you can pick specific methods to integrate them in your existing process</li> <li>○ It is also possible to do "Follow the process". This means you can use SYSMOD as a comprehensive MBSE methodology</li> <li>○ But as always it is more important to master the craftsmanship rather than blindly following the process</li> <li>• SYSMOD provides MBSE roles, e.g., the MBSE Methodologist or System Architect. It also supports with customization and adoption guidelines, e.g., how to pick and customize the methodology</li> </ul> |
| <p>Conclusion</p>         | <ul style="list-style-type: none"> <li>• It is ready-to-use with little up-front customization effort and guides through the analysis and architecture activities with a clear path</li> <li>• <u>But</u> it restricts the freedom to choose and customize because of its high-level of integration. For customization profound knowledge of the Eclipse environment (EMF) is required</li> </ul>  | <ul style="list-style-type: none"> <li>• It is modular and generic and enables different levels of abstraction</li> <li>• <u>But</u> at least some amount of customization is needed which requires additional knowledge and up-front work</li> </ul>   |