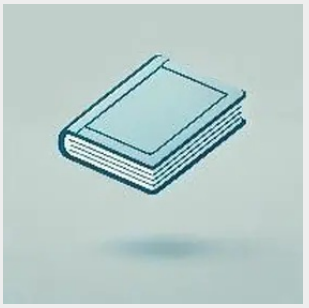
Friedenthal / Seidewitz / Koning

Modeling Systems with Sysml V2

The Systems Modeling Language



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Whether you have previous experience modeling with SysML v1 or are new to modeling with SysML, Modeling Systems with SysML v2: The Systems Modeling Language provides the understanding and guidance to help you gain a basic level of competency in SysML v2, prepare for SysML v2 certification, and advance your modeling skills over time. SysML v2 is the next generation systems modeling language that can be used to model complex systems that span a wide range of application domains. It provides the ability to specify requirements, behavior, structure, analysis, and verification of interacting systems and their components while maintaining traceability across the system model. SysML v2 enhances the precision, expressiveness, consistency, usability, extensibility and interoperability of systems modeling. It provides both graphical and textual notations that facilitate stakeholder understanding and enable modern practices with agile workflows. SysML v2 is also supported by a standardized application programming interface (API) that facilitates interoperability across digital engineering tools and models. The formal semantic and syntactic foundation for SysML v2 enables technologies such as artificial intelligence (AI) with large language models (LLM) to interact with the SysML model. The combination of SysML v2's textual notation and standard API, along with a formal foundation and consistent usage patterns, facilitate automation to support model validation, workflow enhancements, and integration with other models and tools. This book provides a comprehensive and practical guide for modeling systems with SysML v2. With their unique perspective as leading contributors to the language, the authors provide a full description of the language along with examples that help you understand how to apply the language concepts. The book begins with an introduction to the most commonly used features to help you get started quickly followed by a detailed description that provides you with a more in-depth understanding. The book also includes a detailed example of applying model-based systems engineering with SysML v2 to specify and design an unmanned aerial system.

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