

A Solutions based approach to MBSE architectures with UPDM and SysML

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Abstract. UPDM is the Unified Profile for DoDAF and MODAF. The UPDM specification was developed by a diverse group of tool vendors, end users, academia, and government representatives. UPDM enjoys the full support of the DOD and MOD and is a DoD mandated standard. The UML/SysML foundation improves the integration between architectural framework modeling and system modeling to support post acquisition life-cycle design and implementation. This tutorial provides an overview of SysML, a brief introduction to how UPDM will provide a standard means of expressing DoDAF and MODAF using SysML and UML, an overview of the UPDM views and viewpoints and language concepts, and selected sample problems to demonstrate how the language can be used. Following this, the course will proceed to demonstrate how the MBSE foundation of UPDM can provide the answers to problems found in projects: How to avoid the problems of stovepipe development? How to ensure that systems deployment is in line with capability deployment requirements? How to effectively use MBSE to provide trade-off analysis? How to transition from a system of systems to systems development? How to ensure system interfaces are compatible? How to communicate with non-experts? How to reuse architectures? How to integrate requirements management into modeling? Rather than proceed in a mechanistic fashion through the different UPDM views, the course instead concentrates on the benefits of the framework using a solutions-based approach.

Biography

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Matthew Hause is Atego's Chief Consulting Engineer, the co-chair of the UPDM group and a member of the OMG SysML specification team. He has been developing multi-national complex systems for almost 35 years. He started out working in the power systems industry and has been involved in military command and control systems, process control, communications, SCADA, distributed control, and many other areas of technical and real-time systems. His roles have varied from project manager to developer. His role at Atego includes mentoring, sales presentations, standards development and training courses. He has written a series of white papers on architectural modeling, project management, systems engineering, model-based engineering, human factors, safety critical systems development, virtual team management, systems development, and software development with UML, SysML and Architectural Frameworks such as DoDAF and MODAF. He has been a regular presenter at INCOSE, the IEEE, BCS, the IET, the OMG, DoD Enterprise Architecture and many other conferences. Matthew studied Electrical Engineering at the University of New Mexico and Computer Science at the University of Houston, Texas. In his spare time he is a church organist, choir director and composer.