



AI-age Systems Engineering Suite: Build Superior Products much Faster

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Paradigm change is due in Systems Engineering

Problem:

Established ways of doing Product/Systems Engineering:

- **highly manual & inexact**
- **slow & costly**

System definitions not machine interpretable & executable, tools slow & costly, siloed.

Solution:

1) Concept

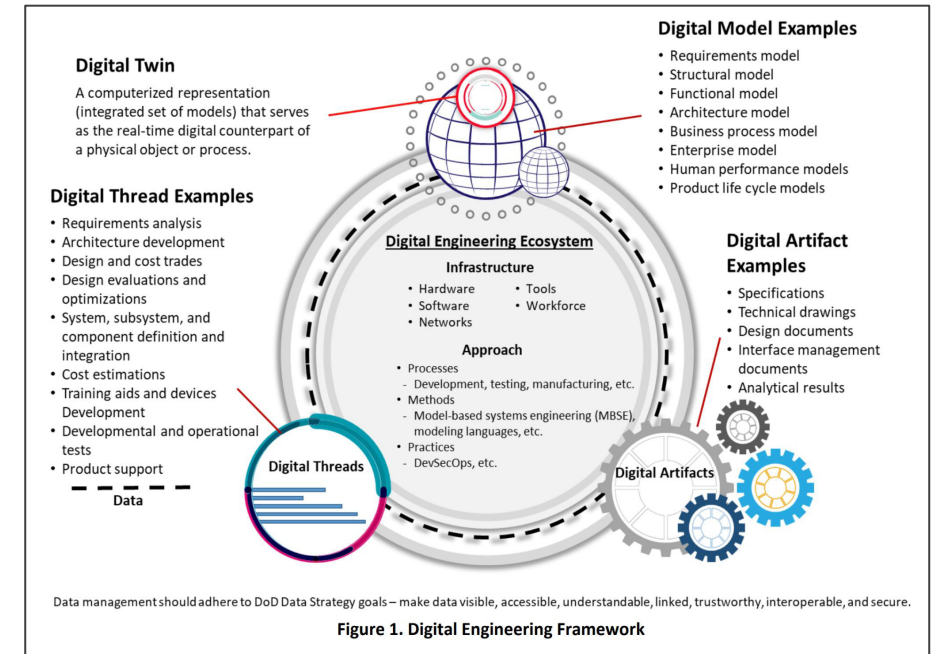
Make computers to do the work as in modern Software/Agentic Engineering (aligns with DoD 5000.97)

2) Technology proposal (our recipe)

Paradigm: **System as Code** (rigorously human-/machine-interpretable -> automatable)

Language: **SysML v2** for **S**ystems **M**odeling **L**anguage, **v**ersion **2**

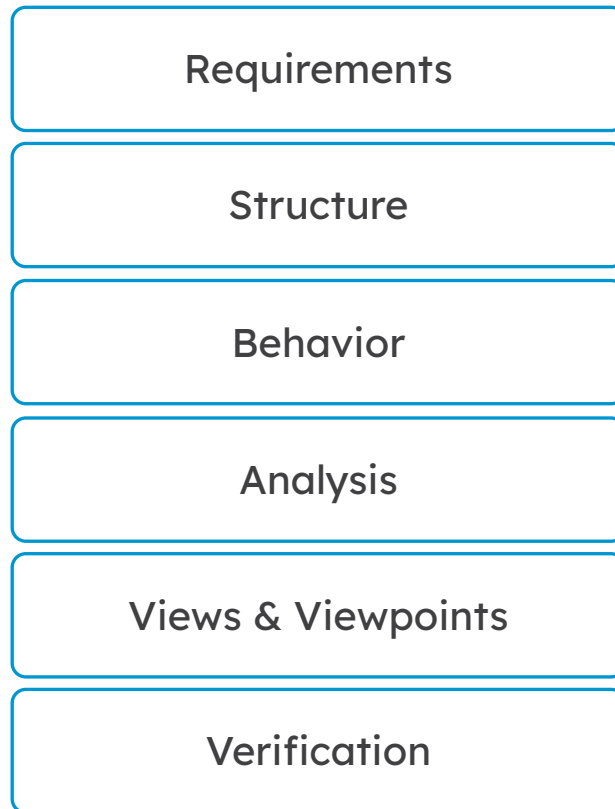
Tool suite: **Syside** for **S**ystems **I**ntegrated **D**igital **E**ngineering



SysML v2: rigorous, unifying lang. for Systems Engineering

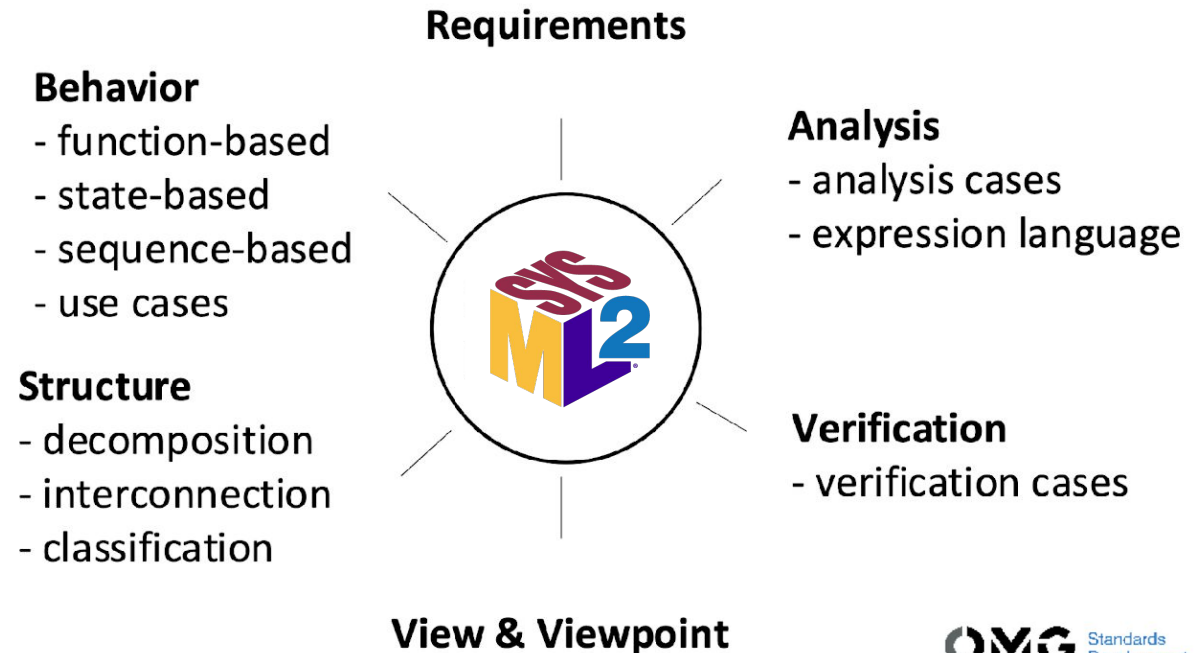
Past

Disintegrated data,
non-interoperable tools



Future

Single source of truth in rigorous language 'as code',
interoperable ecosystem without vendor lock-in



Sensmetry is an active developer of SysML v2 & related standards through the OMG.

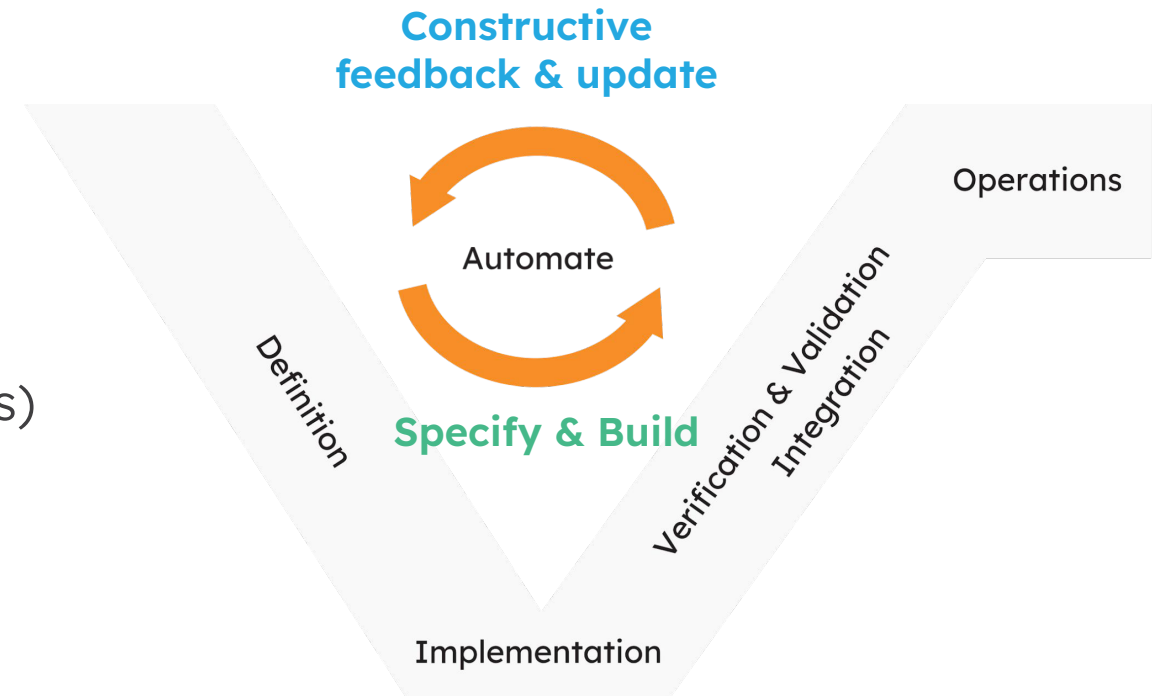
Syside automates Sys. Eng. activities with SysML v2 & AI

Syside is

- most *modern, performant, and flexible* Systems Engineering tool suite,
- for organizations to *unlock unlimited automation* potential across the lifecycle (let agents/computers do Sys. Eng. work),
- utilizing Software Engineering & DevOps SOTA practices for Systems Engineering (Git, CI/CD, Agentic AI, reproducible builds)

Goal: ultimate iteration speed

from system spec. update to prototype or system update & back in no time



Syside offers tools & support enabling internal capability

Comprehensive SysML v2 tool suite for AI-age Systems Engineering

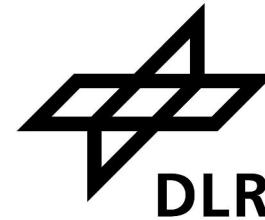
Pro Suite		Free	
Professional SysML v2 tools for Digital Engineering		Essential SysML v2 tools for community innovation	
Modeler	Automator	Editor	Sysand
Modeling environment Author, validate, analyze models effectively – as code, as diagrams, or as editable tables, supported by AI <u>Available within:</u>  Visual Studio Code  CURSOR CLI	SysML v2 engine/SDK Generate, update, & analyze models, optimize designs, automate workflows, CI/CD, build custom applications <u>Available within:</u>  python™ CLI	Textual editor Essential support for SysML v2 textual modeling <u>Available within:</u>  Visual Studio Code  CURSOR	Package manager Create, share, and use SysML v2 libraries, collaborate effectively <u>Available at:</u>  CLI sysand.com

Capability-building & tool-use support: team enablement & tool use support services based on enterprise needs.

Specialized solutions: for Solutions/Service providers, Tool Vendors, System Integrators & Operators, Educators.

Sensmetry products at Space, Defense & Automotive leaders

Used by Industry Leaders, Incl.



and many more...

Used at Leading Academic Institutions. Incl.



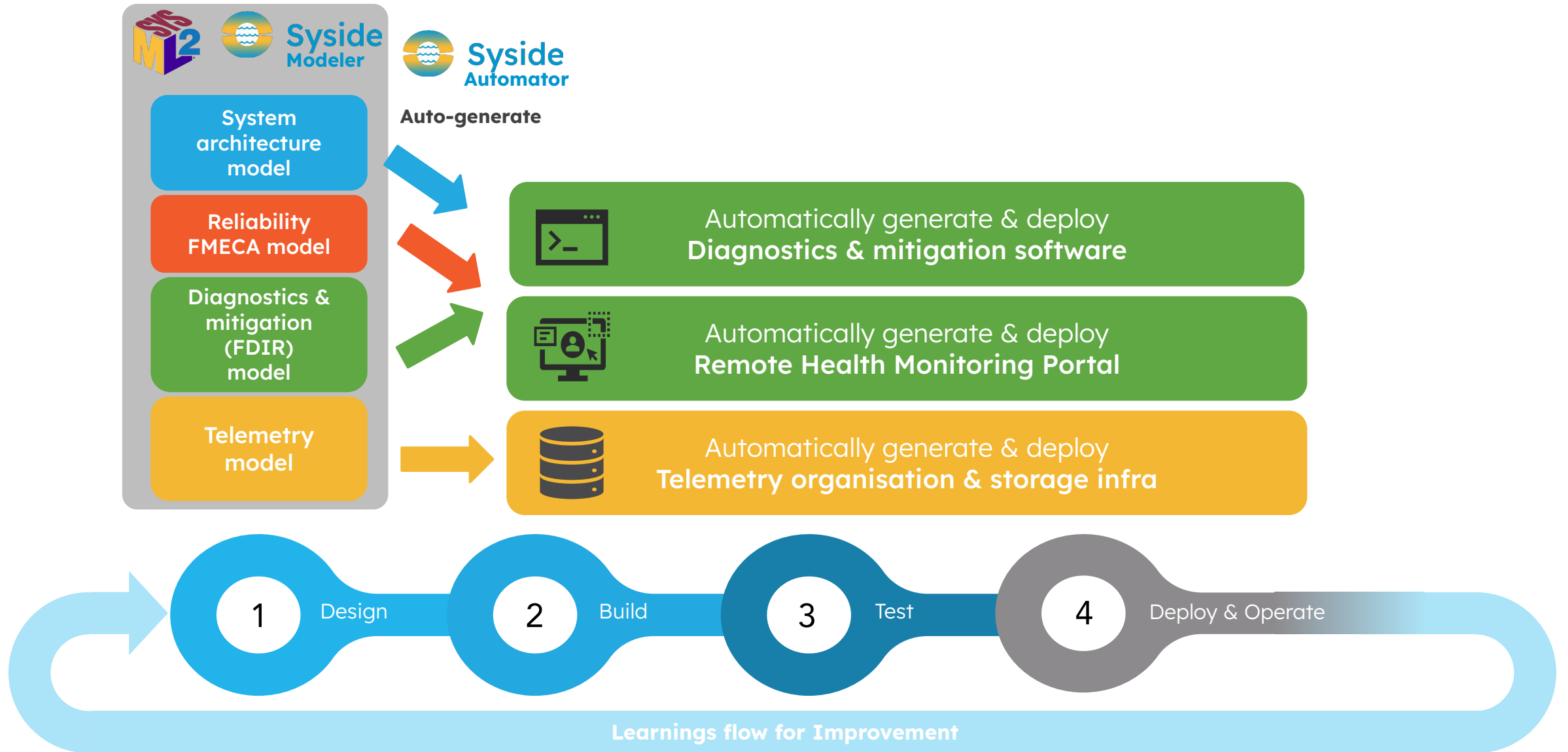
Real-world case studies

Sensmetry: SatCom constellation Digital Twins across the lifecycle

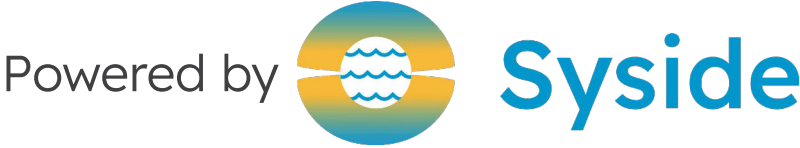
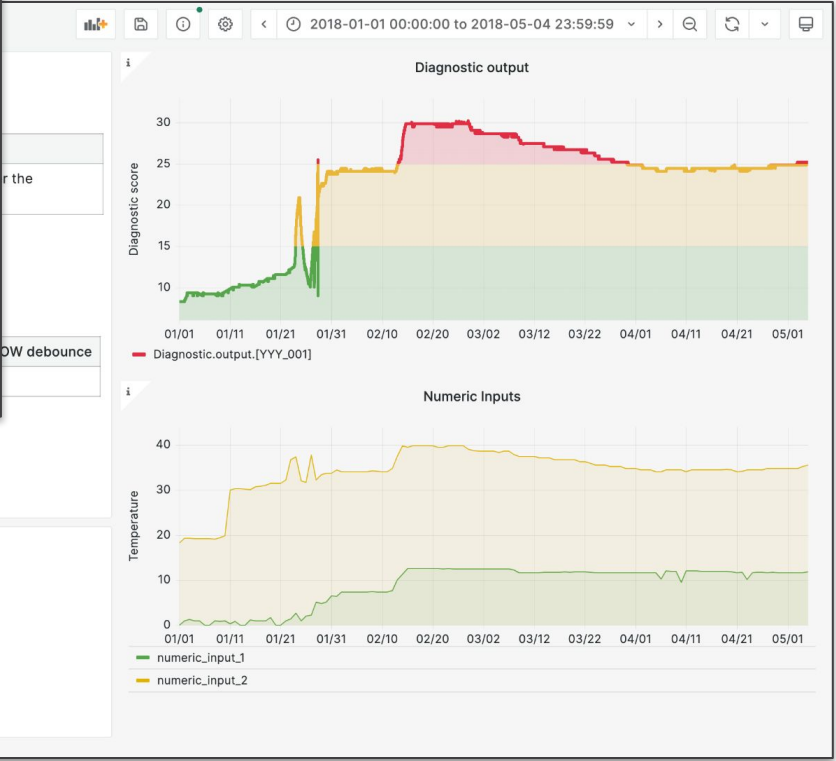
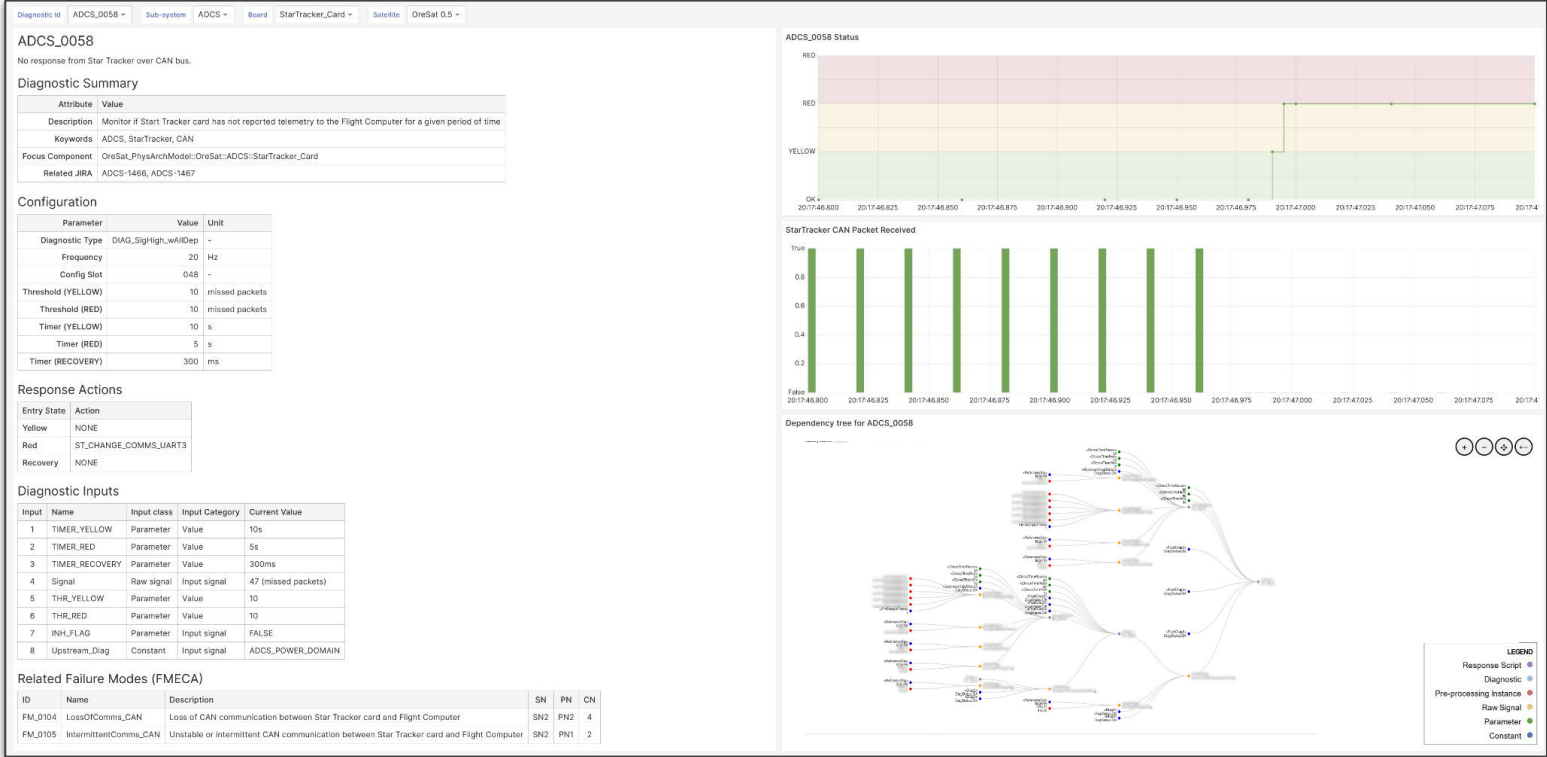
Sensmetry - for SatComms global leader

Digital Twins for satellite constellation devel. & operations,
deployed & used on an operational production-stage constellation

Sat. Constellation Development & Operations Digital Twin



Operational Digital Twin: auto-generated, all info integrated



Outcome: much leaner & faster development & maintenance

One integrated model-based Digital Twin for architecture, design, risk management, mission operations, and live telemetry – from first satellite to full constellation

50%+

effort reduced, no specialists needed

System monitoring digital twins generated automatically from high-level spec, instead of being maintained by hand by specialists. Flight Operations Engineers manage all updates.

90%

faster design-update-to-deployment

Versus manual deployment without the auto-updating digital twin, from a model change to updated ops tooling in the field.

6+ months

faster time-to-market

Operational diagnostics, monitoring, and telemetry infrastructure generated automatically and in parallel directly from the model instead of being built separately.

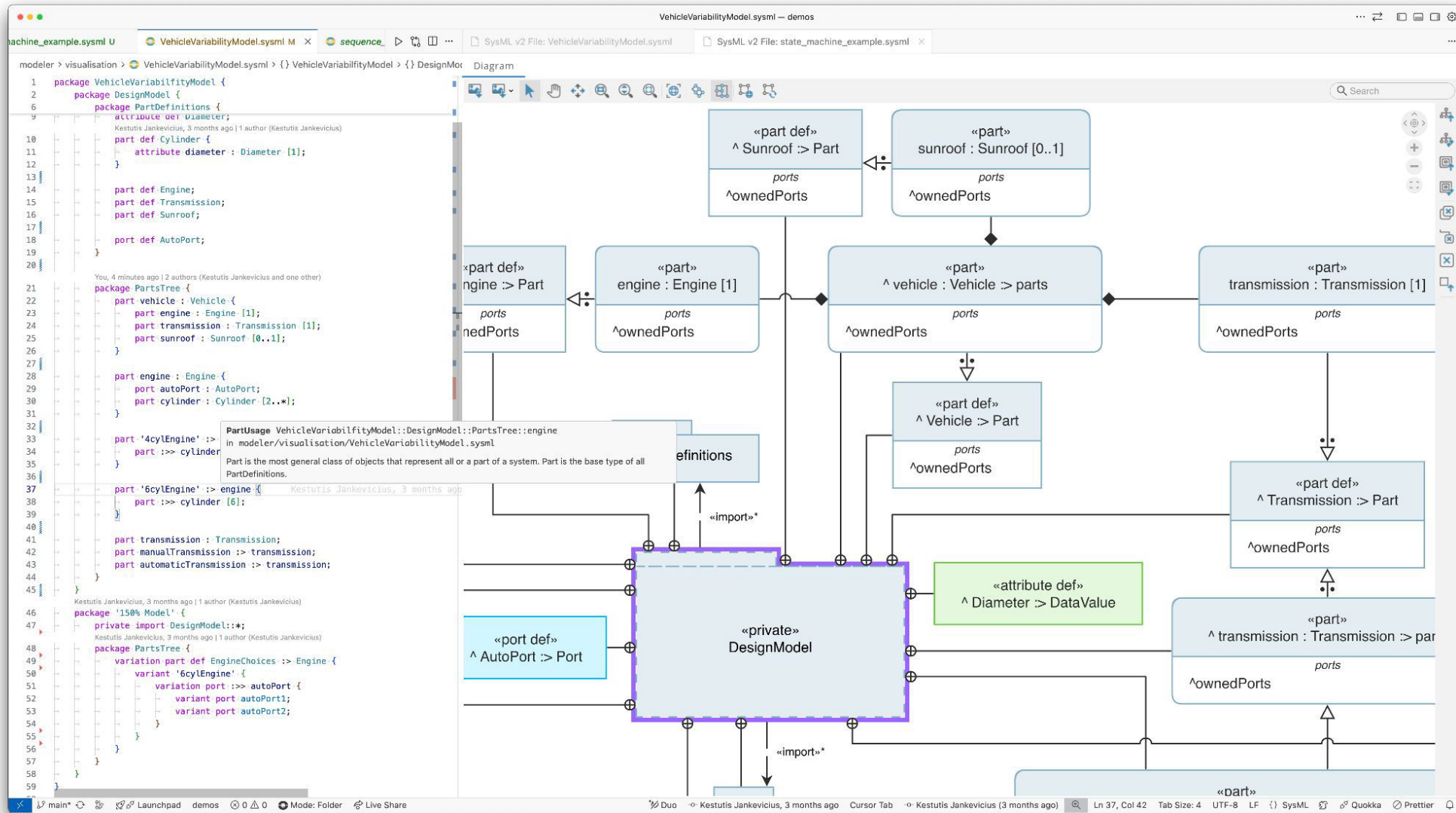
Built to scale: same digital twin investment carries from 1 satellite to hundreds, without re-architecting or growing the support team.

Why for time-critical programs? The same architecture, safety, reliability, and telemetry models & ops infra used for the prototype applies to production system as well — allowing immediate progression from prototype to large-scale production system deployment.

Customer validation: *Constellation Program Manager endorsement is available upon request.*

Syside Demonstration

Syside: diagram views support



Syside: editable table views support

The screenshot displays the Syside IDE interface. On the left, a SysML model is open, showing a package hierarchy with 'Algorithmic Trading Requirements' and 'Stakeholder Requirements'. The right pane shows an editable table view for 'requirementSetA_0'. The table has four columns: Summary Name, Description, Require Constraint, and Assigned. It lists various requirements for an ADAS system, including perception, camera, and radar subsystems. A context menu is visible over the table, offering options like 'View Row Details', 'Go to Row Element', and 'Go to Cell Element'. The bottom status bar indicates the current mode is 'Folder' and shows a 'Live Share' button.

Summary Name	Description	Require Constraint	Assigned
Requirement Set A: Vehicle ADAS	Top-level demo requirements for a vehicle ADAS system.	The ADAS system shall satisfy the perception, planning and control, driver interaction, and safety requirements defined in the lower-level groups. Additional	The hostable 1 chassis chancica mountin
Group 1: Perception	Perception subsystem that senses and interprets the vehicle environment.	The perception subsystem shall provide the planning subsystem with a reliable, time-synchronised representation of the environment.	n/a
Subgroup 1: Camera	Forward, surround, and camera capabilities.	Camera subsystem shall provide colour images of the vehicle surroundings suitable for object detection and lane marking estimation.	Ambien 1 lux or pensate conditio
Requirement: Forward Camera Resolution	Minimum pixel resolution for the forward camera.	The forward camera shall provide a minimum resolution of 1920 x 1080 pixels.	n/a
Requirement: Frame Rate	Frames per second delivered by the forward camera.	The forward camera shall deliver frames at a rate of at least 30 fps under nominal operating conditions.	n/a
Requirement: High Dynamic Range	HDR imaging to handle strong illumination contrast.	The forward camera shall provide HDR imaging with a dynamic range of at least 120 dB.	n/a
Requirement: Lens Cleanliness Detection	Detect blocked or soiled lens and notify the driver.	The camera subsystem shall detect impaired visibility of the camera lens and raise a cleaning request within 3 seconds of onset.	n/a
Requirement: Night Vision Support	Low-light operation with infrared assist.	The camera subsystem shall detect pedestrians at ranges of at least 60 m under low-light conditions (below 10 lux).	n/a
Subgroup 2: Radar	Short-, mid-, and long-range radar capabilities.	The radar subsystem shall detect objects within the host vehicle path and report range, velocity, and azimuth.	n/a

How people get Syside — and stay plugged in

GET SYSIDE

Free

Anyone curious or getting started. SysML v2 textual notation only. Install Syside Editor from the VS Code marketplace.

Solo

Individual professionals. Full Pro Suite for one user. Start a trial on the pricing page at syside.sensmetry.com.

Business

Teams and enterprises. On-prem, floating licenses, support, training — email zygimantas.gelbuda@sensmetry.com.

Academia

Researchers, students, universities. Free. Fill in the form on the pricing page.

Teaching SysML v2?

Industry teachers, consultants. Give your class browser based, zero-install Syside at syside.cloud.

BE PART OF COMMUNITY

Learn SysML v2 for Free

The Advent of SysML v2. **25-lesson training**, at your own pace. Go to advent.sensmetry.com

Ask questions

Community forum for SysML v2 and Syside. **Actual practitioners**, searchable answers – forum.sensmetry.com

Don't start from scratch

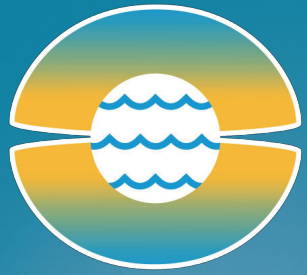
Docs and a growing **list of examples**. From auto-generated reports to automated checks like "are all ports connected?" – docs.sensmetry.com

Use community models

Upload and share SysML v2 models. Pull reusable libraries into your project, like pip or npm – sysand.org

Join our events

System as Code Fest, trainings, YouTube. Where the community gathers in person and online. Follow us on LinkedIn!



Syside



Sysand

Automate Systems Engineering with SysML v2

Come to

syside.sensmetry.com
sysand.com

& start using for free

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