

Systems Modeling Language Version 2 (SysML v2)

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Discussion

Systems Modeling Language Version 2 (SysML v2) is the second major generation of SysML. OMG developed SysML v2 to provide a more precise, expressive, interoperable, and extensible foundation for model-based systems engineering.

- SysML v2 supports graphical and textual representations of the same underlying model. Its language constructs represent system requirements, structure, behavior, interfaces, constraints, analysis cases, verification cases, metadata, and relationships among model elements.
- SysML v2 separates the abstract language model from its concrete graphical and textual syntaxes. This separation supports consistent interpretation of model content across conforming tools and representations.
- SysML v2 also operates with the Systems Modeling Application Programming Interface and Services specification. That companion specification supports access to, navigation of, querying of, and controlled interaction with SysML v2 model repositories. The language specification and API and Services specification serve related but distinct purposes.

Within FDIS-RA, SysML v2 provides a formal modeling language for expressing the platform-independent architectural model. It supports the representation of architectural elements, responsibilities, ports, interfaces, flows, constraints, behaviors, governance relationships, and traceability.

Definition

Second major generation of SysML providing formally defined graphical and textual languages for modeling systems.

Source

- Object Management Group, Systems Modeling Language version 2.0, <https://www.omg.org/spec/SysML/2.0/>
- Object Management Group, SysML v2 Language Specification
- Object Management Group, SysML v2 API and Services Specification

Note

SysML v2 is not merely a revision of SysML v1 notation. It introduces a redesigned language architecture and semantic foundation.

Use of SysML v2 does not, by itself, establish conformance with FDIS-RA. A model must represent the architectural responsibilities, constraints, interfaces, governance mechanisms, and conformance provisions defined by FDIS-RA.

Example

An FDIS-RA platform-independent model may use SysML v2 to represent an interpretation component, its input and output ports, the port interfaces realized by those ports, the stream elements exchanged across feeds, and the governance constraints applied through the control plane.

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