

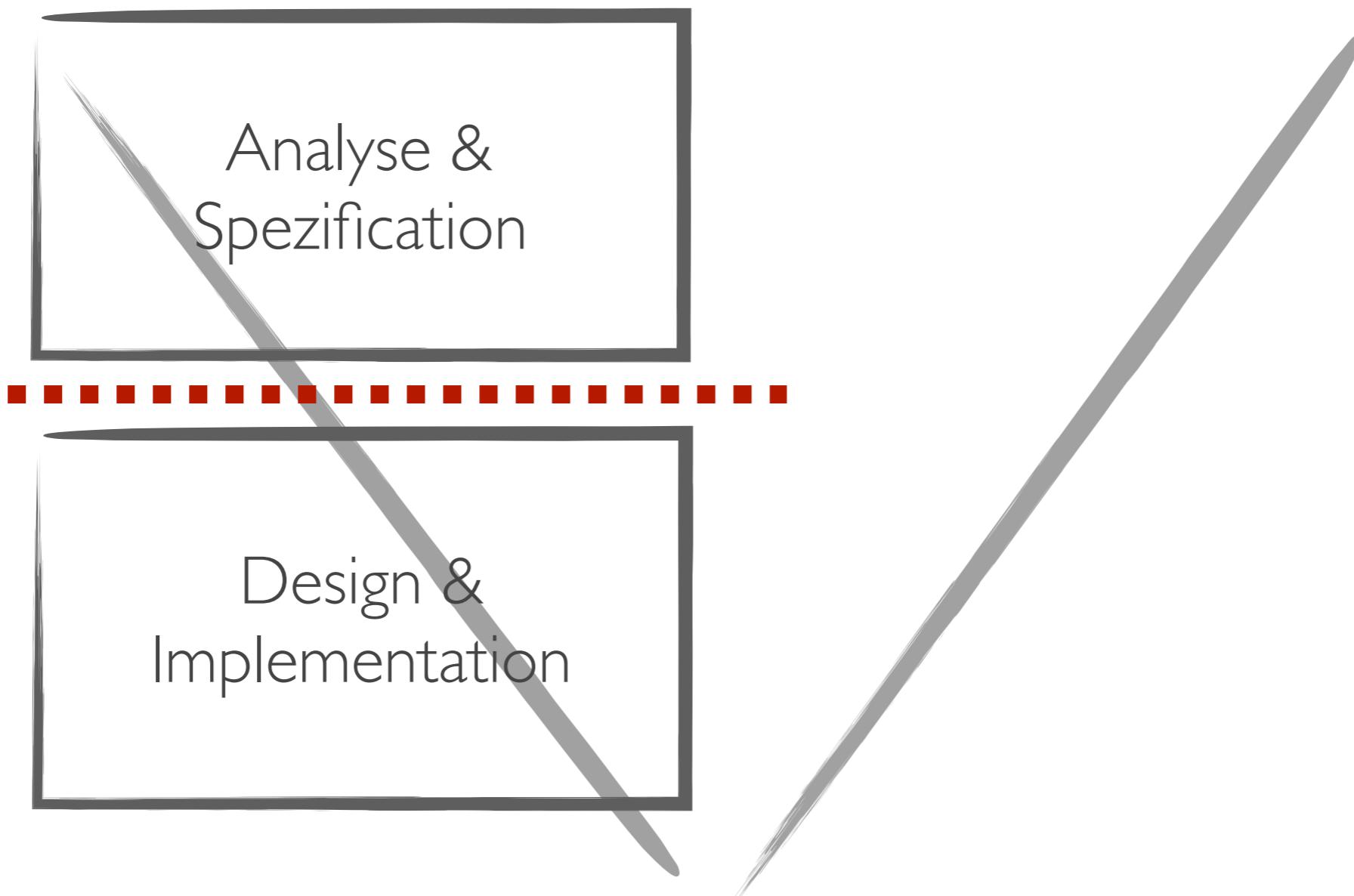
# MB TDD IN PRACTICE

Model Based Test Driven Development based  
on IBM Rational Harmony SE

MESCONF 2018

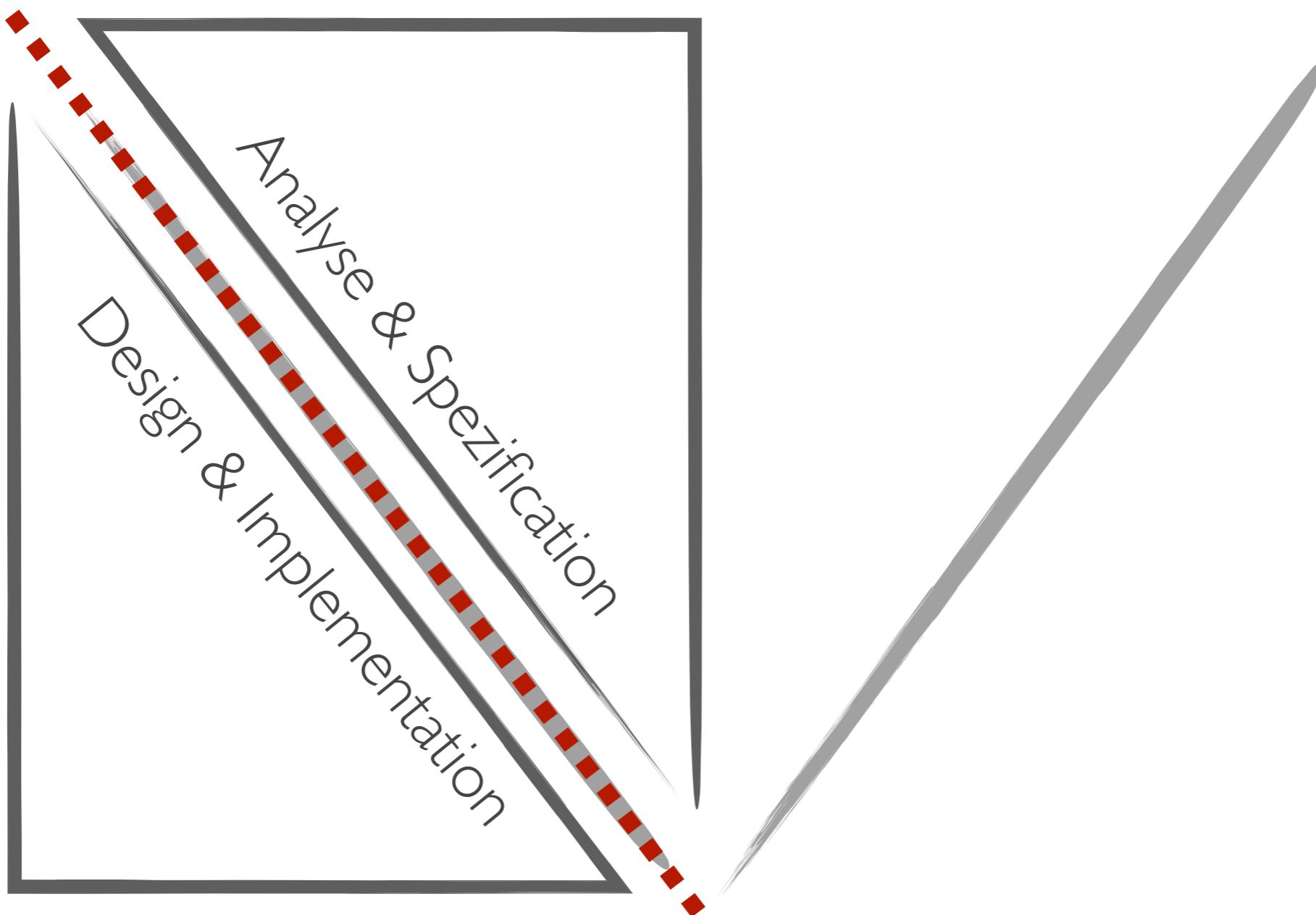
# SYSMOD Zickzak Pattern in the V-Model

Specification - Implementation - Verifikation



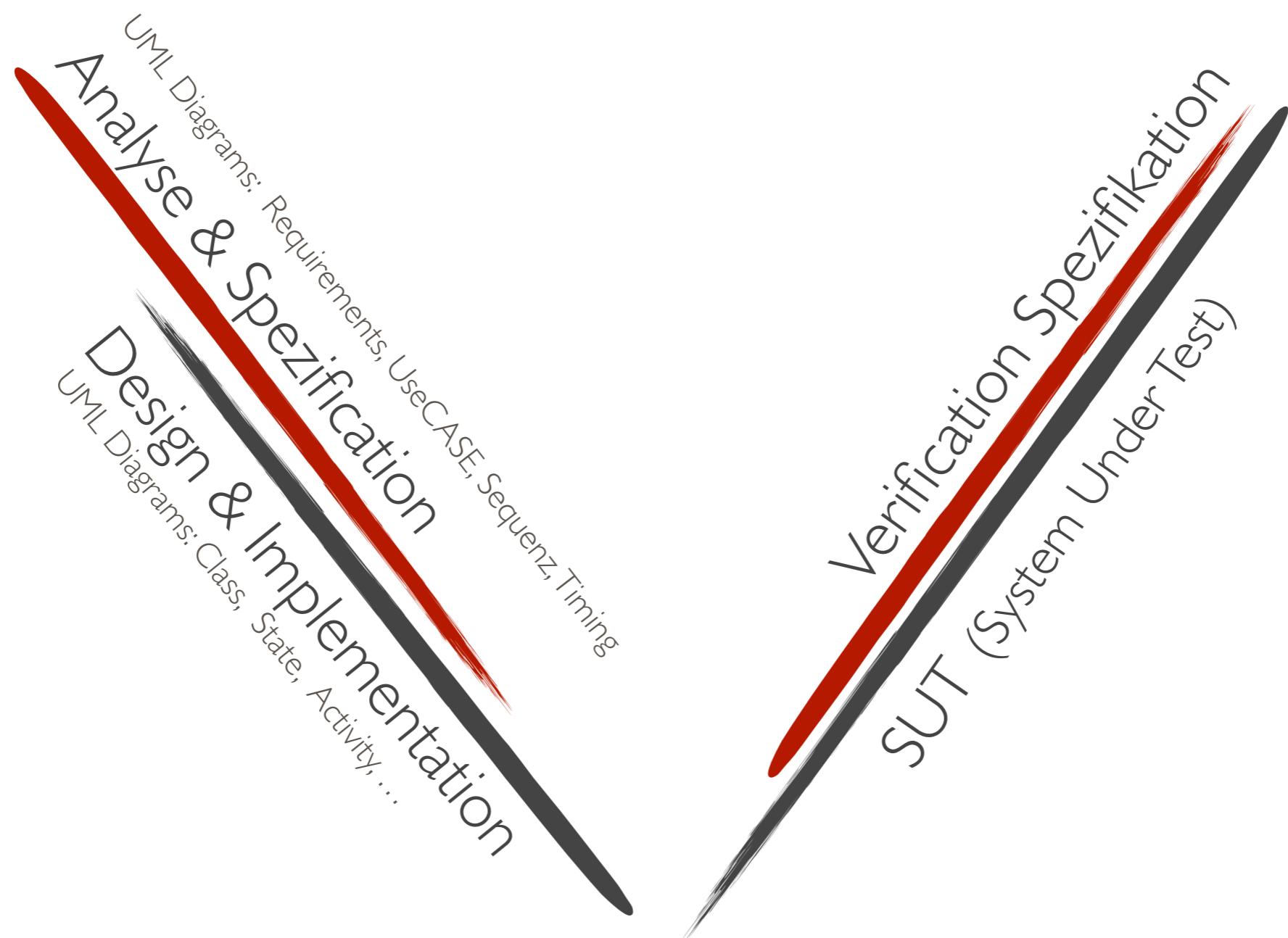
# **SYSMOD Zickzak Pattern in the V-Model**

Specification - Implementation - Verifikation



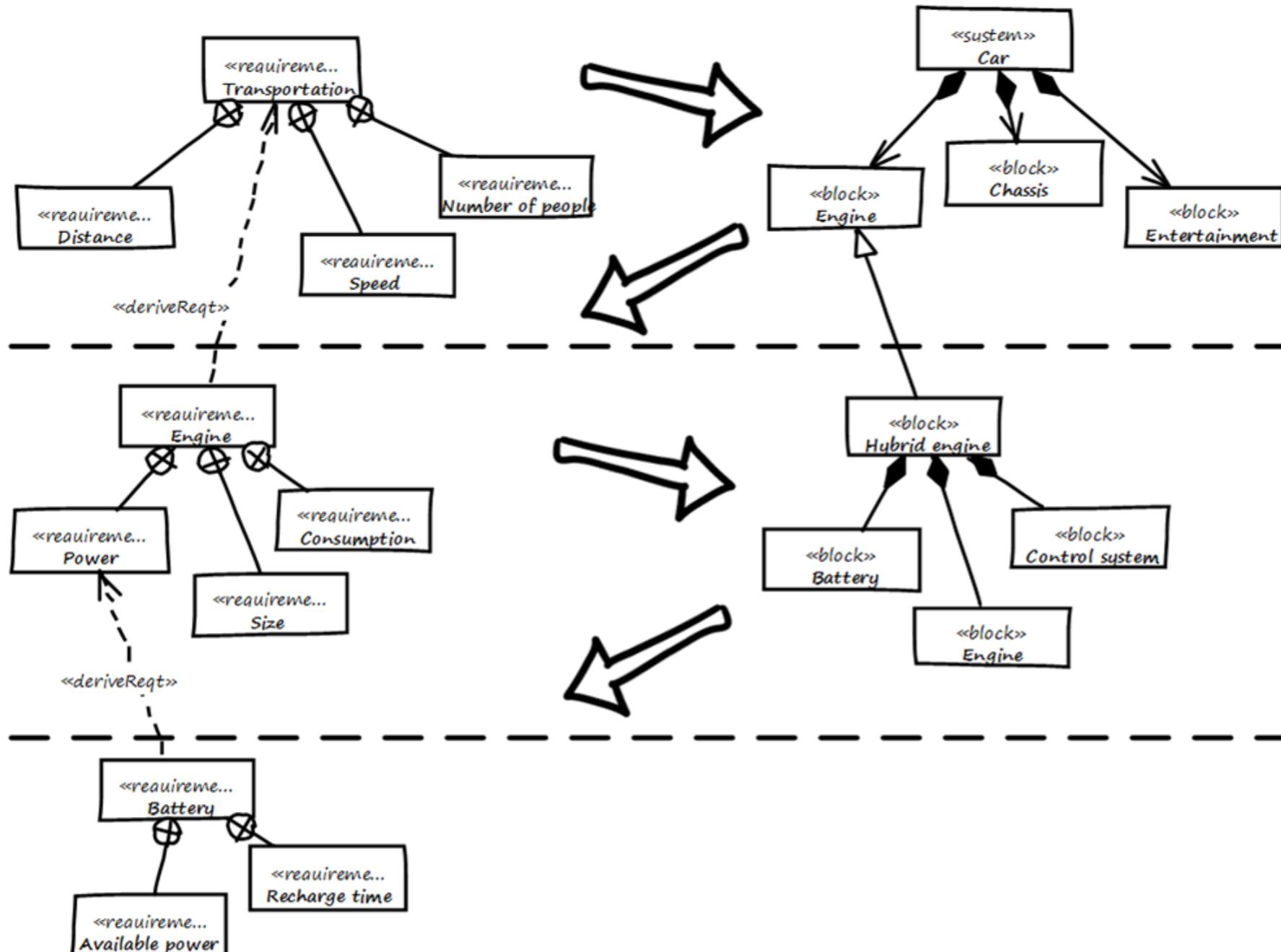
# **SYSMOD Zickzak Pattern in the V-Model**

Specification - Implementation - Verifikation



# SYSMOD Zigzag Pattern

Tim Weilkiens



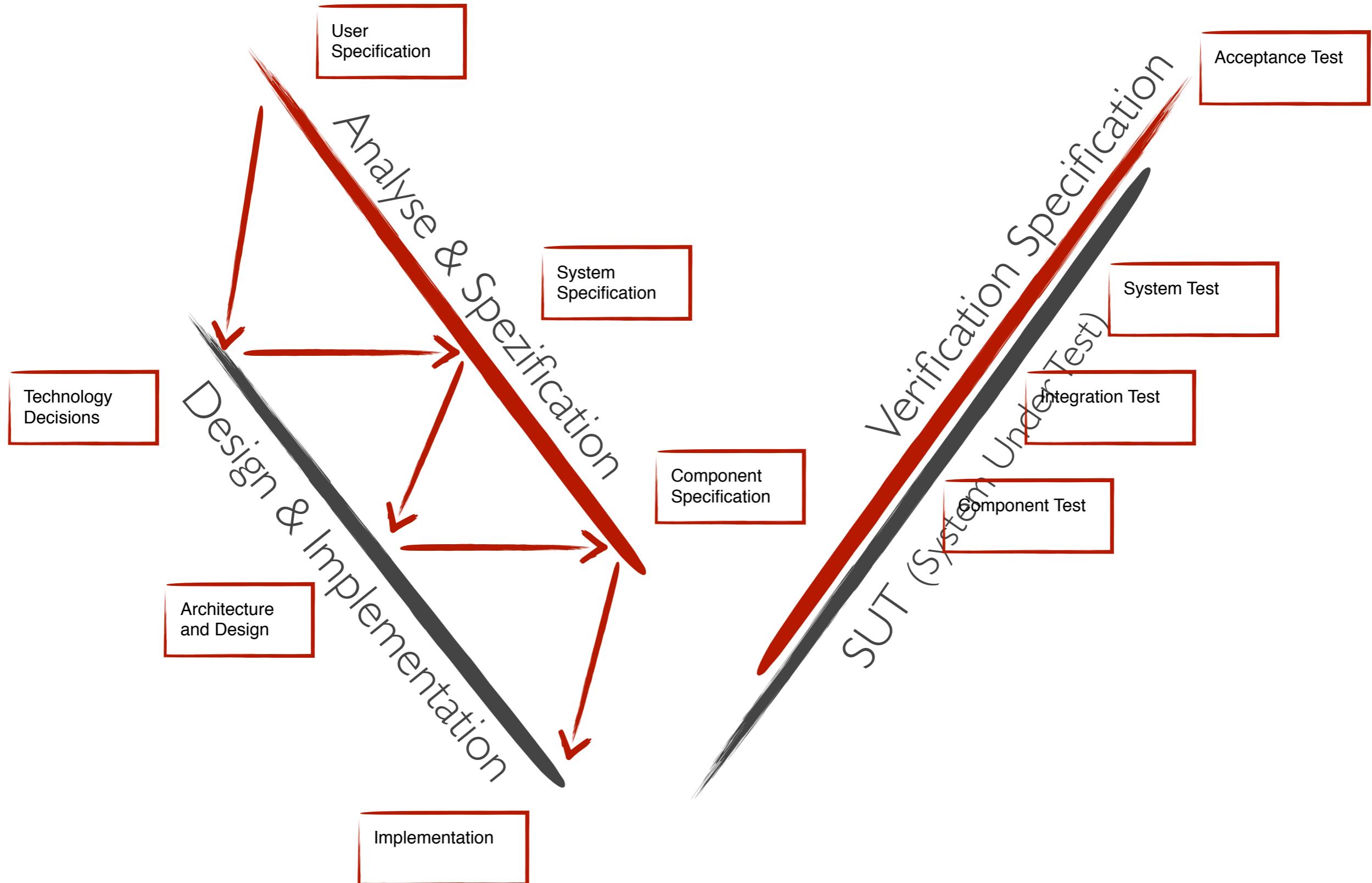
# ZIGZAG PATTERN

VERSION ANDREAS WILLERT

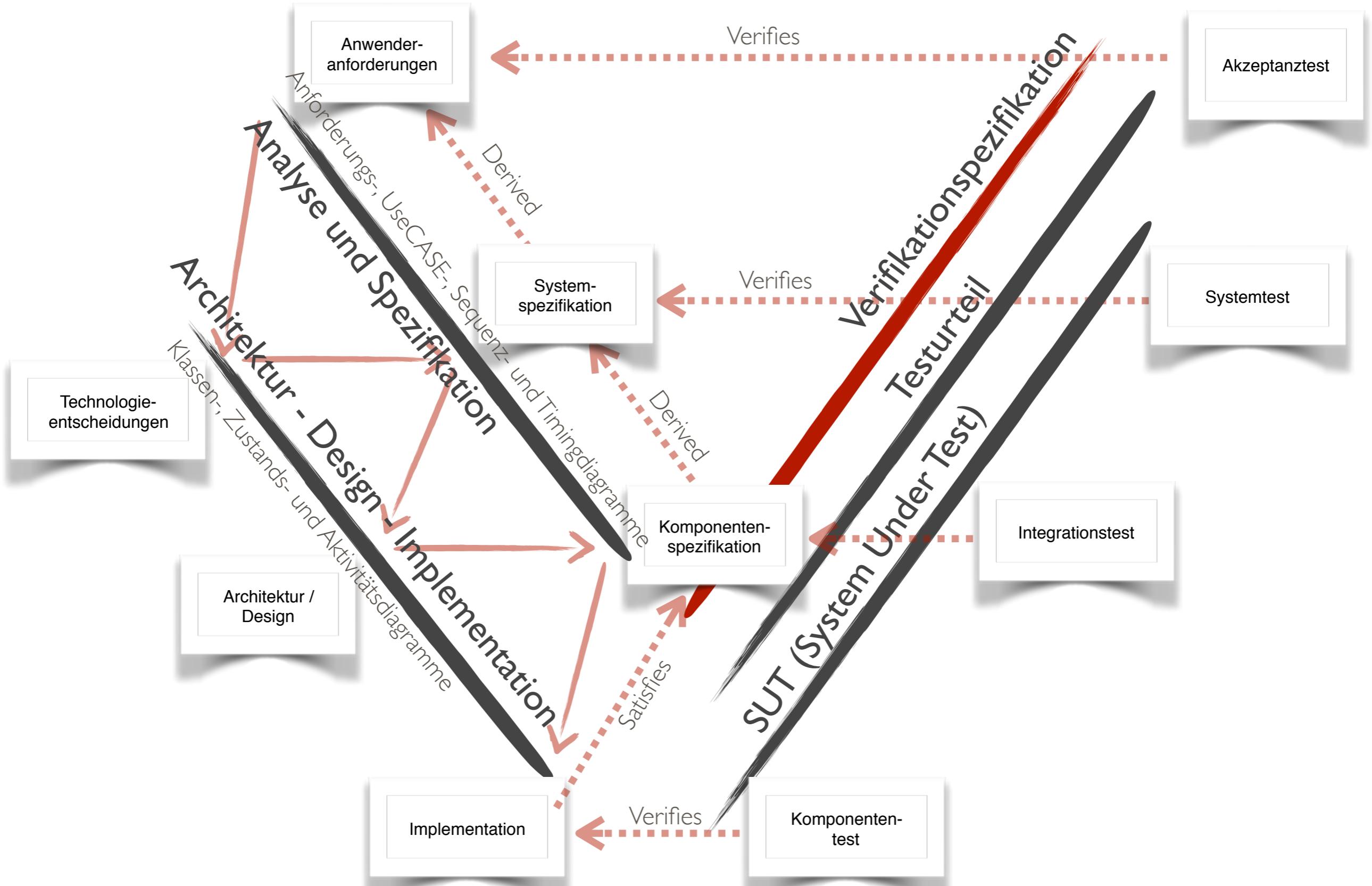


# Reuse und Transformation

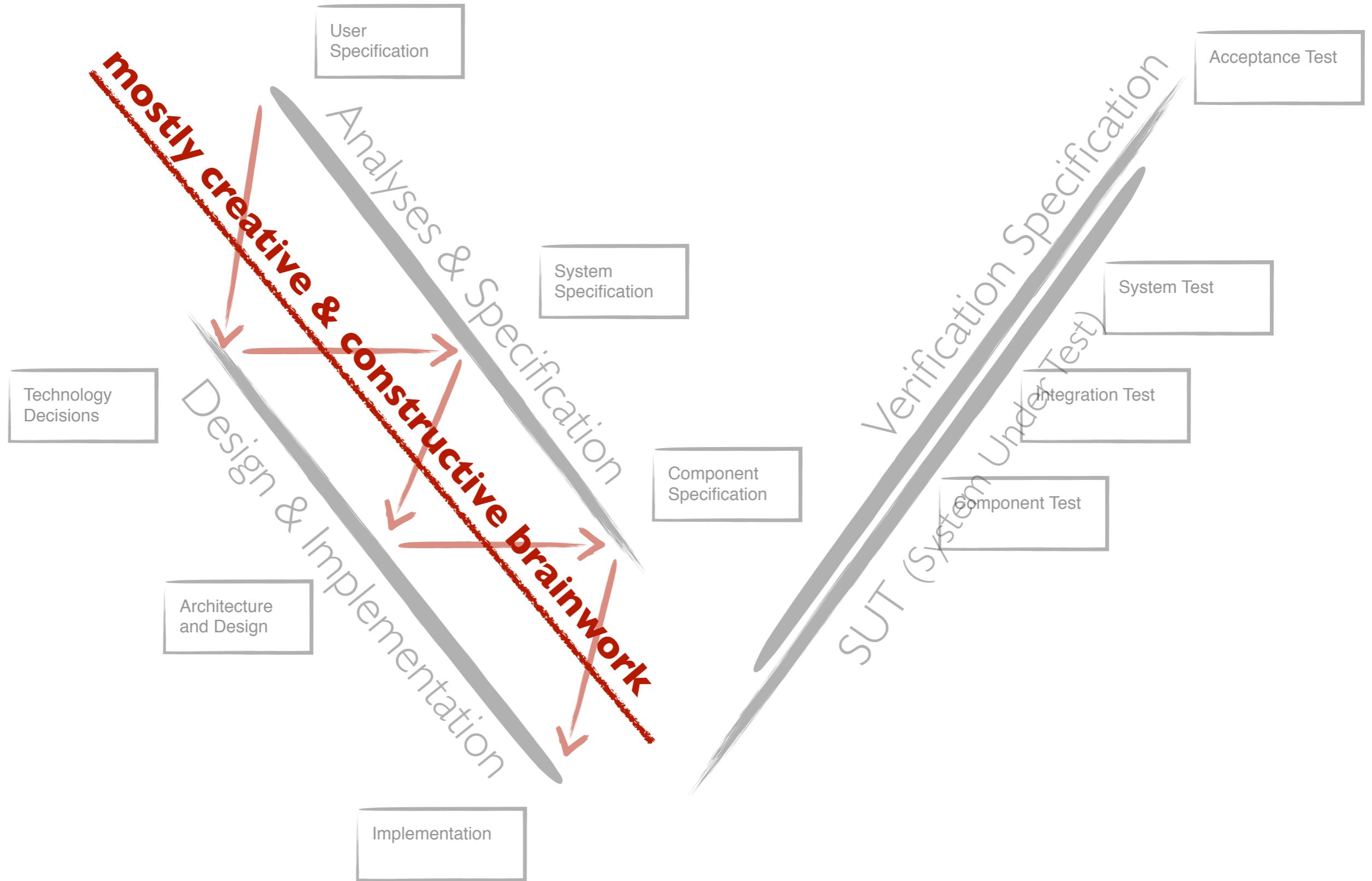
Specification - Implementation - Verifikation



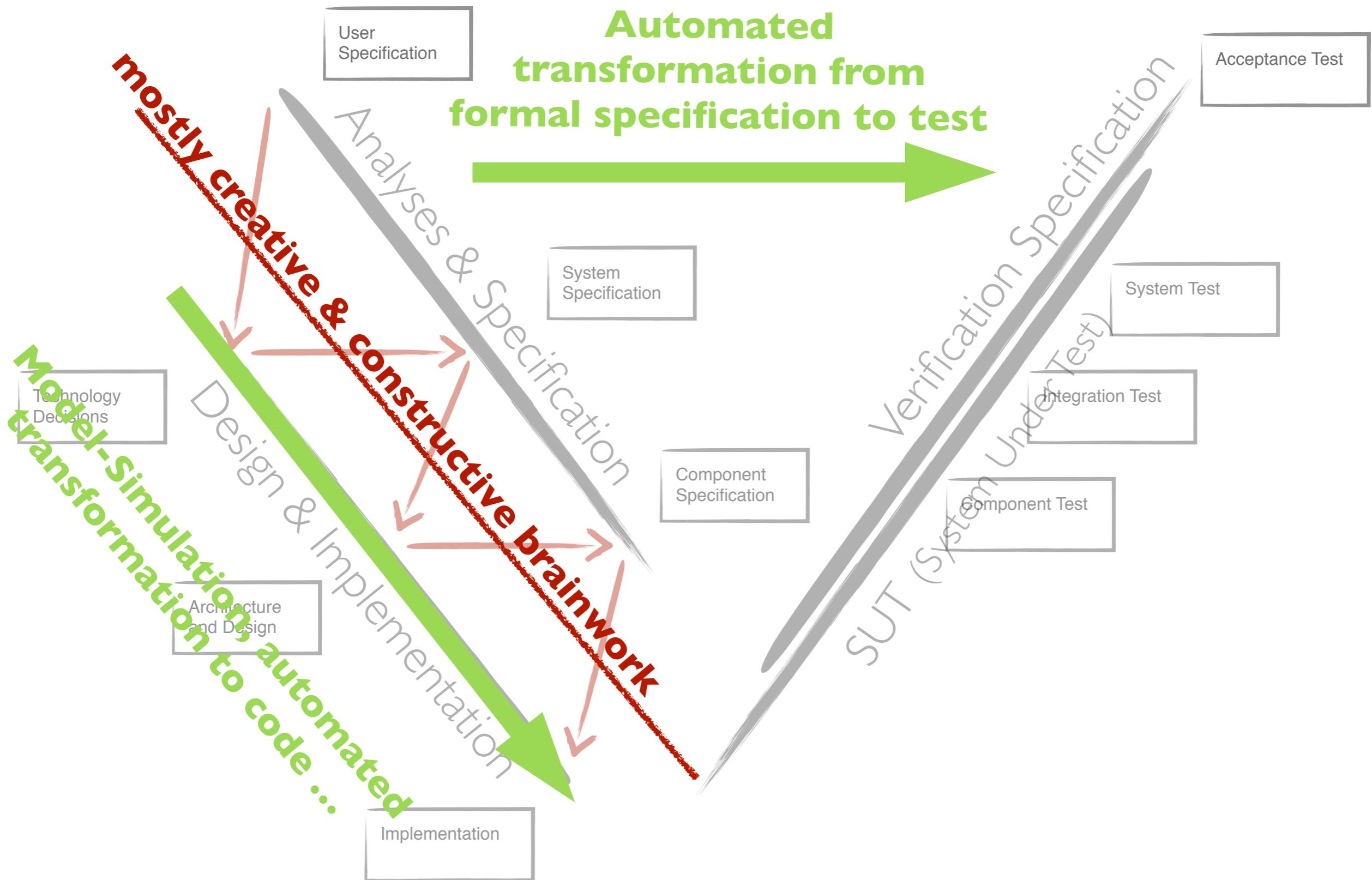
# ,SYSMOD ZickZack‘ trifft ,Harmony SE‘



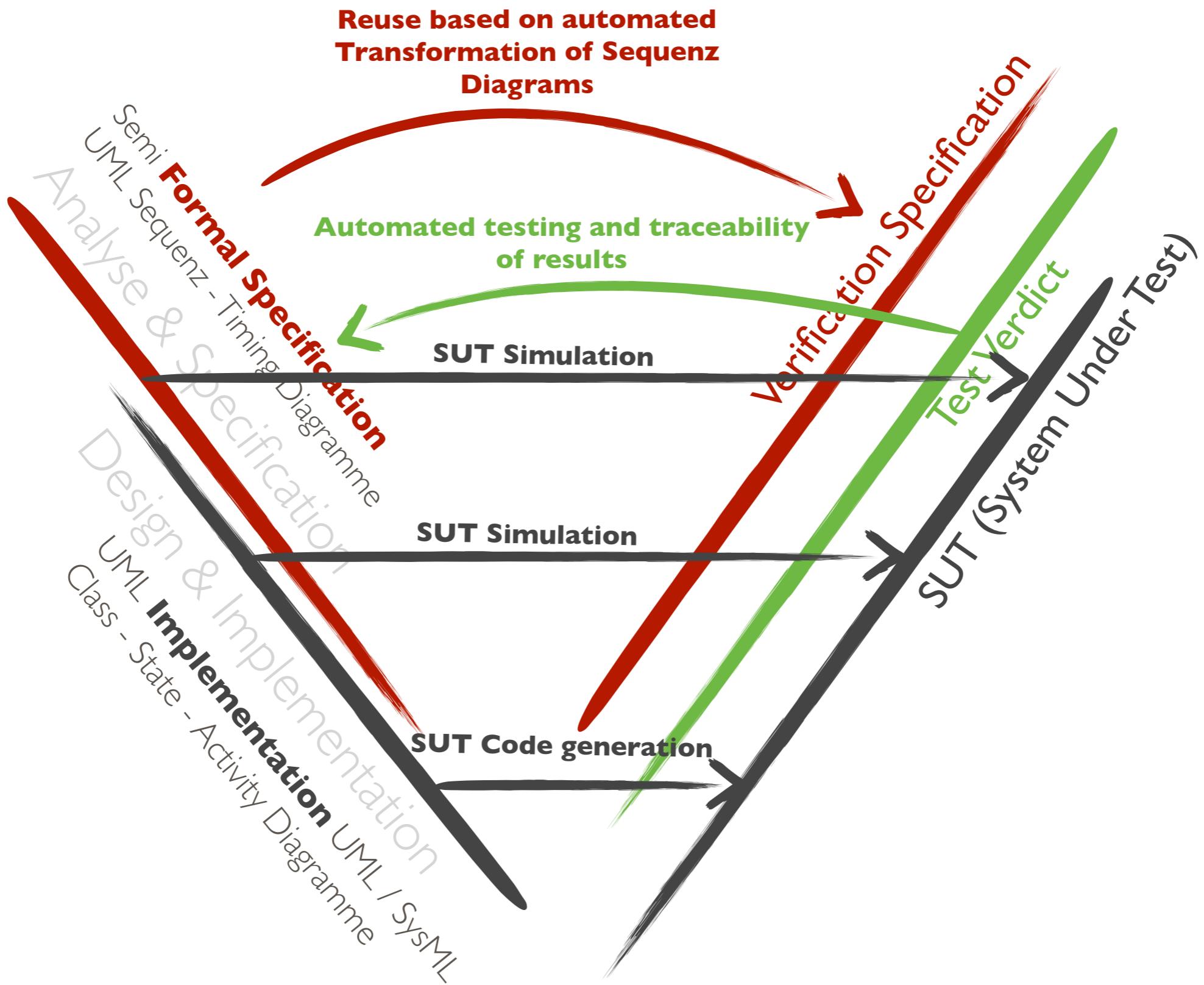
# General potential for Reuse & Automation



# General potential for Reuse & Automation



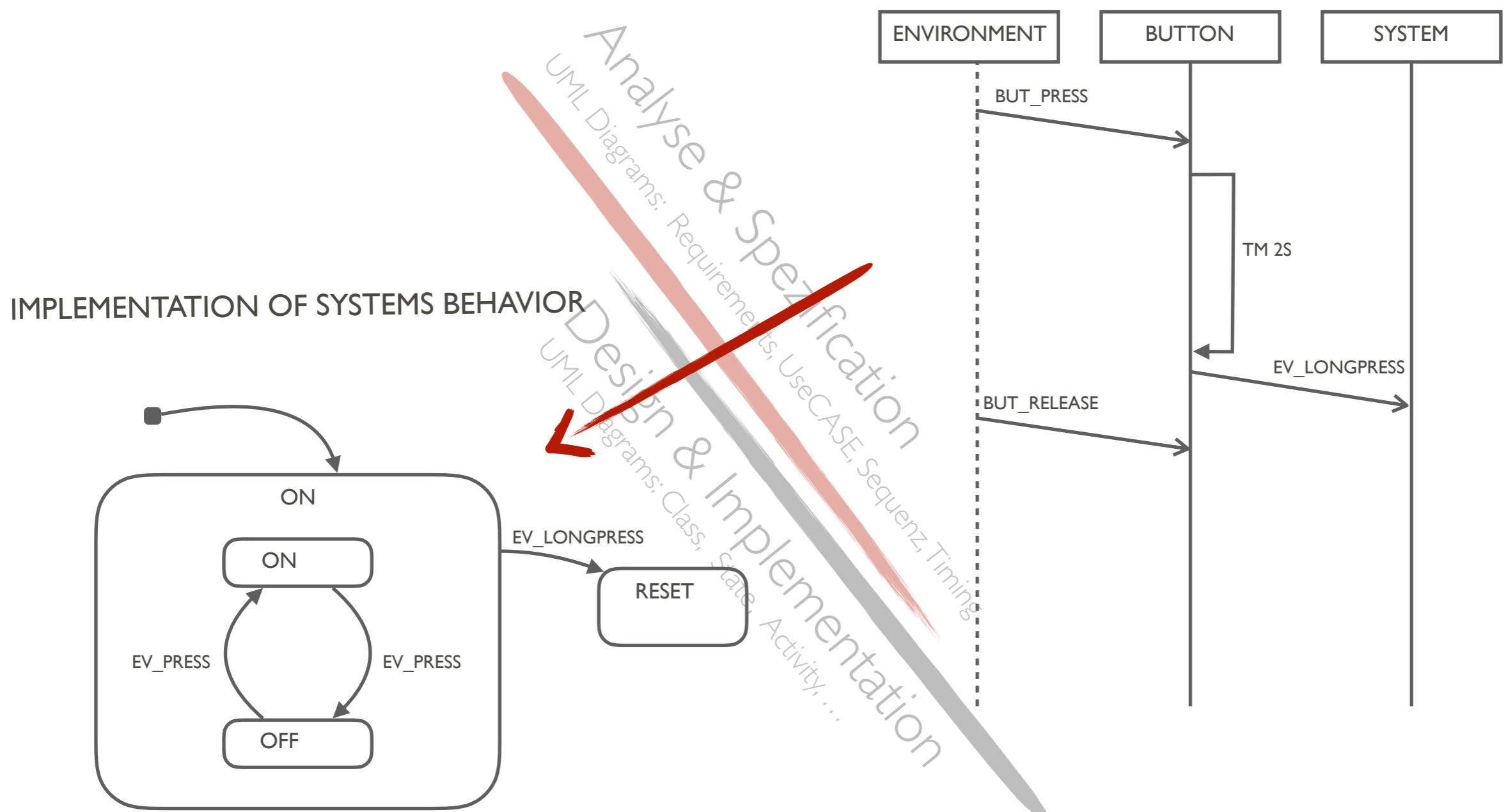
# Reuse & Automation with TestConductor



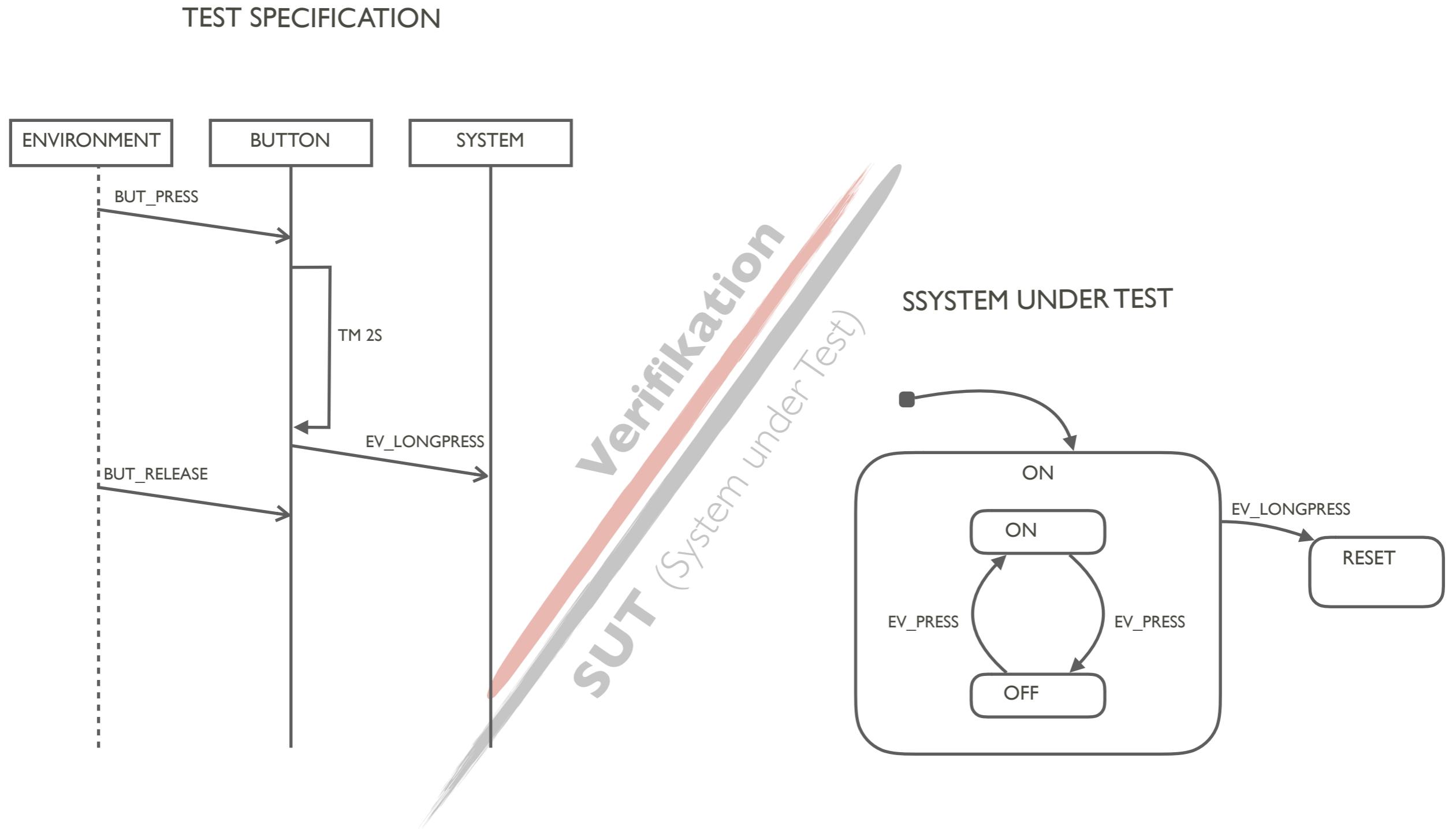
# UML / SysML

Semi-Formale Notation für Spezifikation - Implementation - Verifikation

SEMIFORMAL SPECIFICATION OF SYSTEMS BEHAVIOR

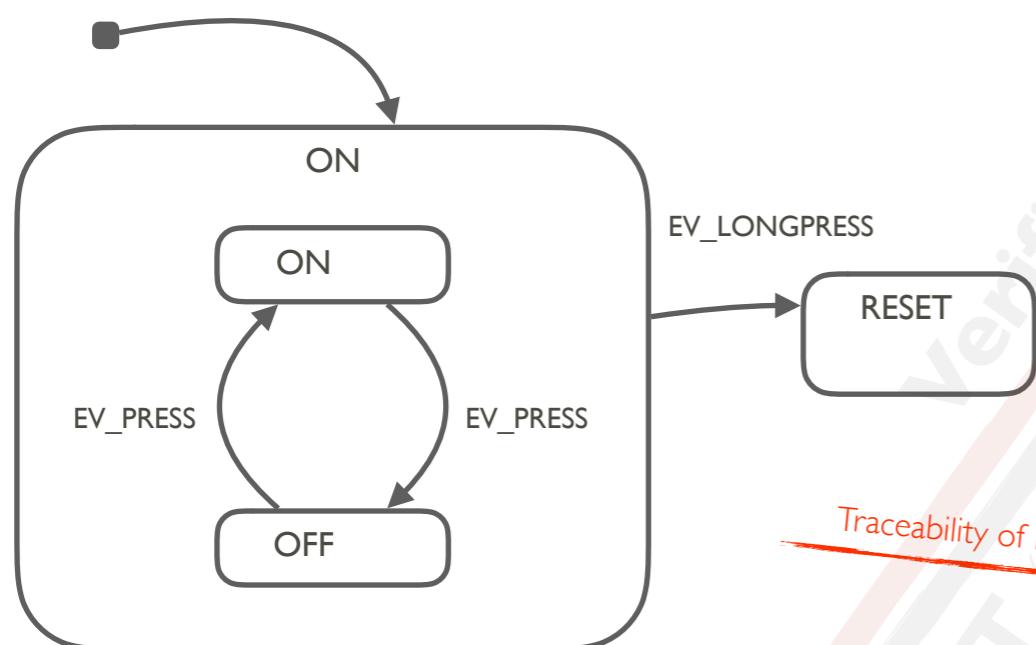


# From Specification to Test



# Backannotation

SIMULATION OR EXECUTION  
ON TARGET SYSTEM



BACKANNOTATION  
TRACEABILITY TIMING AND DATAFLOW



BUT\_PRESS

BUTTON

SYSTEM

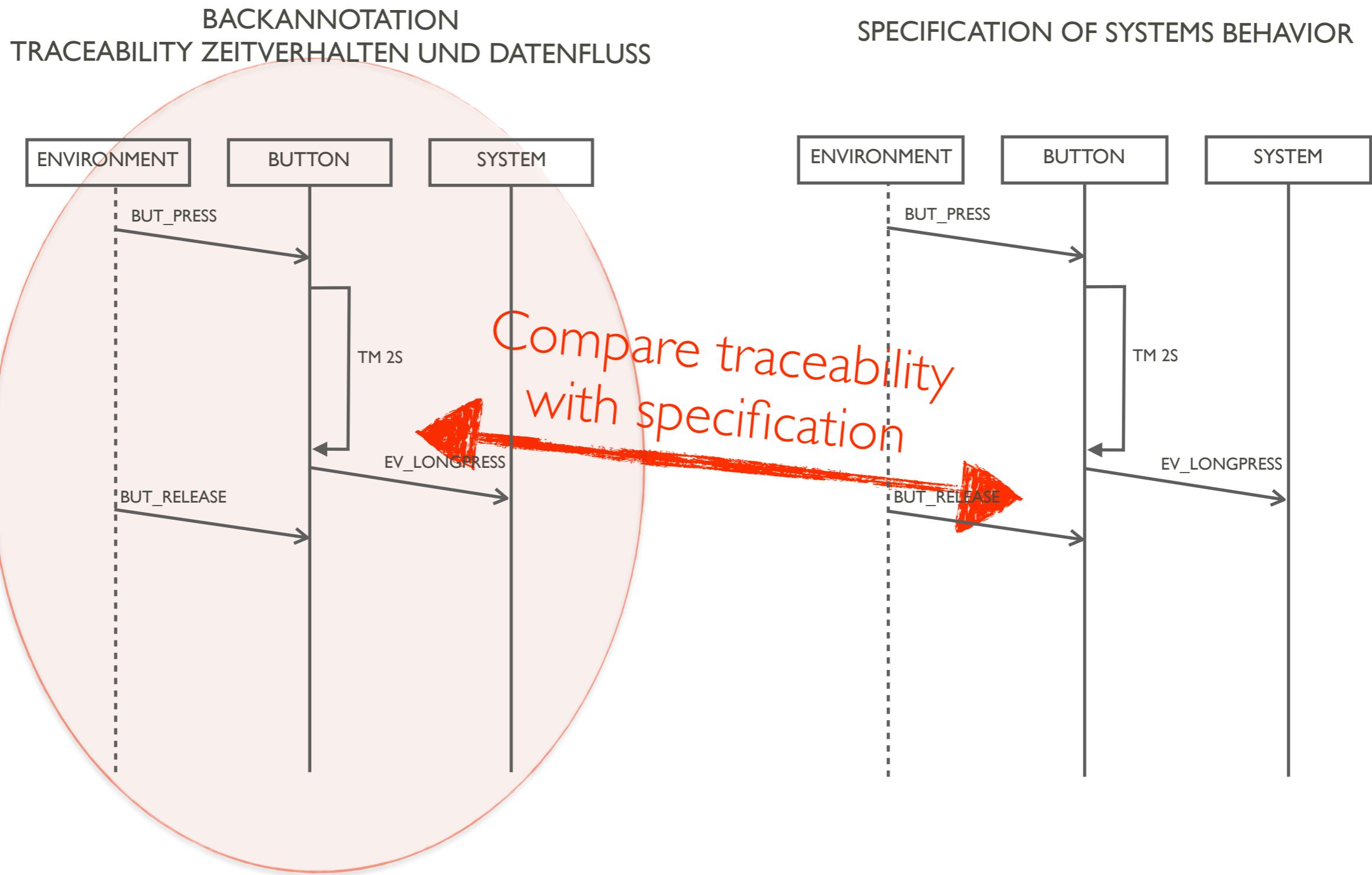
TM 2S

EV\_LONGPRESS

BUT\_RELEASE

Traceability of Runtimedata

# Test-Results



# Warum Sequenzdiagramme

7 +/- 2 Regel

Unser Gehirn kann im Cortex (Bewusstsein) ca. 7 Artefakte gleichzeitig bewusst erfassen und korrelieren.

Kommt ein weiteres Artefakt hinzu fällt ein anderer aus unserer Betrachtung heraus. (***Das merken wir in der Regel nicht***)

Sequenzdiagramme ist Teile & Herrsche, angewandt auf das Zerschneiden von komplexen Zustandsmaschinen, in einzelne Szenarien.

Die lassen sich von unserem Cortex besser beherrschen.

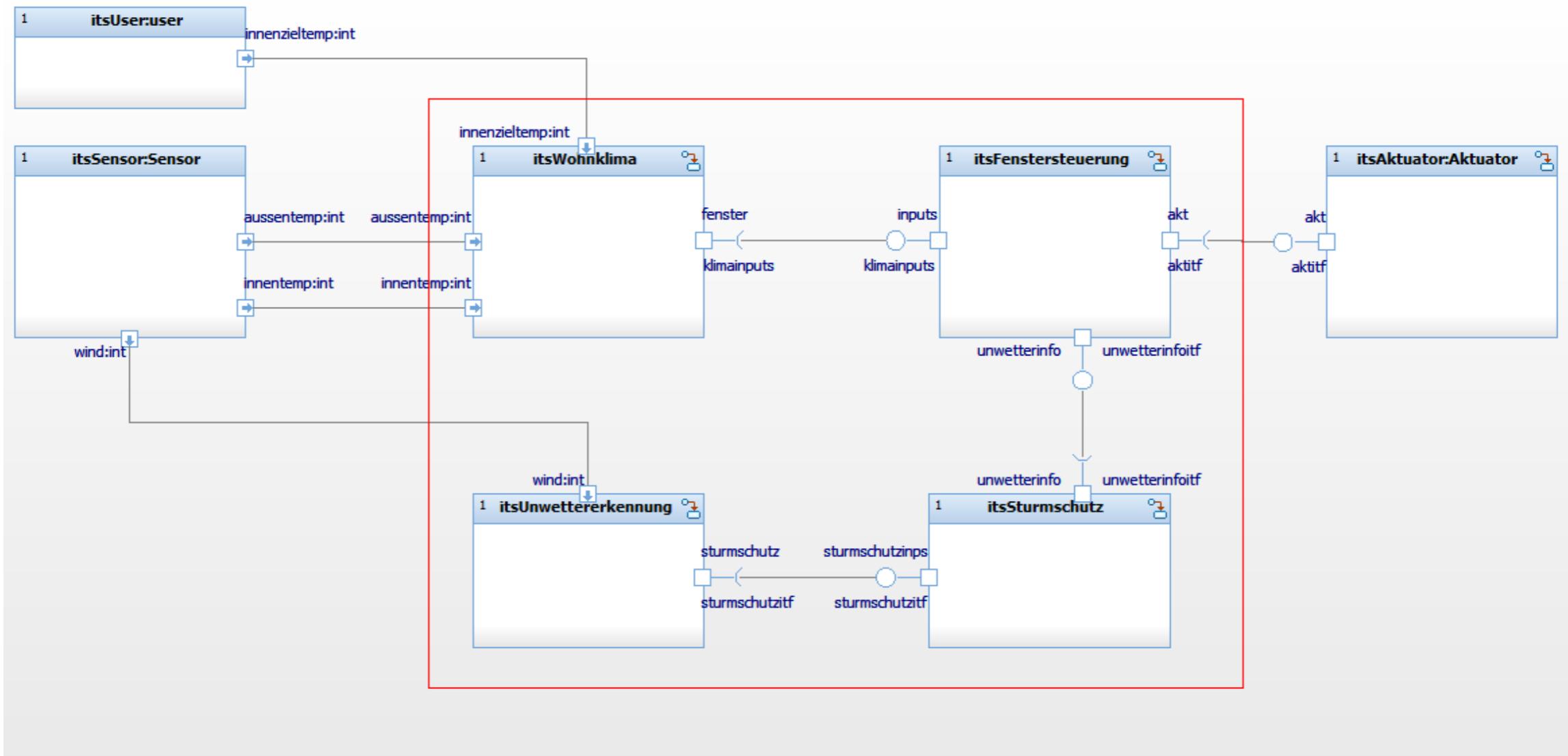
Beim zusammensetzen zu der Szenarien zu einer Komplexen Zustandsmaschine macht unser Gehirn leicht Fehler, die finden wir indem wieder gegen die Szenarien getestet wird.

# PRAKTISCHES BEISPIEL

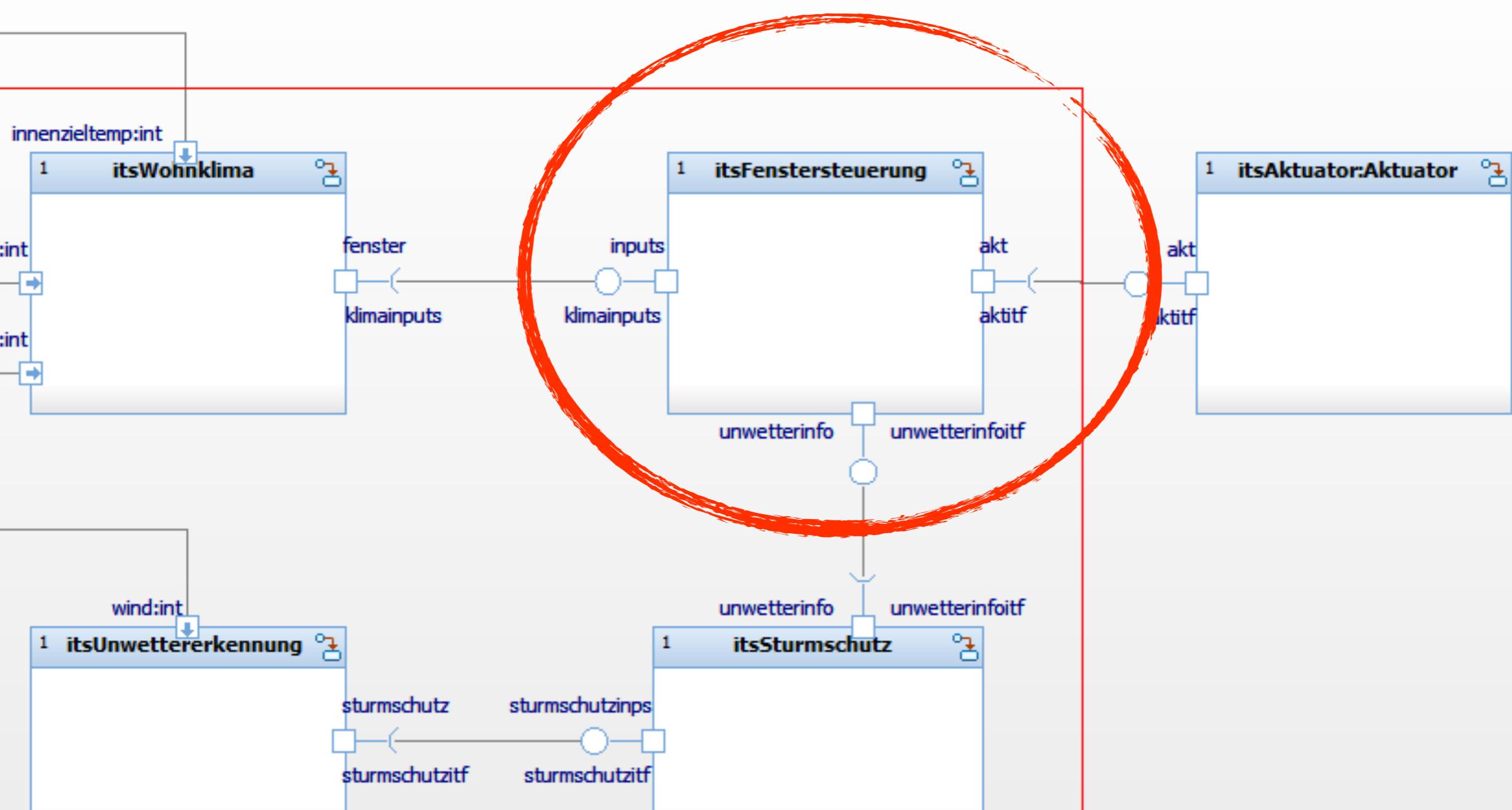
SIMLINE

# Software Design

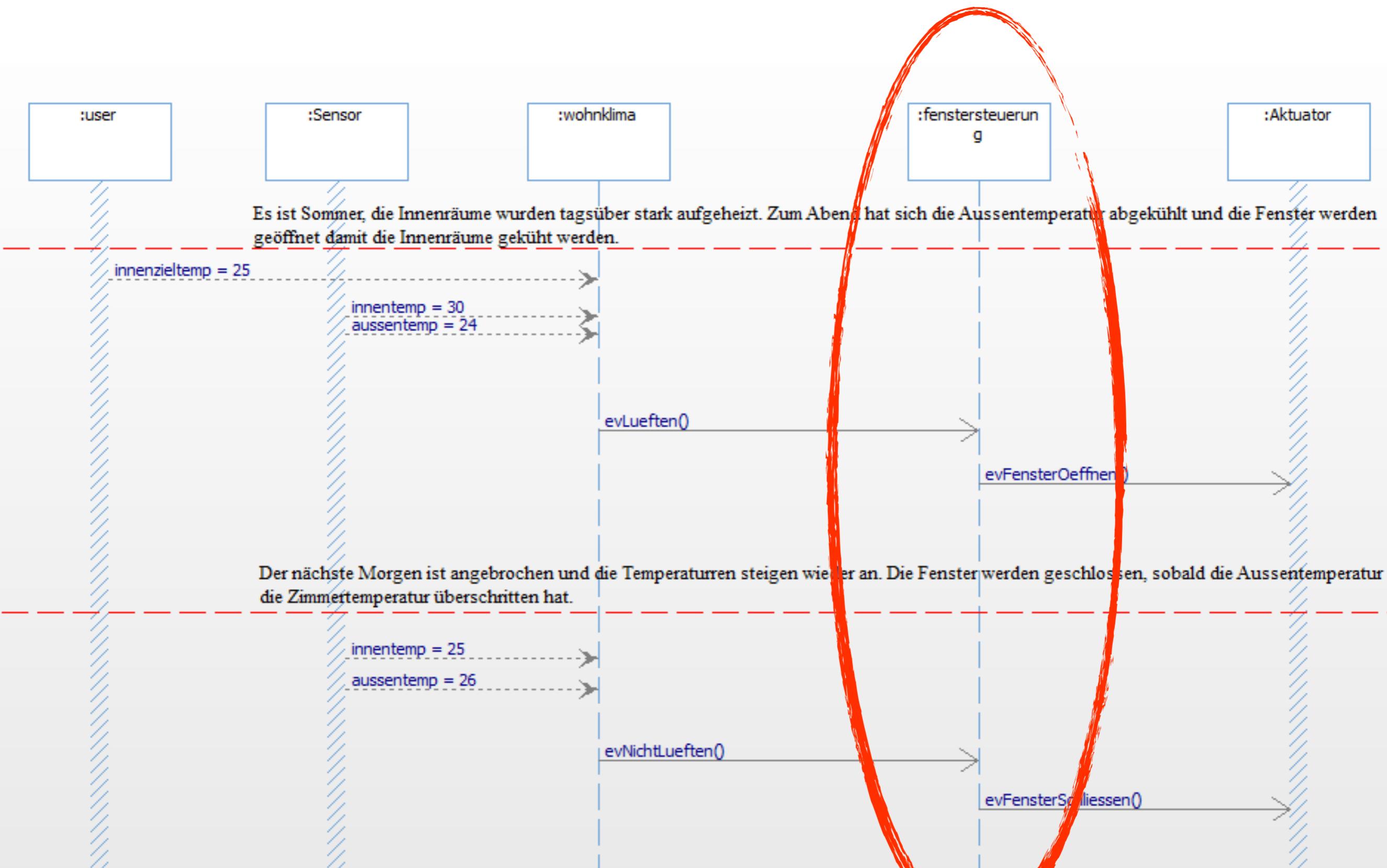
Beispiel - SimLine Wohnklimasteuerung



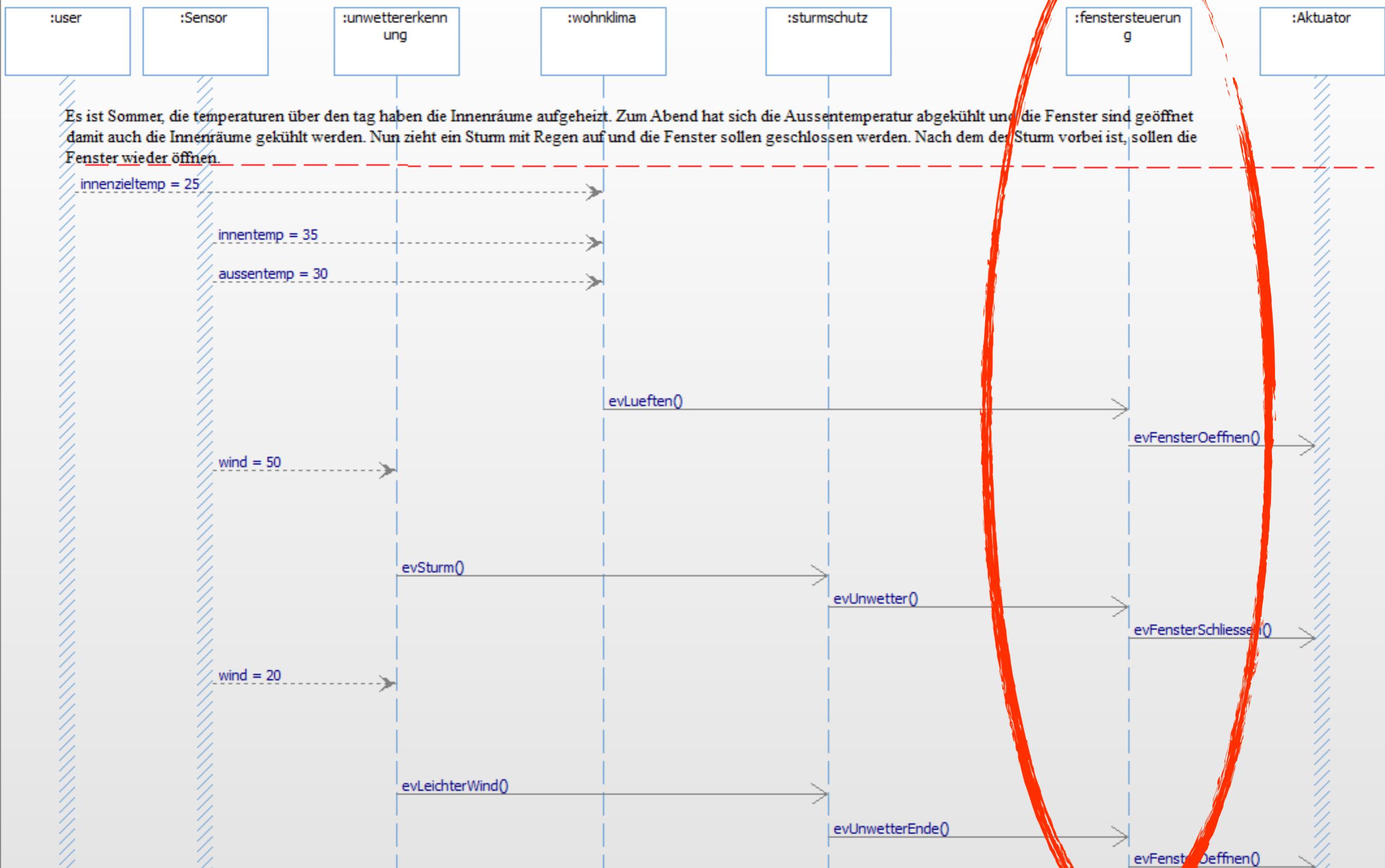
# Software Design



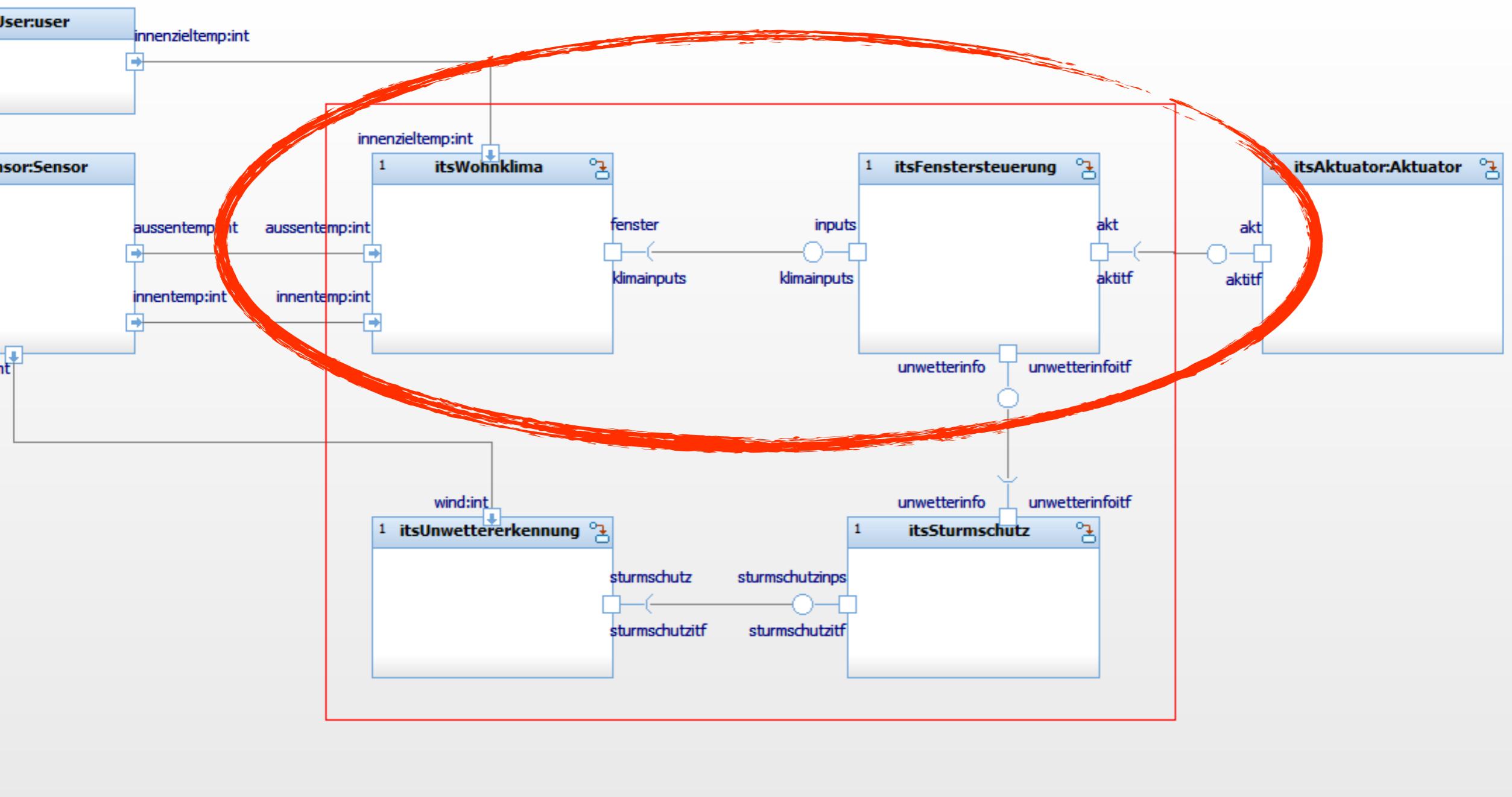
# Specification



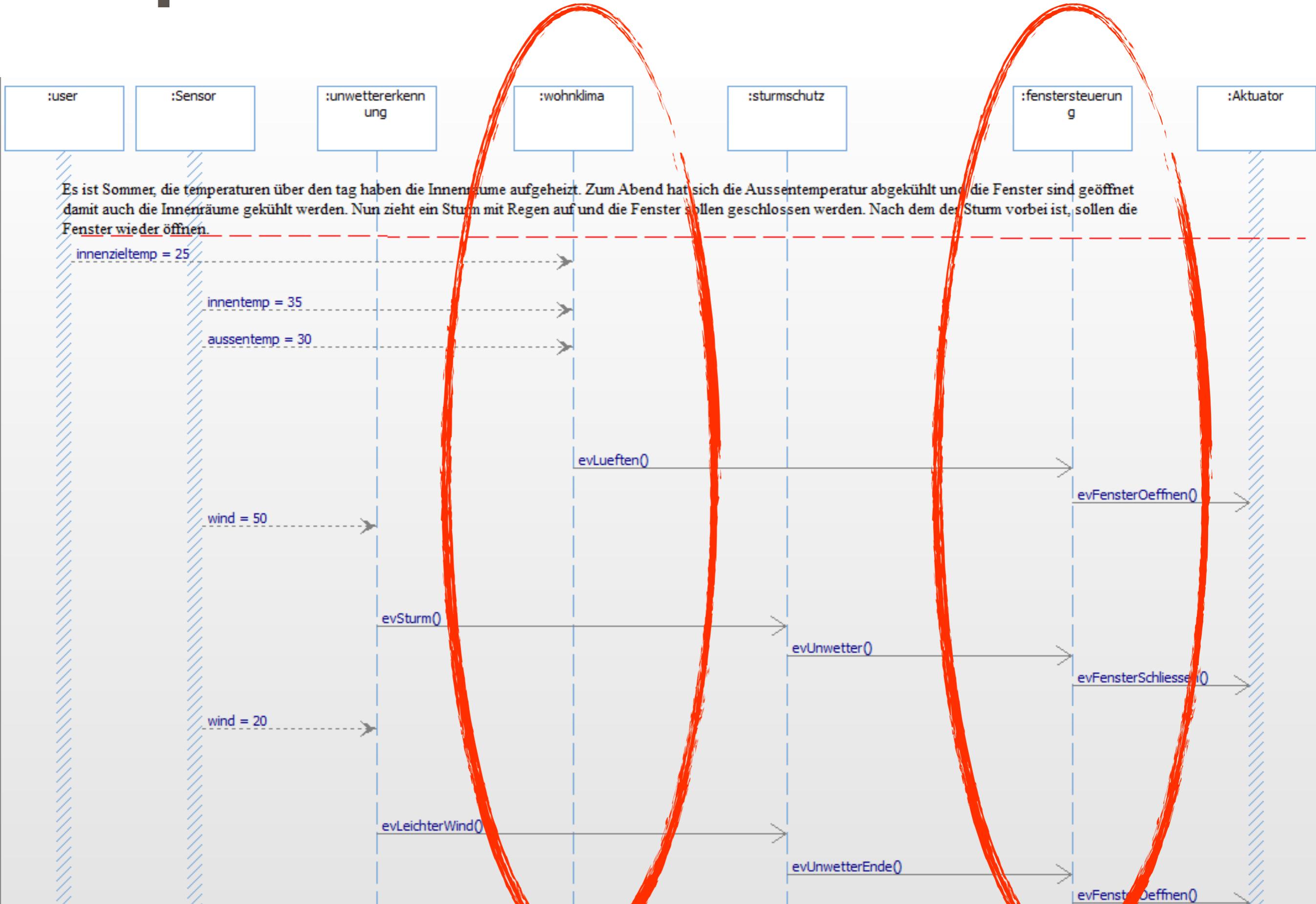
# Specification



# Software Design



# Specification

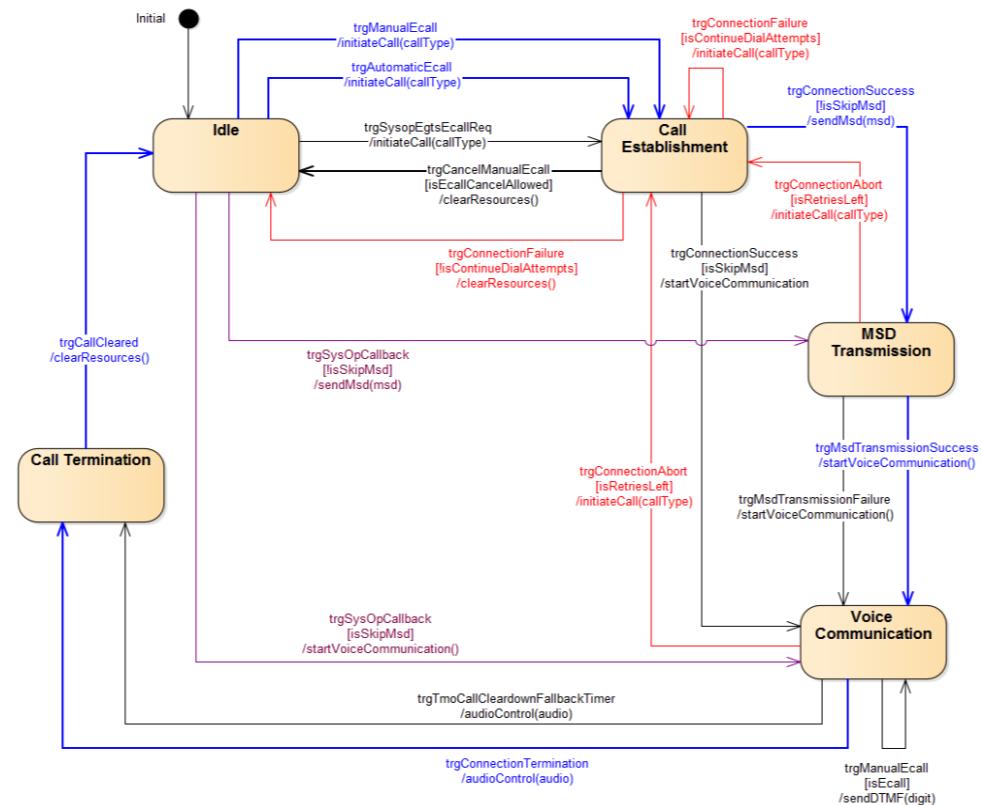


# DEMO

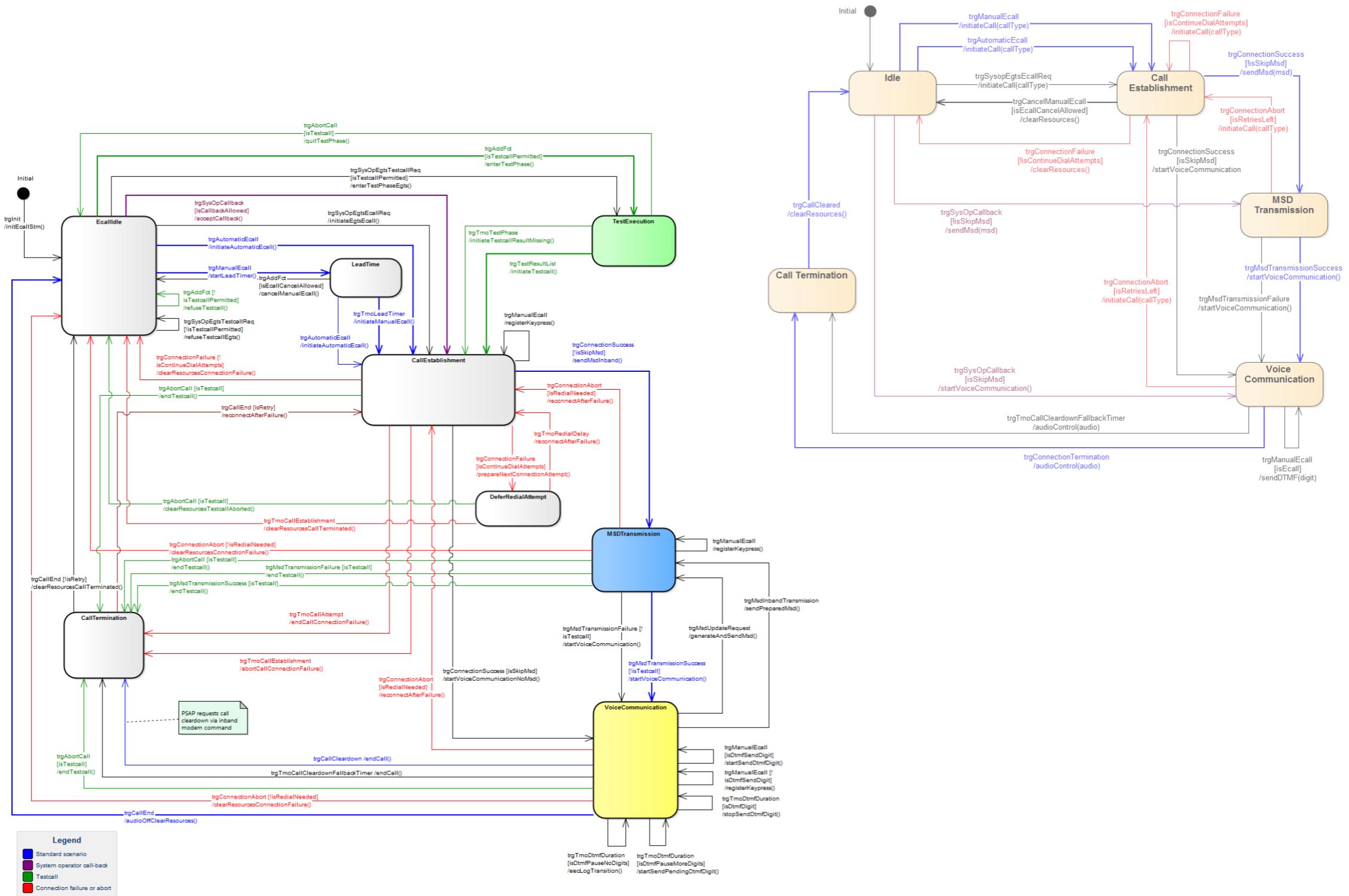
BY HARTMUT WITTKE

# Zustandsmaschine

am Projekt Anfang



# ein Jahr später



# MARQUARDT

KEYLESS ENTRY/GO FOR DAIMLER



**WILLERT.**

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# Modellbasierte\*

## Software- entwicklung für eingebettete Systeme verstehen und anwenden

\*Ein Modell sagt mehr als 1.000 Bilder!

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# Reuse & Automation with Formal Validator

