



INCOSE IW 2023

DoD, SysML V2 Transition Guidance

Workshop

January 30th, 2023
4:00pm-6:00pm

CLEARED
For Open Publication

Jan 20, 2023

Department of Defense
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SLIDES ONLY

NO SCRIPT PROVIDED

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January 30th, 2023

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Category: [Category]
Distribution: A
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Introductions

- This event is sponsored by OUSD R&E DEM&S.
- We are looking where SysML V2 fits into the overall DE strategy that the office is responsible for.
- Working with the services to develop guidance
- This effort is just beginning and we are looking for input from the community to understand what guidance would be useful.
- As we develop there will be further opportunities to give input.
- Can be more generally applicable.
- This is not a SysML v2 session. We are assuming you have prior knowledge.
- As a reference look in the DE Themed 2022 INSIGHT publication for the paper entitled "Systems Modeling Language (SysML v2) Support for Digital Engineering"



Agenda

- 4:00-4:30: Set the Stage
 - Introductions
 - Context for SysML V2 Transition Guide
 - DE current state & future state
 - How MBSE with SysML V2 can support the DE future state
 - "Project Name"/Purpose, approach, key milestones
 - Breakout guidance
- 4:30-5:30: Breakout Sessions
 - Breakout 1: Acquisition Perspective
 - Breakout 2: Supplier Perspective
- 5:30-6:00: Breakout Session Out-briefs (15 minutes each)



DE Current State and Future State

- **Current State:**
 - DE Training course was released in 2017 followed by release of the DoD DE Strategy in 2018.
 - DE implementation varies across DoD services and Industry
 - Policy, Guidance, and Standards are evolving
 - DE is being included in solicitations
- **Future State as defined by DoD DE Strategy and Vision**
 - Models and other digital artifacts are fully integrated
 - Provides the authorities source of truth for programs and across the enterprise
 - The workforce and culture collaborates using models
 - Technology Innovation continuously improves the practices across the Defense Acquisition Lifecycle



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- Future State as defined by DoD DE Strategy and the INCOSE SE Vision 2035
 - Models and other digital artifacts are fully integrated
 - Provides the authoritative source of truth for programs and across the enterprise
 - The workforce and culture collaborates using models
 - Technology Innovation continuously improves engineering practices, cross domain coherence, and user experiences from product concept thru to disposal



The Future of Systems Engineering is Model-Based

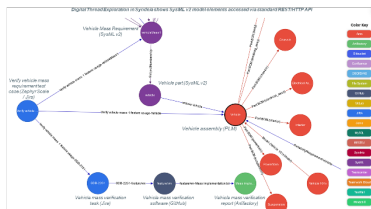
- Part of the digital transformation
- Full life cycle from SoS to component level
- Agile system development including automated workflow and CM of the digital thread
- Model patterns and reuse
- Facilitates
 - managing complexity & risk
 - more rapidly respond to change
 - reuse and design evolution
 - reasoning about & analyzing systems
 - shared stakeholder understanding
 - automated documentation & reporting



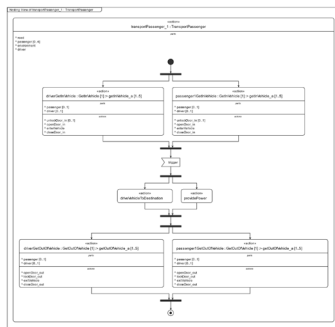
Source: INCOSE SE Vision
2035



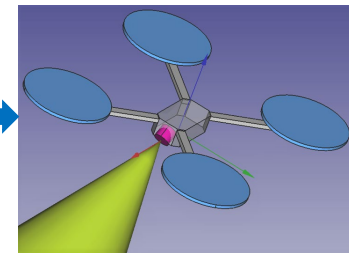
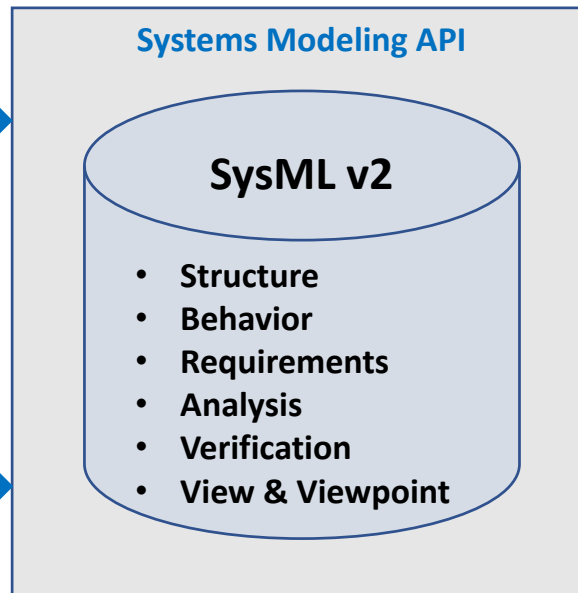
Connecting SysML v2 through the API



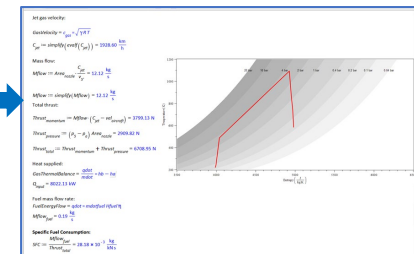
PLM/Version Mgmt
Source: Syndeia with SysML v2



Graph Visualization
Source: Tom Sawyer with SysML v2



CAD/CAD Viewer
Source: FreeCAD with SysML v2



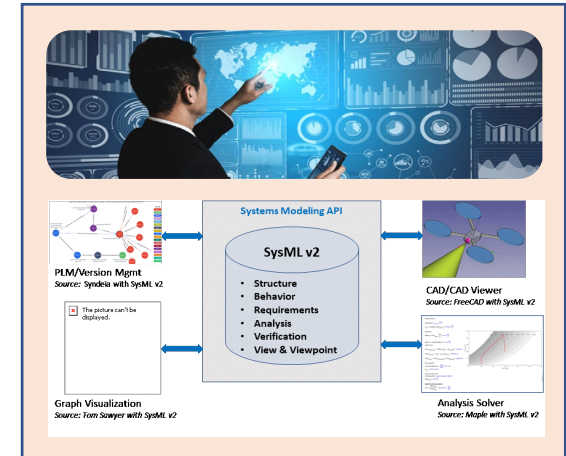
Analysis Solver
Source: Maple with SysML v2



DoD SysML V2 Transition Guide: Project Overview

Purpose:

Systems Engineering has transformed to a model based practice. It has achieved so much, and needs to continue to mature. SysML V2 is a change to how business is being done today. Guidance will help with this change. Getting in front of this change early before it is on top of us presents an opportunity to do better and to achieve more.



Milestones

- Dec 2022 Kickoff
 - Jan 2023 Workshop
 - Mar 2023 OMG
 - Dec 2023 DRAFT Guidance
 - Mar 2024 Final Release
- } Driven by OMG acceptance of SysML V2.0

Deliverables

- Guidance Documentation
- Presentations
- TBD



Breakout Session Guidance

- What kind of transition guidance would be useful from an acquisition perspective & from a supplier perspective?
 - Who is the guidance targeted to?
 - What will be impacted?
 - When to transition?
 - How should the guidance be provided/delivered?
 - ...
- Breakout into an acquisition group and a supplier group
- Present 15 minute out-brief at 5:30pm