

Mit KI Systemmodelle aus Anforderungen extrahieren und nutzen

Impulsvortrag

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FACHGRUPPE
RE

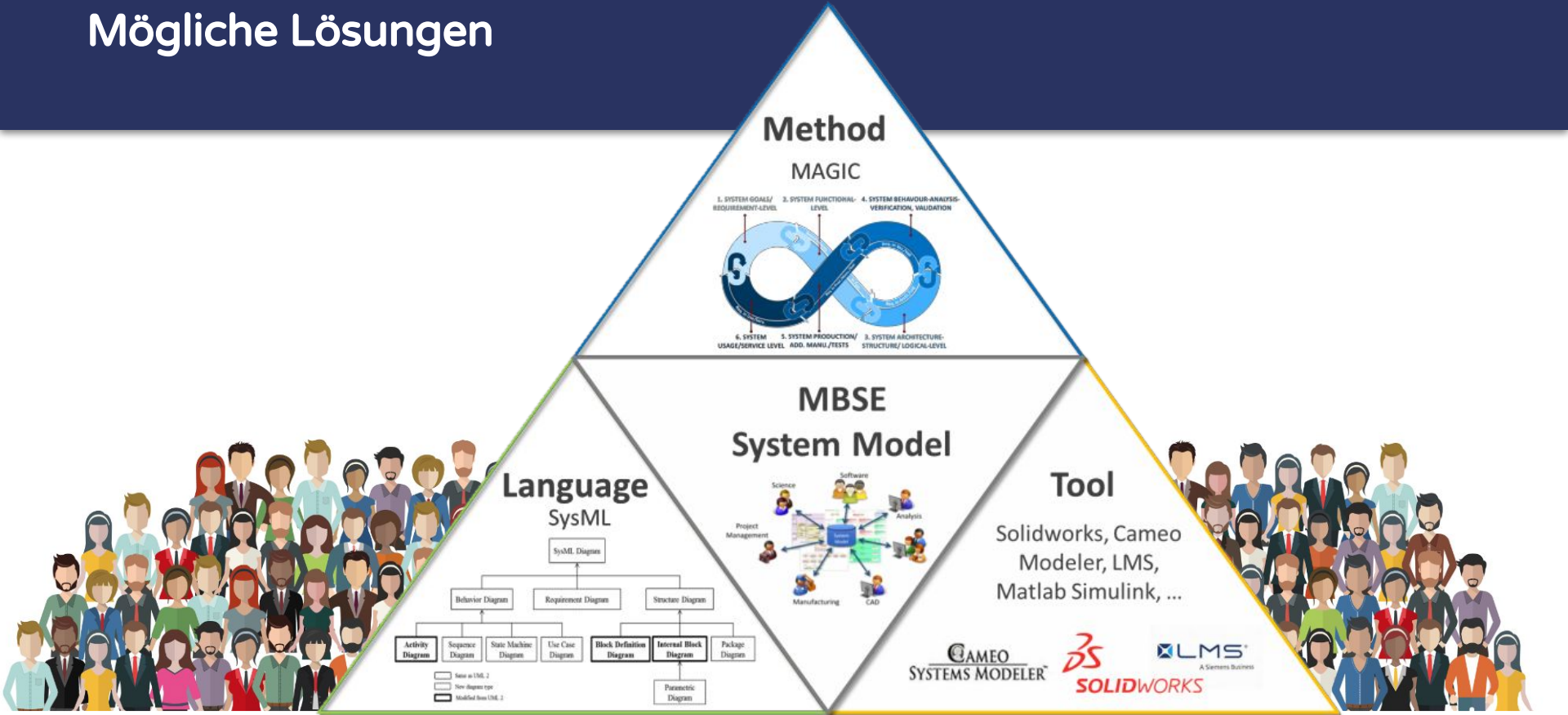


Steigende Komplexität: Haupttreiber in der Produktentwicklung



Getrieben durch
Software,
Vernetzung
und Compliance

Mögliche Lösungen



KI in der Produktentwicklung



Verschiedene Skills

Glossary-
Generation

RE-Model
Sync

Traceability
Analysis



NLP-Basierte Model-Extraktion als Enabler!



Was wir brauchen

Artificial Intelligence

Natural Language
Processing (NLP)

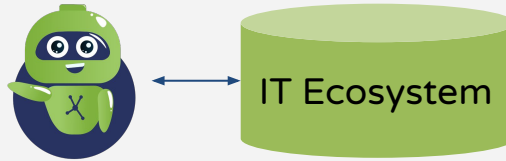
Model Based Systems
Engineering (MBSE)

Tool-Integration

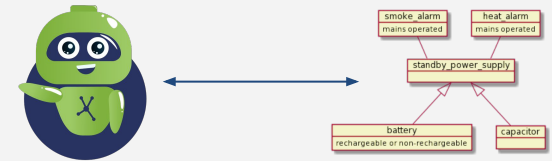
Lösung

KI-Assistent pflegt Modell im Hintergrund, unterstützt Aktivitäten und automatisiert

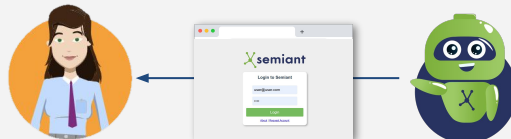
Step 1: Assistent verbindet sich mit Datenquellen



Step 2: Assistent extrahiert ein "Modell"

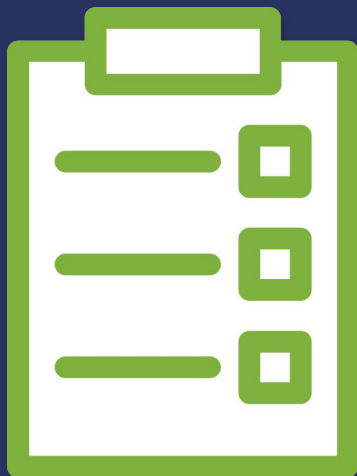


Step 3a: Assistent zeigt Analyseergebnisse im Kontext



Step 3b: Assistent greift ein mit Automatisierung und Nutzerführung





Example: Requirement for Glossary Generation

R-1 Smoke alarms should be mains operated and conform to BS EN 14624.

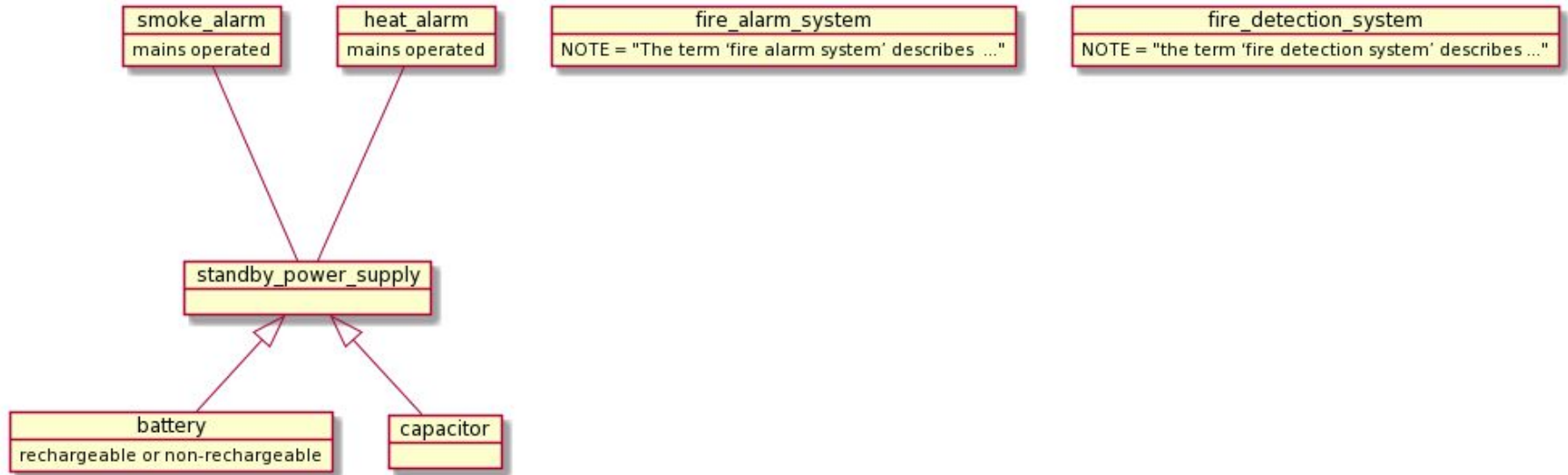
R-2 Heat alarms should be mains operated and conform to BS 5446-2.

R-3 Smoke and heat alarms should have a standby power supply, such as a battery (rechargeable or non-rechargeable) or capacitor. More information on power supplies is given in clause 15 of BS 5839-6.

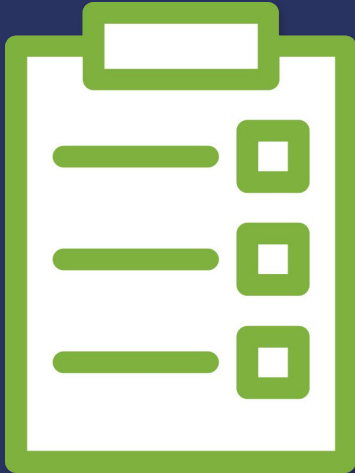
R-4 NOTE: The term 'fire alarm system' describes the combination of components for giving an audible and/or other perceptible warning of fire.

R-5 NOTE: In this document, the term 'fire detection system' describes any type of automatic sensor network and associated control and indicating equipment. Sensors may be sensitive to smoke, heat, gaseous combustion products or radiation. Automatic sprinkler systems can also be used to operate a fire alarm system.

Model Extracted From Requirements (UML)



Extracted Glossary



Battery

- Definition: N/A
- rechargeable or non-rechargeable
- Is a specialization of [Standby Power Supply](#)
- Related to: [R-3](#)

Capacitor

- Definition: N/A
- Is a specialization of [Standby Power Supply](#)
- Related to: [R-3](#)

Fire Alarm System

- Definition: describes the ...
- Related to: [R-4](#)

Fire Detection System

- Definition: describes any type of ...
- Related to: [R-5](#)

Heat Alarm

- Definition: N/A
- Is Mains Operated
- Has a [Standby Power Supply](#)
- Related to: [R-1](#), [R-3](#)

Smoke Alarm

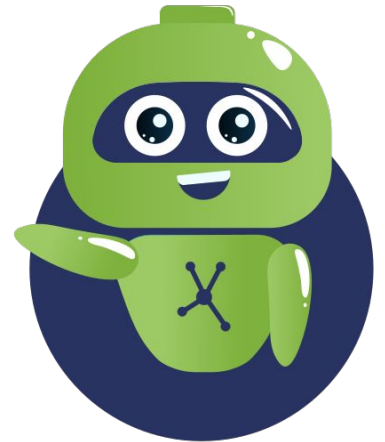
- Definition: N/A
- Is Mains Operated
- Has a [Standby Power Supply](#)
- Related to: [R-2](#), [R-3](#)

Standby Power Supply

- Definition: N/A
- Known Specializations: [Battery](#), [Capacitor](#)
- Associated with [Smoke Alarm](#), [Heat Alarm](#)
- Related to: [R-3](#)

Erkenntnisse

- KI-Modell-Extraktion geht weit über heutige KI-Qualitätsanalyse hinaus
- Konsequenter vom Anwendungsfall getrieben
- Modellqualität wird sich über die Zeit verbessern
- Generisch kaum realisierbar





Discussion

- Welches sind die interessanten Anwendungsfälle?
- Welches sind die “Low-Hanging Fruit”?
- Gibt es ähnliche Aktivitäten?

Vielen Dank!

Glossarextraktion ausprobieren unter www.semiant.com



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