

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich

**We didn't make the wind
just the sails.**

The Glimpse! Future of Engineering

REConf 2026, Munich



Tim.Weilkiens@oose.de

oose.

*Warning:
May contain traces of SysML.*



3



4

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich

**We didn't make the wind
just the sails.**

The Glimpse! Future of Engineering

REConf 2026, Munich

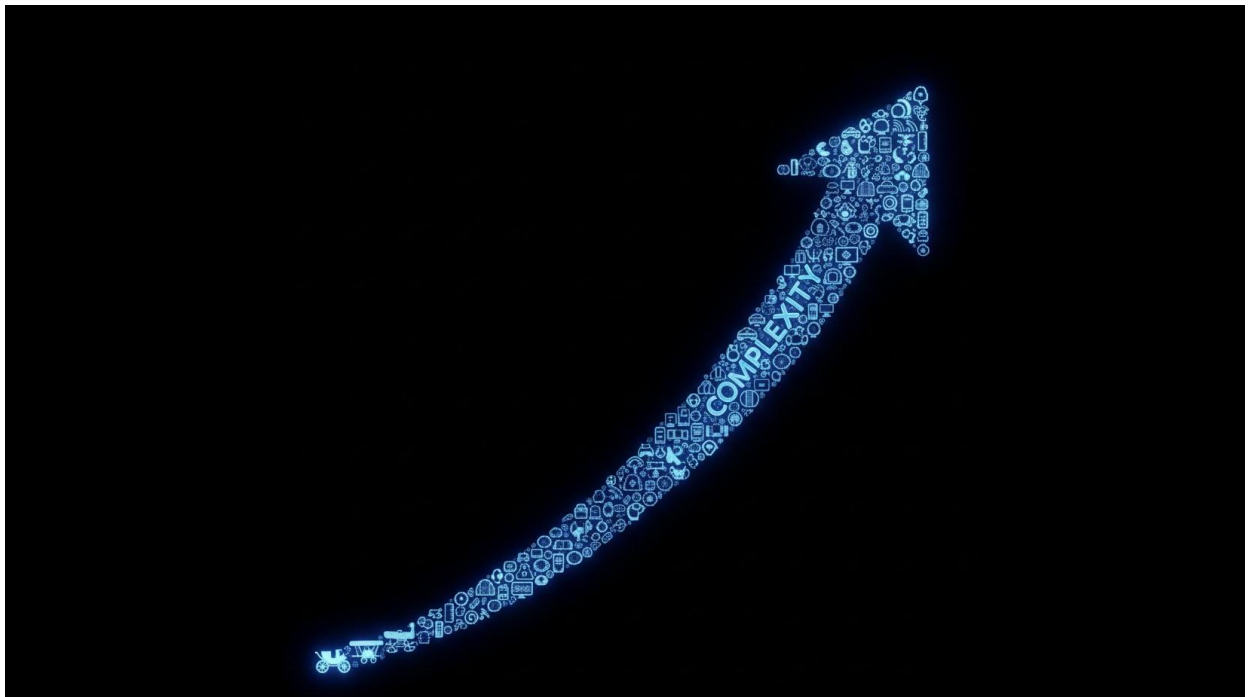


Tim.Weilkiens@oose.de
oose.

*Warning:
May contain traces of SysML.*



5



6

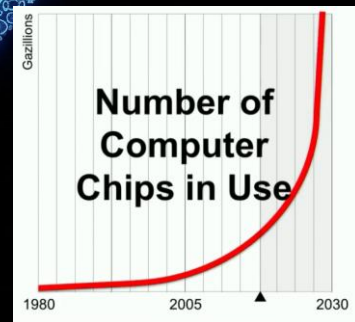
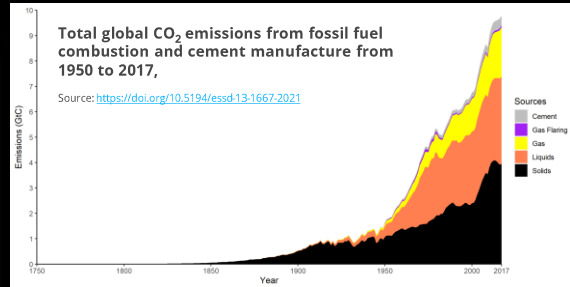
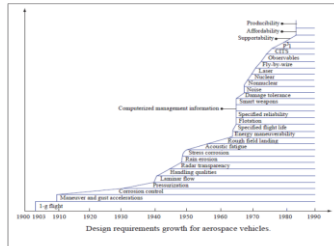
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich

Requirements Explosion since 1970s

More and more requirements were added as systems grew in performance and complexity



7



28th Annual INCOSE
International symposium

Washington, DC, USA
July 7 - 12, 2018

The Big Shift: Innovation and Systems Engineering

Source: <https://www.youtube.com/watch?v=XpB6wYc0E00>



Langdon Morris

Senior Partner
INNOVATIONLABS LLC



8

The Glimpse – Future of Engineering

Tim Weilkiens

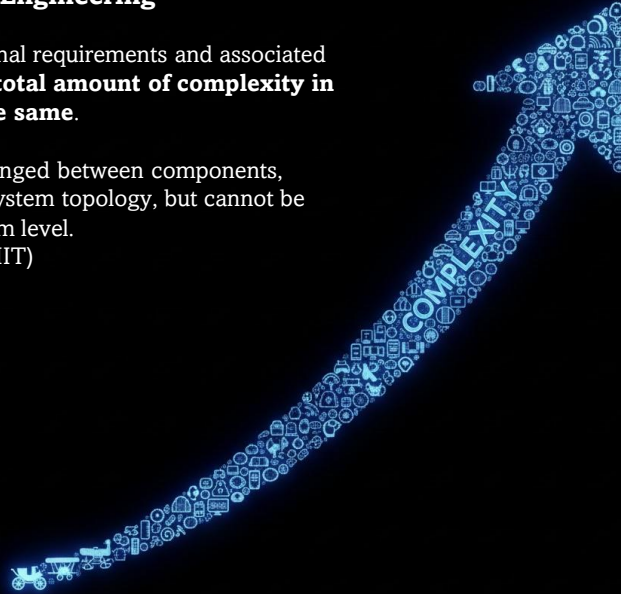
Keynote REConf 2026, Munich

1st Law of Systems Engineering

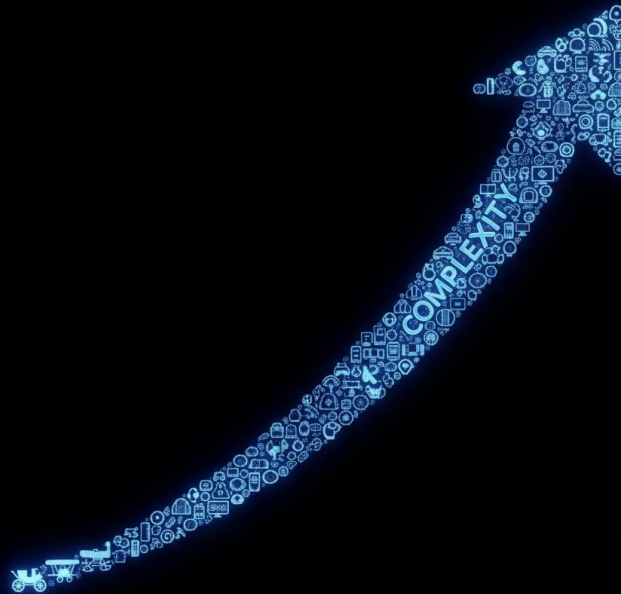
For a given set of functional requirements and associated performance levels, **the total amount of complexity in the system remains the same.**

Complexity can be exchanged between components, their interfaces and the system topology, but cannot be reduced below a minimum level.

(Prof. Olivier de Weck, MIT)



9

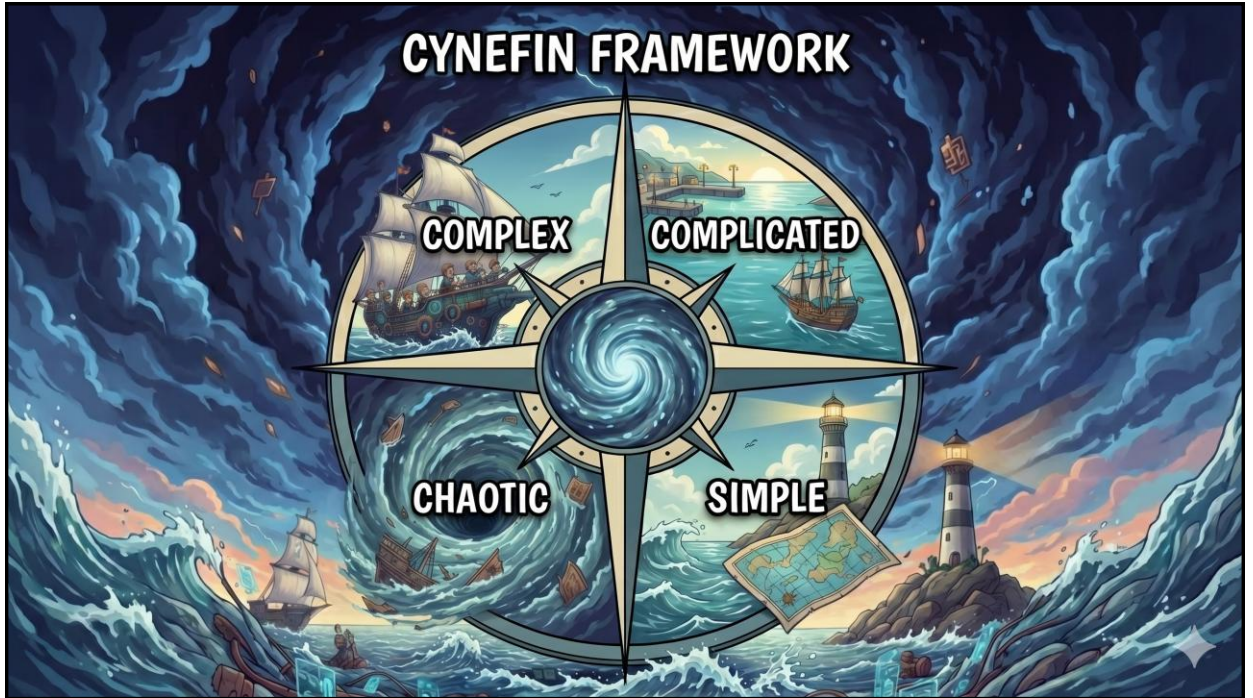


10

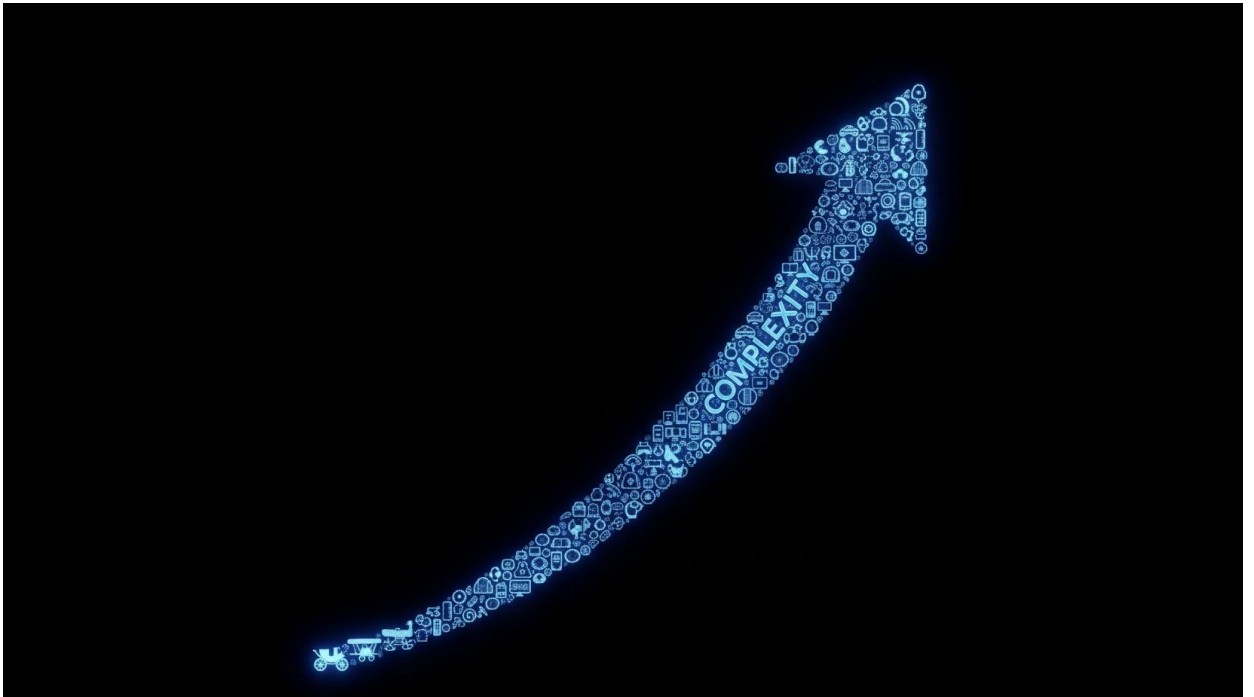
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



11

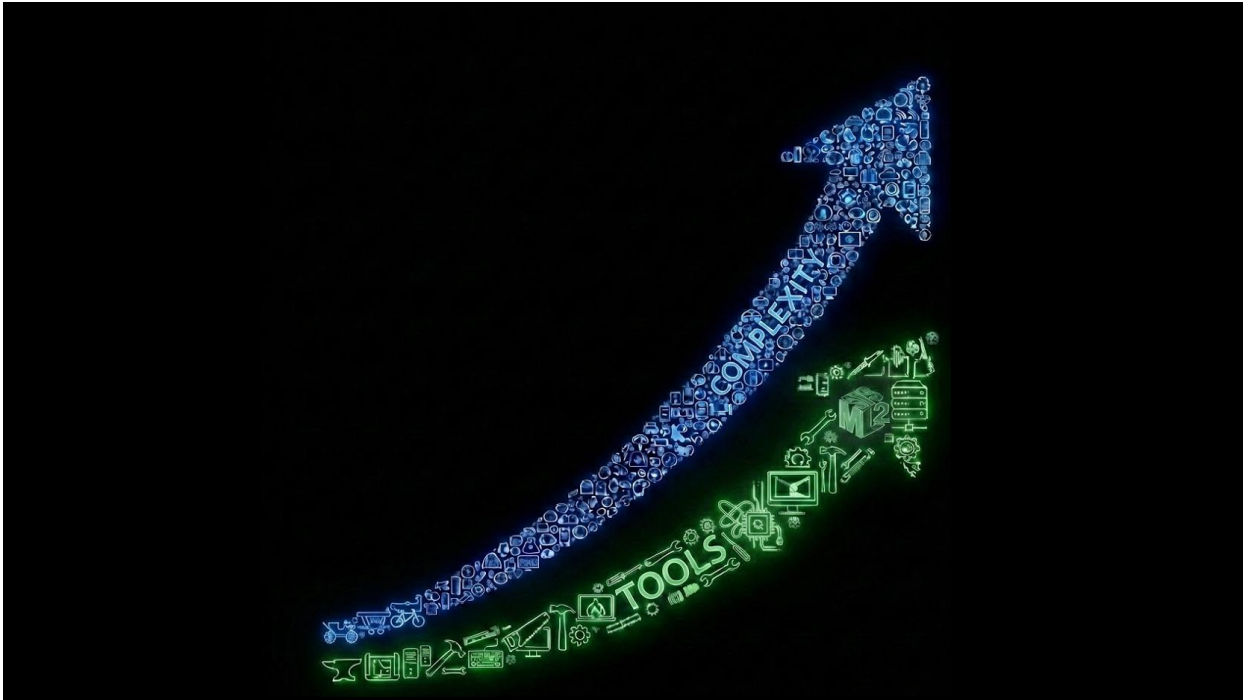


12

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



13



14

**How quickly can a society
develop and adapt?**

versus

**How quickly should a society
develop and adapt?**

15

How quickly can a society develop and adapt?

versus

How quickly should a society develop and adapt?

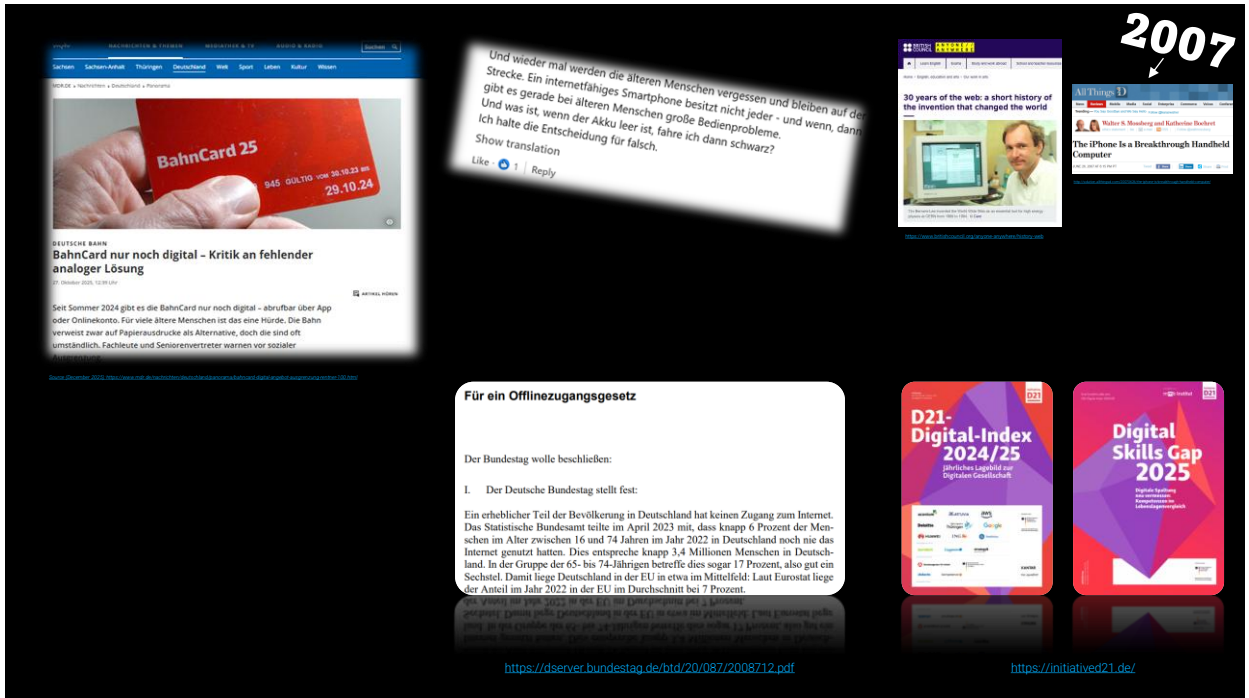


16

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



17

„Alles [...] ist jetzt ultra, alles transzendiert unaufhaltsam, im Denken wie im Tun. Niemand kennt sich mehr [...]. Reichtum und Schnelligkeit ist was die Welt bewundert und wonach jeder strebt; [...] alle möglichen Fazilitäten der Kommunikation sind es worauf die gebildete Welt ausgeht, sich zu überbieten, zu überbilden und dadurch in der Mittelmäßigkeit zu verharren.“

Goethe in einem Brief an Carl Friedrich Zelter, 1825

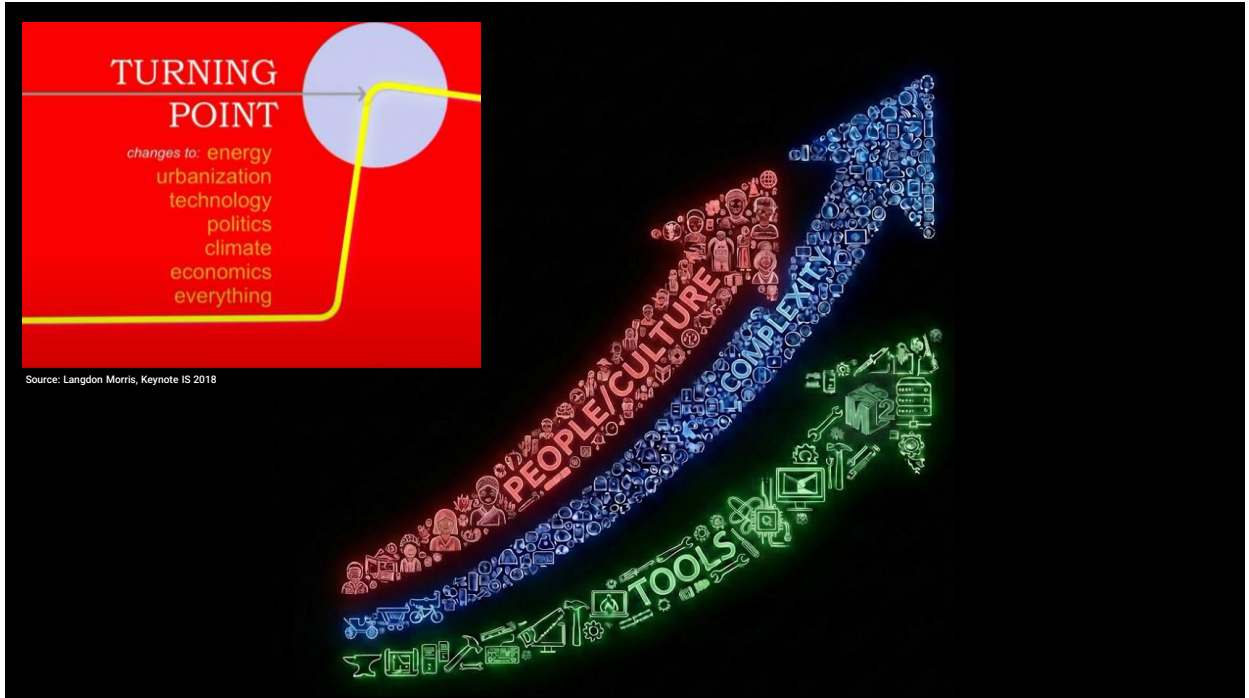


18

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



19

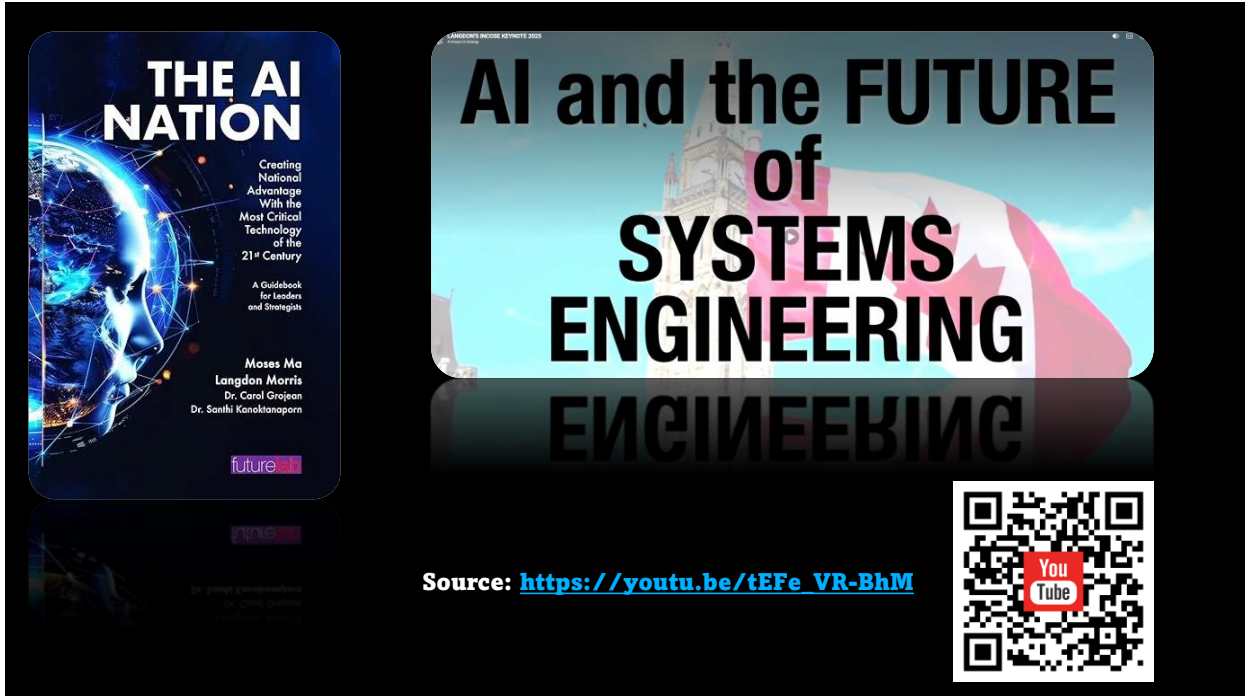


20

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



21

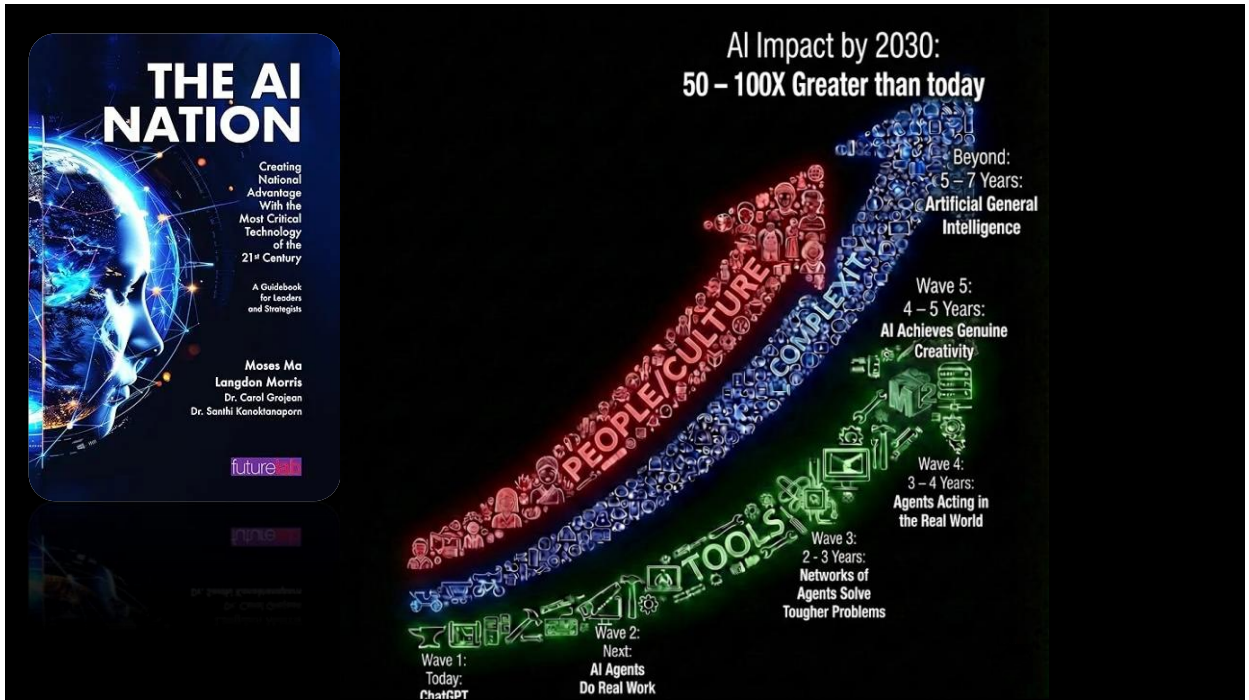


22

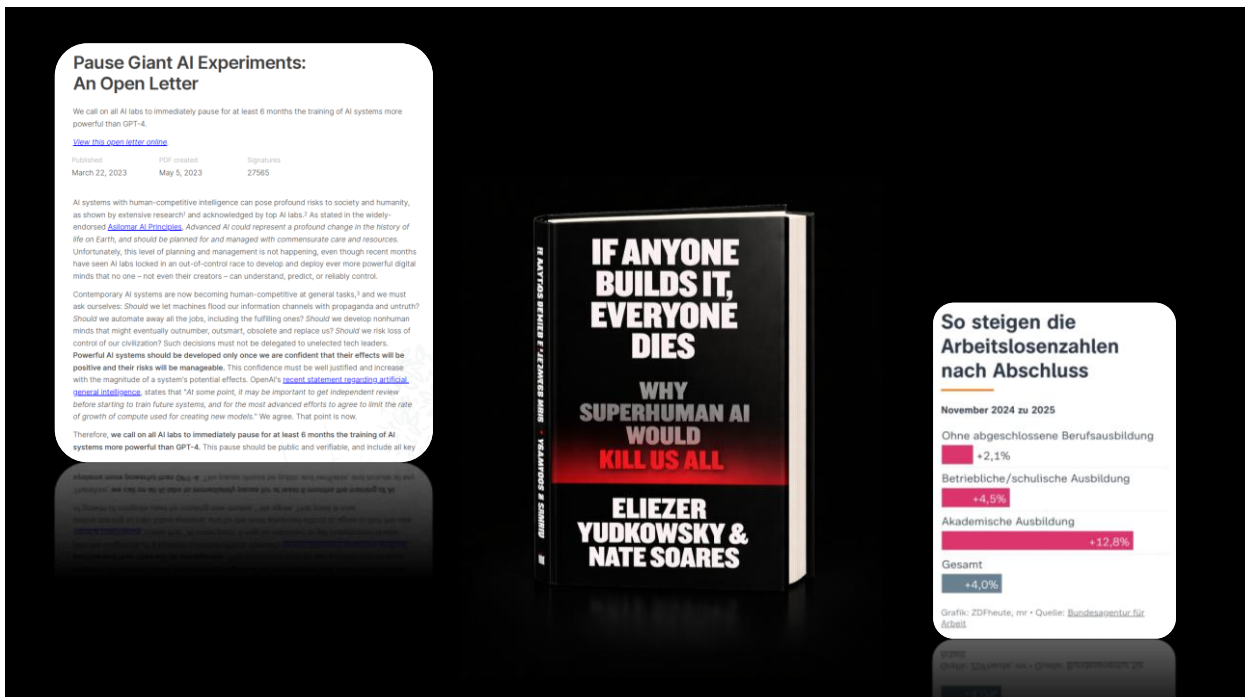
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



23



24

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



25



26

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



27



28

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich

The Future of Engineering will be AI-assisted/driven!

More of this...

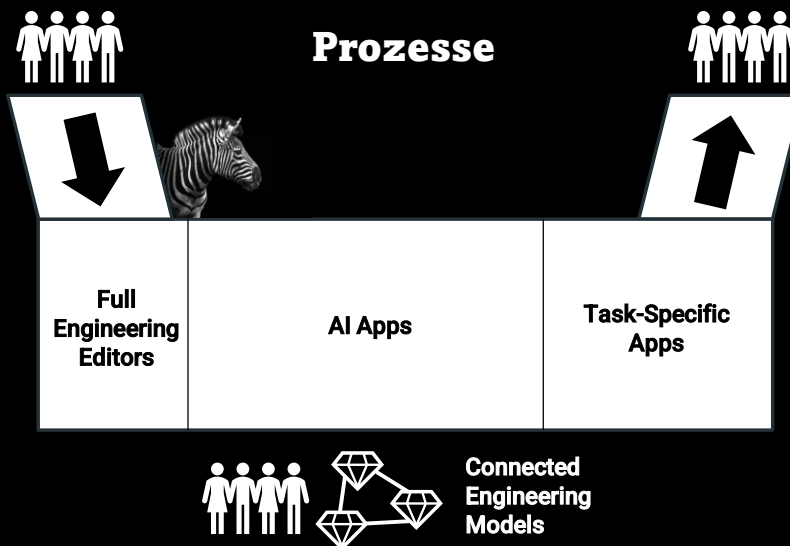
Enter your prompt here...

Less of this...



29

The Future of (MBS)Engineering Sketch



30

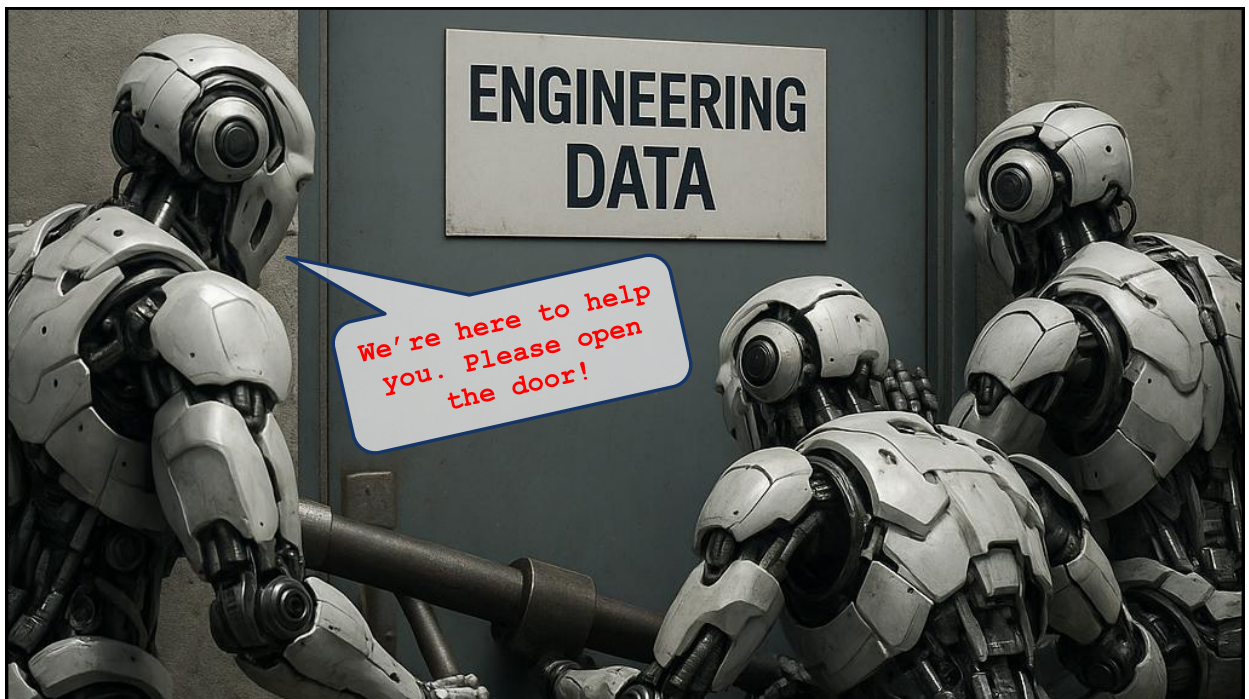
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



31

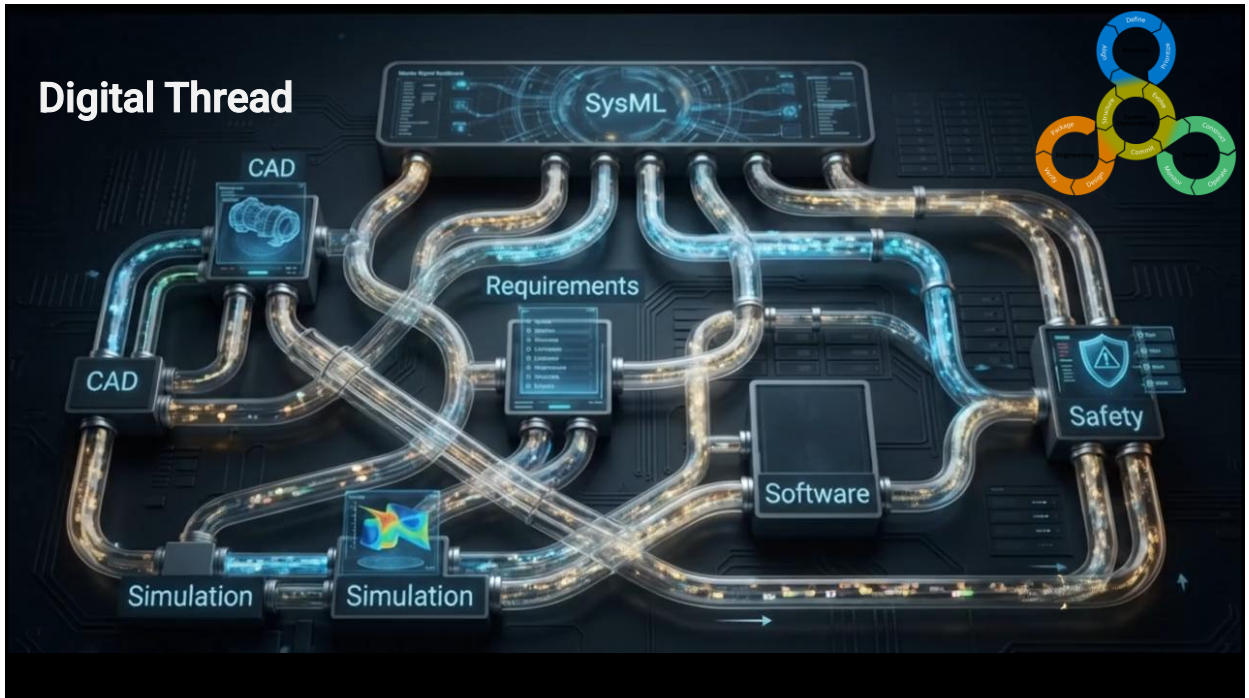


32

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



33



34

The Glimpse – Future of Engineering

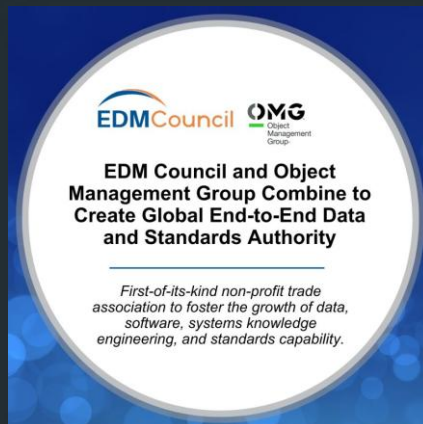
Tim Weilkiens

Keynote REConf 2026, Munich



35

Who is responsible for SysML?



www.omg.org/spec
www.omg.org/spec/sysml

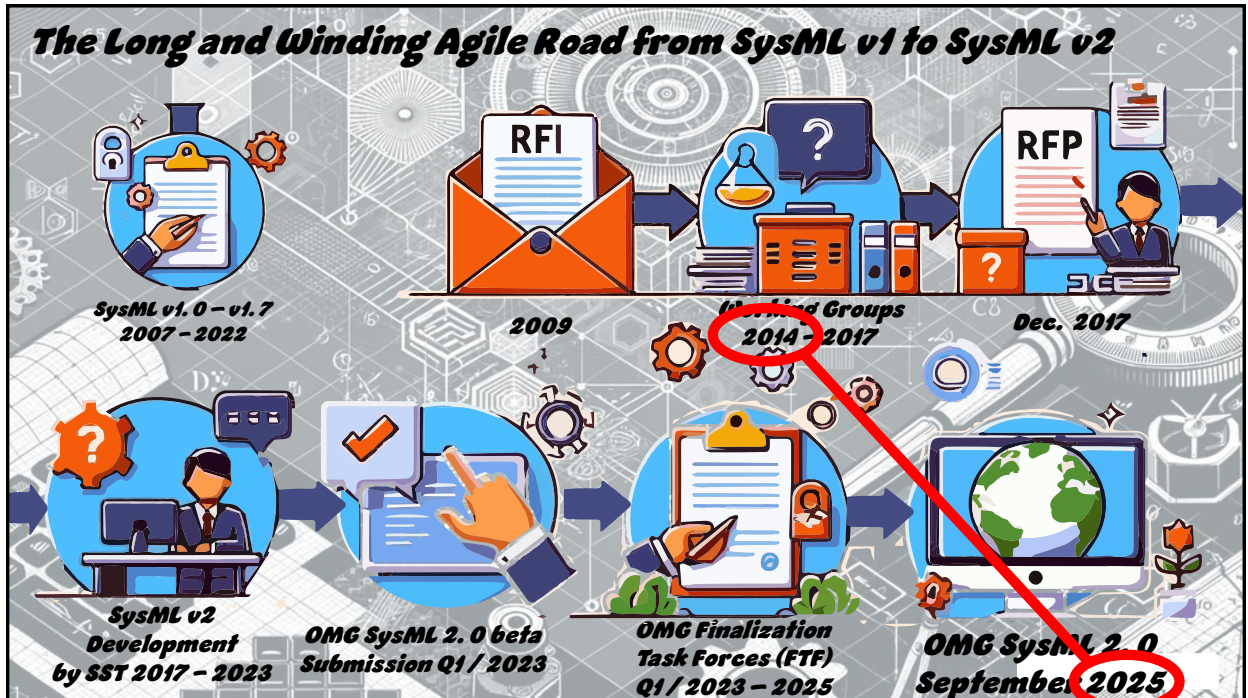


36

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



37



38

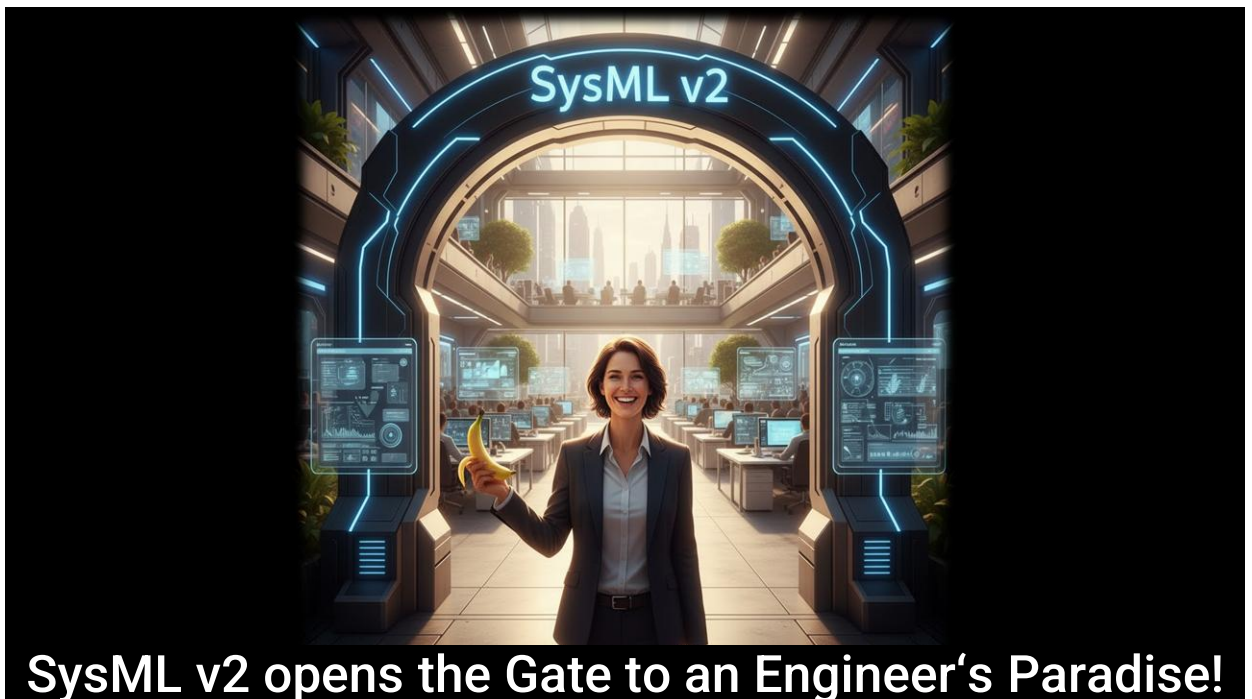
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



39



SysML v2 opens the Gate to an Engineer's Paradise!

40

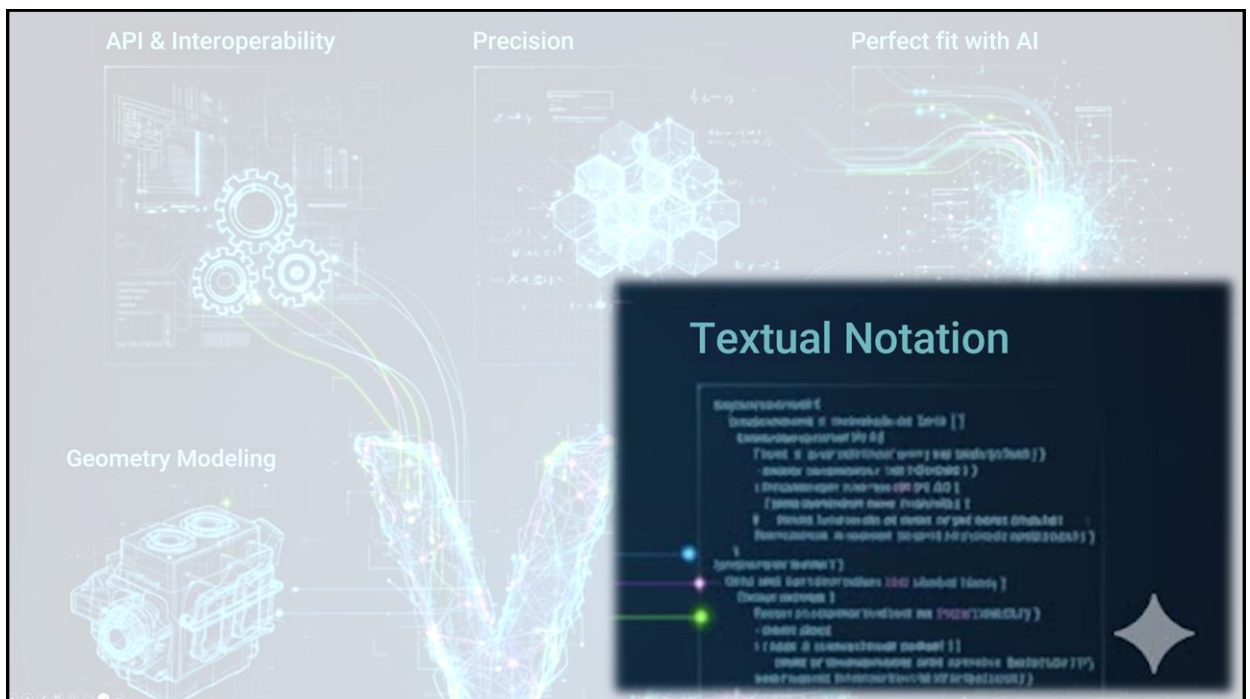
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



41

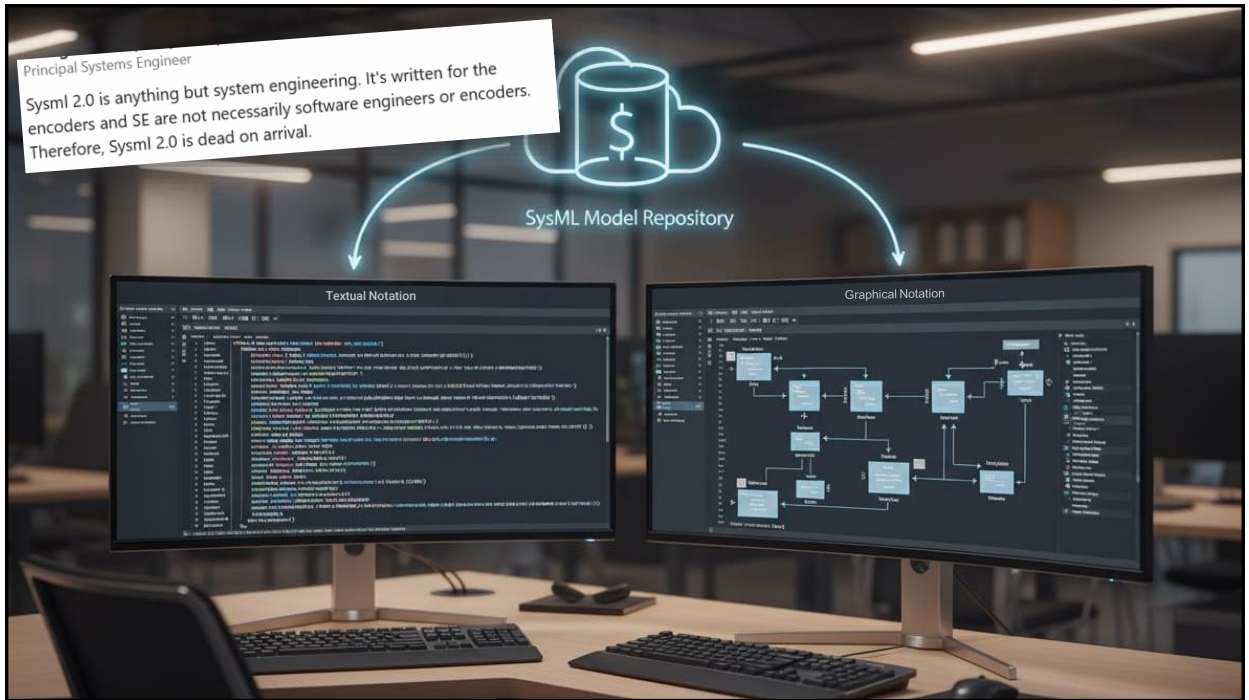


42

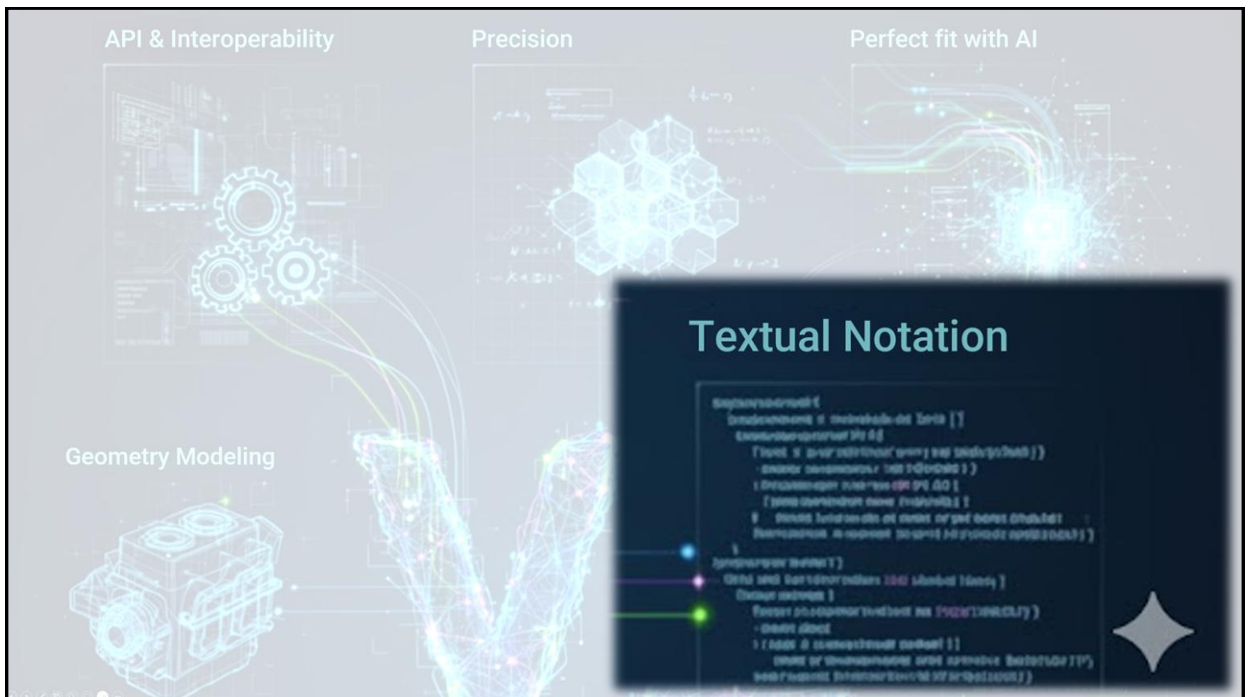
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



43



44

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



45

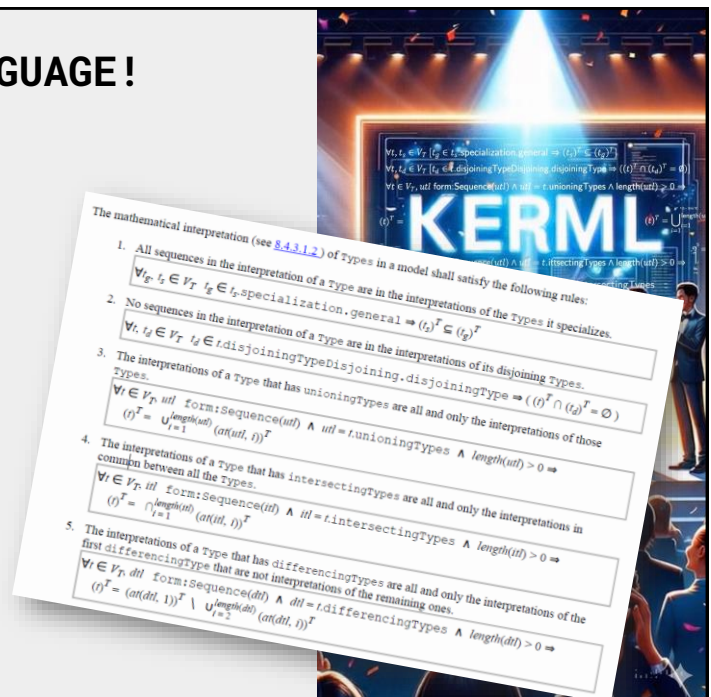
KERNEL MODELING LANGUAGE!

KerML is the new foundation
for SysML v2!

KerML is based on mathematics.

Built from the scratch;
Learned from the past.

SysML v2 is not based on UML!



46

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



47

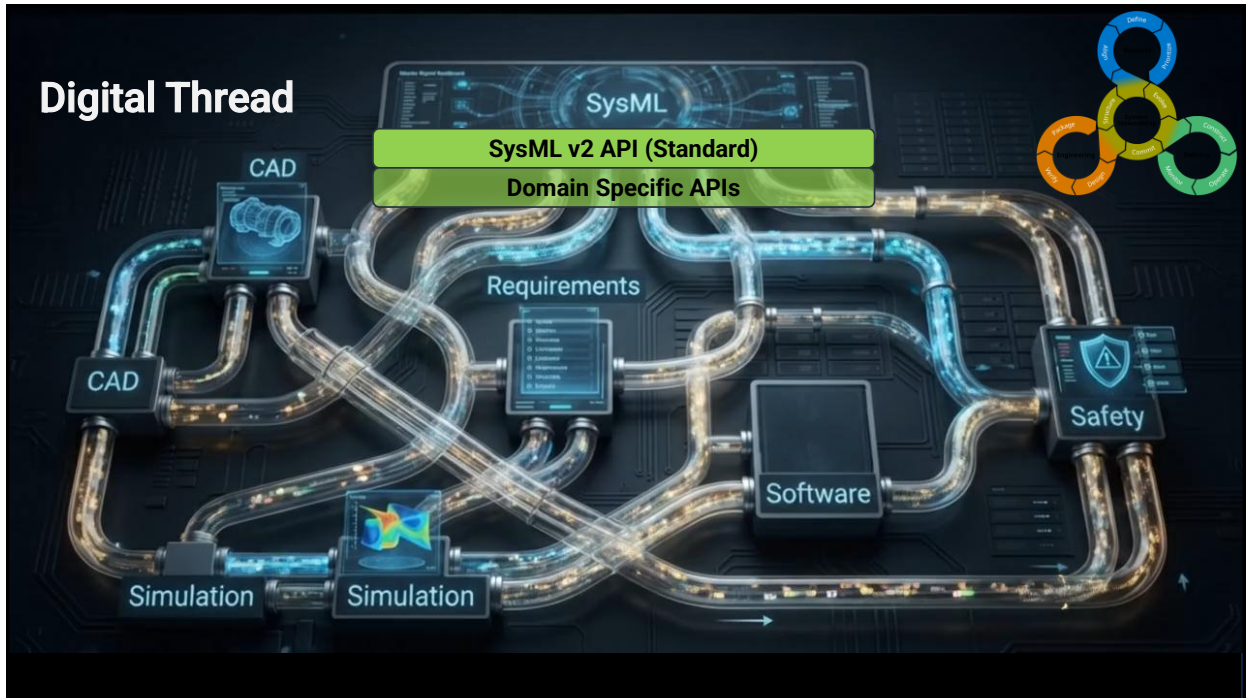


48

The Glimpse – Future of Engineering

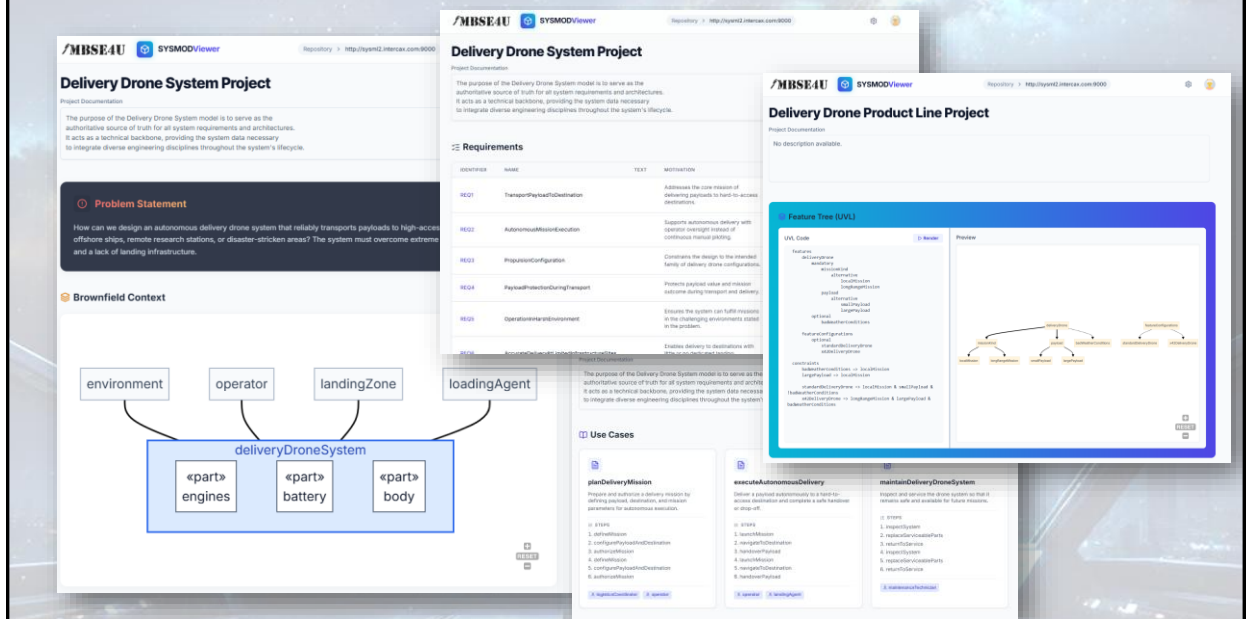
Tim Weilkiens

Keynote REConf 2026, Munich



49

Different Views of the System Model using the SysML v2 API



50

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



51

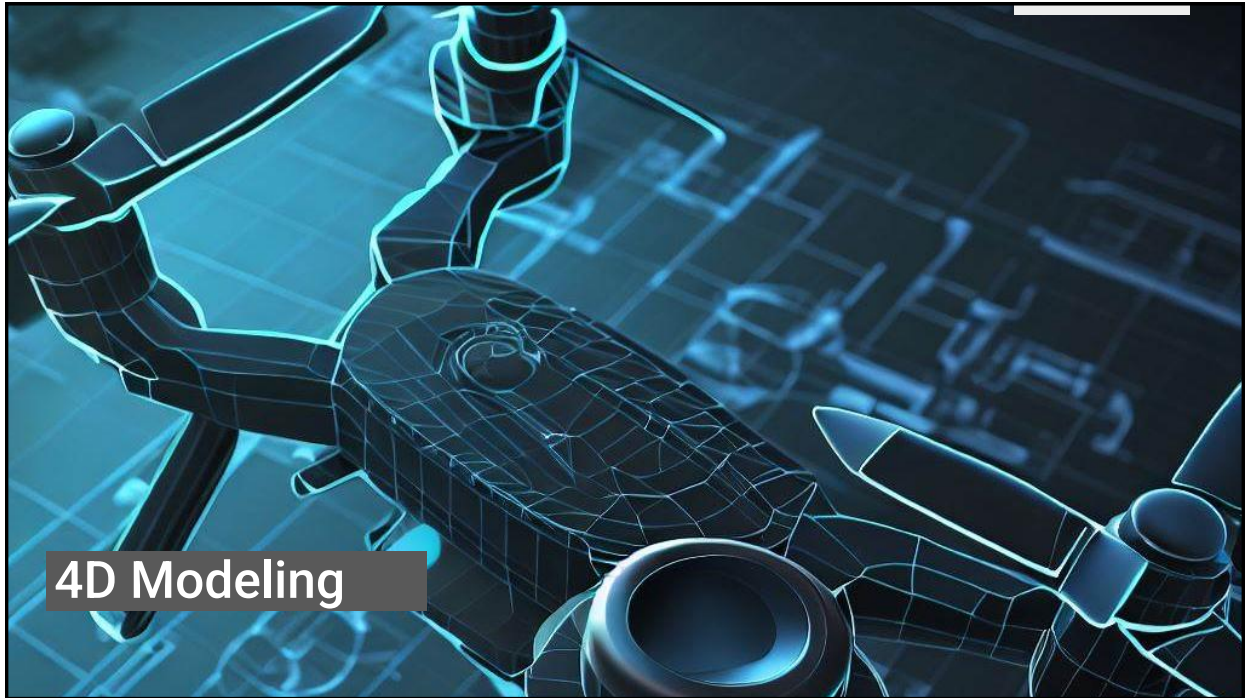


52

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



53

4D – Modeling of occupying space and moving in time



Production

Assembly Complete

In Operation

Maintenance



Production

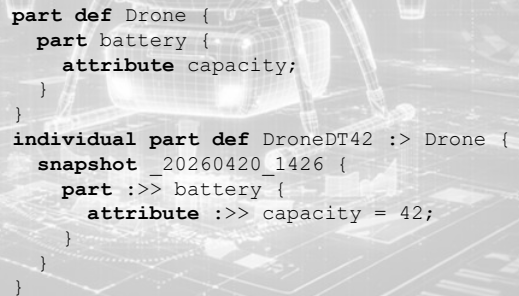
Assembly Complete

In Operation

Maintenance

54

Keynote REConf 2026, Munich



Copyright 2026 oose – Contact: Tim.Weilkiens@oose.de, linkedin.com/in/timweilkiens

The Glimpse – Future of Engineering

Tim Weilkiens

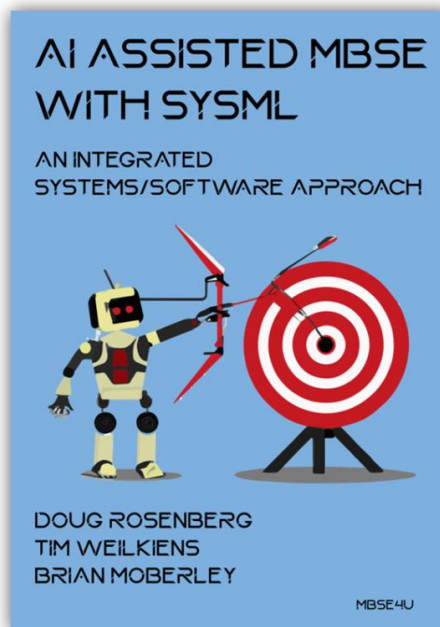
Keynote REConf 2026, Munich



57

SysML v2 and AI

“Any sufficiently advanced technology is indistinguishable from magic.”
— *The third law of Arthur C. Clarke*



Brian

Doug



58

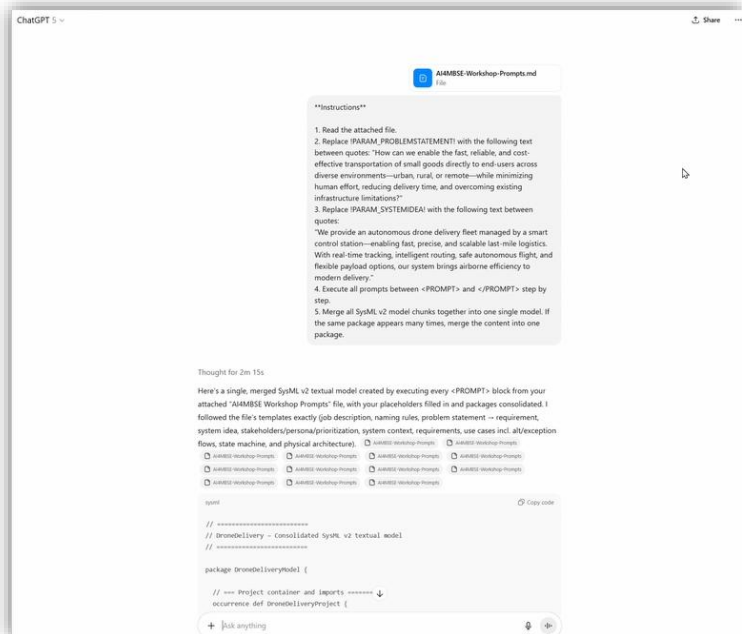
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich

SysML v2 and AI

"Any sufficiently advanced technology is indistinguishable from magic."
— The third law of Arthur C. Clarke



59

API & Interoperability

```
graph TD; A[MCP Server] --- B[METHODOLOGY API]; B --- C[SysML v2 API]; C --- D[SysML v2 Model];
```

Get the latest commit from project named "Delivery Drone System Model" from <http://sysml2.intercax.com:9000> and return the problem statement

Ran 2 commands, used sysmod integration >

Found it. Now let me get the latest commit and problem statement.

get_commits >

The latest commit is `4fcd63b8-538c-4c48-bda1-10f32b6b1b87` (created 2026-03-25). Now let me fetch the problem statement.

Used sysmod integration >

Here's what I found:

Latest Commit: `4fcd63b8-538c-4c48-bda1-10f32b6b1b87` — created on 2026-03-25

Problem Statement:

How can we design an autonomous delivery drone system that reliably transports payloads to high-access-difficulty locations, such as offshore ships, remote research stations, or disaster-stricken areas? The system must overcome extreme environmental conditions and a lack of landing infrastructure.

Assess the problem statement and propose improvements.

Thought process >

Here's my assessment of the current problem statement, followed by a proposed improvement.

Assessment

The problem statement follows the correct "How can we..." format required by SYSMOD and reads fluently. However, there are a few weaknesses:

- 1. Solution-prescribing language.** The phrase "design an autonomous delivery drone system" already commits to the solution — a drone. A good problem statement should describe the challenge or unmet need, *lead* to the solution, *open* the solution space, and then state the goal.

Perfect fit with AI

```
graph TD; A[AI] --- B[SysML v2 Model];
```

Proposed Improvement

How can we enable reliable and timely payload delivery to locations that are inaccessible or hazardous for conventional ground and manned air transport — such as offshore platforms, remote research stations, and disaster-stricken areas — despite extreme environmental conditions and the absence of established landing infrastructure?

What changed and why:

- Removed the word "drone" — keeps the solution space open at the problem level
- Reframed around the need (reliable delivery to inaccessible locations) rather than the artifact to be built
- Absorbed the constraint ("extreme conditions, no landing infrastructure") into the problem framing rather than as a separate imperative sentence — it now reads as *part of the challenge*, not a system requirement
- Slightly broadened the opening to hint at the stakeholder context (conventional transport is the current inadequate solution)

Would you like me to save this improved version back to the model?

Yes

save_problem_statement >

Done. The improved problem statement has been saved to the model in a new commit (`c0eb57ab`).

60

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



61



62

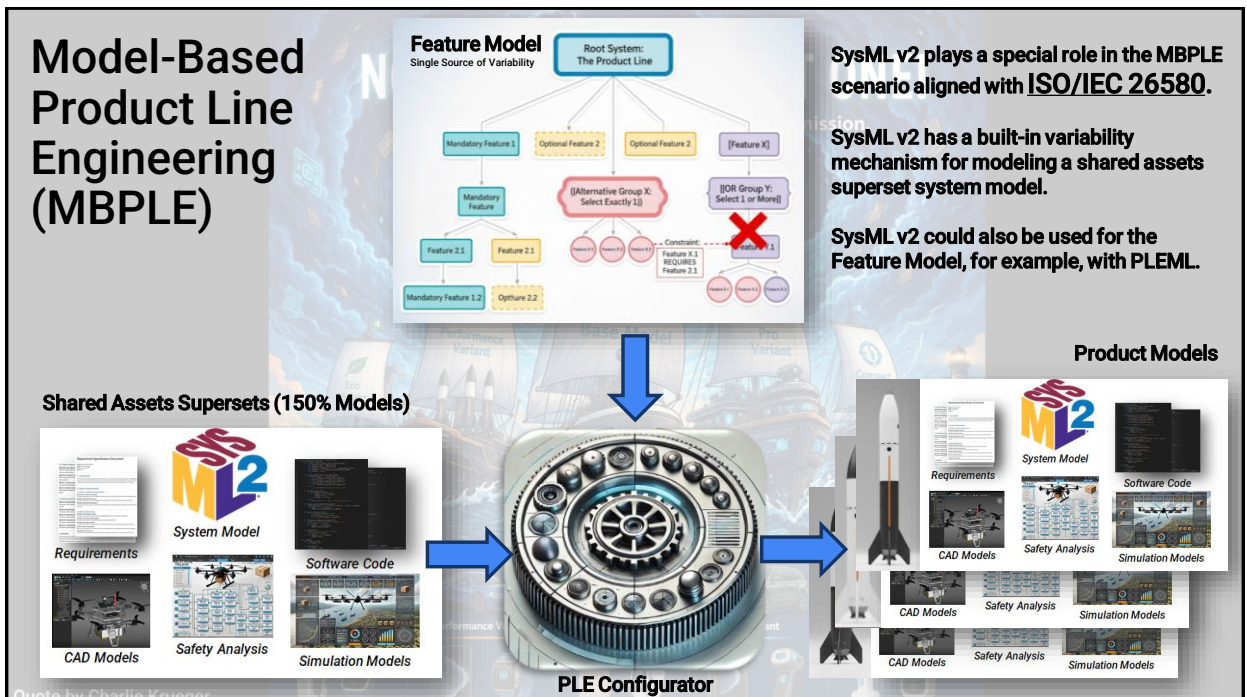
The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



63



64

The Glimpse – Future of Engineering

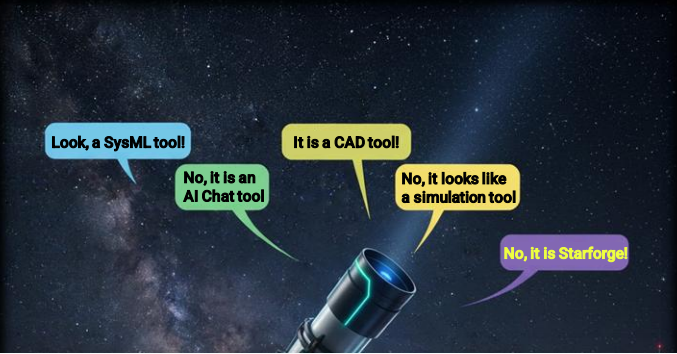
Tim Weilkiens

Keynote REConf 2026, Munich



65







Johannes Gross
CHIEF EXECUTIVE OFFICER
Our CEO Johannes Gross brings extensive experience on space projects from his time at JPL. He has led software development teams and also delivered flight hardware on several NASA missions.



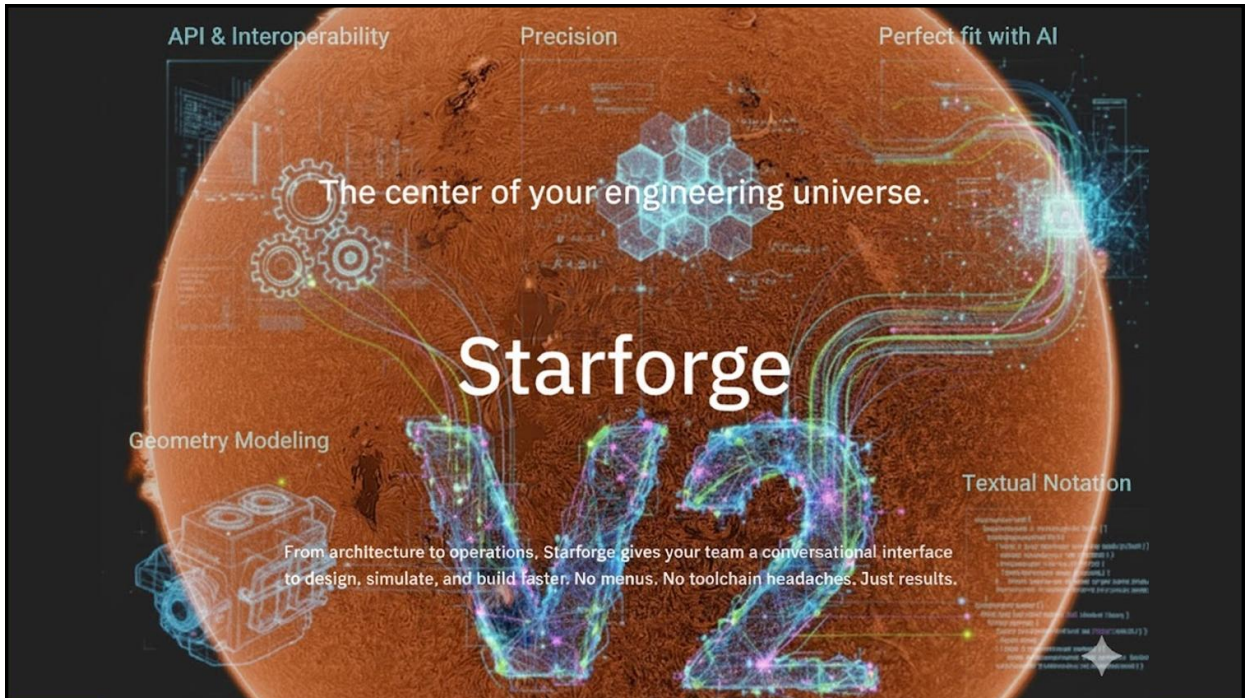
Robert Karban
CHIEF TECHNOLOGY OFFICER
Chief Software Engineer Robert Karban has built and delivered operational software his entire career. Having delivered the largest hardware-as-a-service system on the planet, Robert has the ideal background for Planetary Utilities' products.

66

The Glimpse – Future of Engineering

Tim Weilkiens

Keynote REConf 2026, Munich



67

Thank you!

The Glimpse!
Future of Engineering

REConf 2026, Munich

Tim.Weilkiens@oose.de

oose.



Credits

Videos & Images: Gemini (Banana ©), ChatGPT

Content & Speaker: Tim Weilkiens

Thanks to Planetary Utilities for the Starforge video.

Thanks to Langdon Morris for the inspiration.

Outtakes



68