Safety Concept Description Language (SCDL)
ISO 26262 Safety Concept, Design & Verification

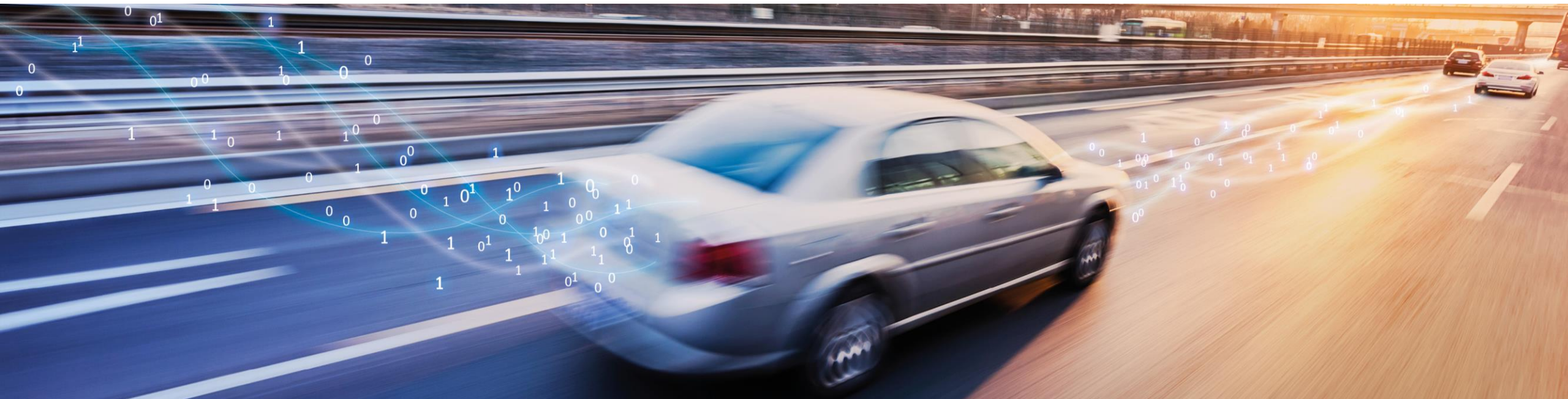**Name**
Dr. Ralf Nörenberg

Company
ASAM e.V.

June 13th, 2018
Munich

ASAM
Association for Standardization of
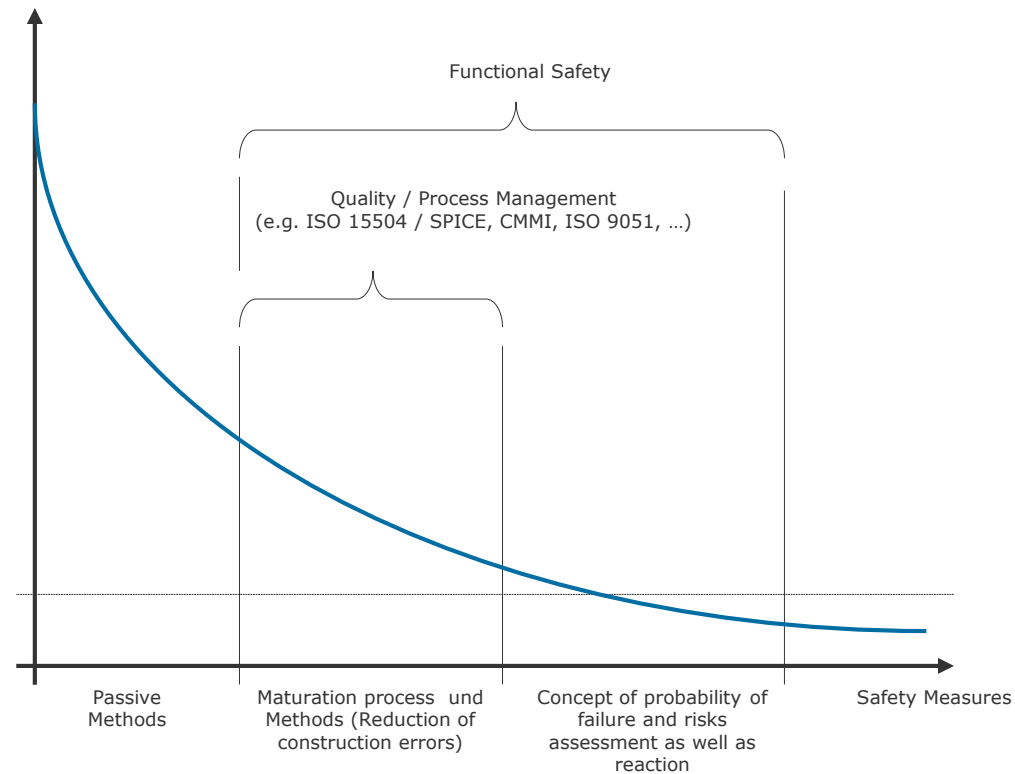Automation and Measuring Systems

Short Introduction into ISO 26262

ASAM

Short Introduction into ISO 26262

Definition of Functional Safety

ISO 26262 is an obligatory guideline to ensure „Functional Safety" of Electric/Electronical Systems (E/E) in passenger cars.
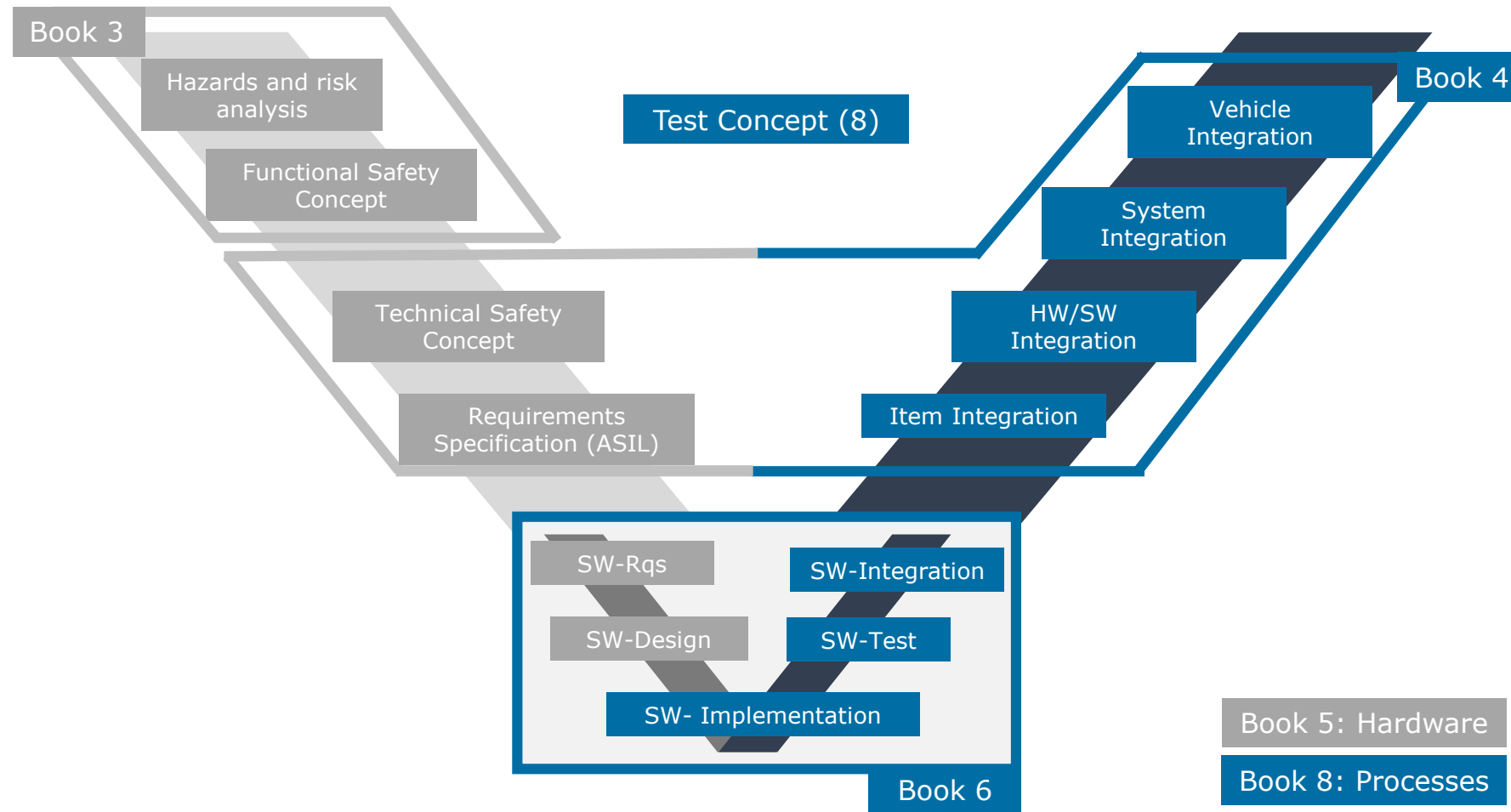

Functional Safety is the absence of none-acceptable risks of potential hazardeous situations that may be introduced by misconduction of E/E systems.
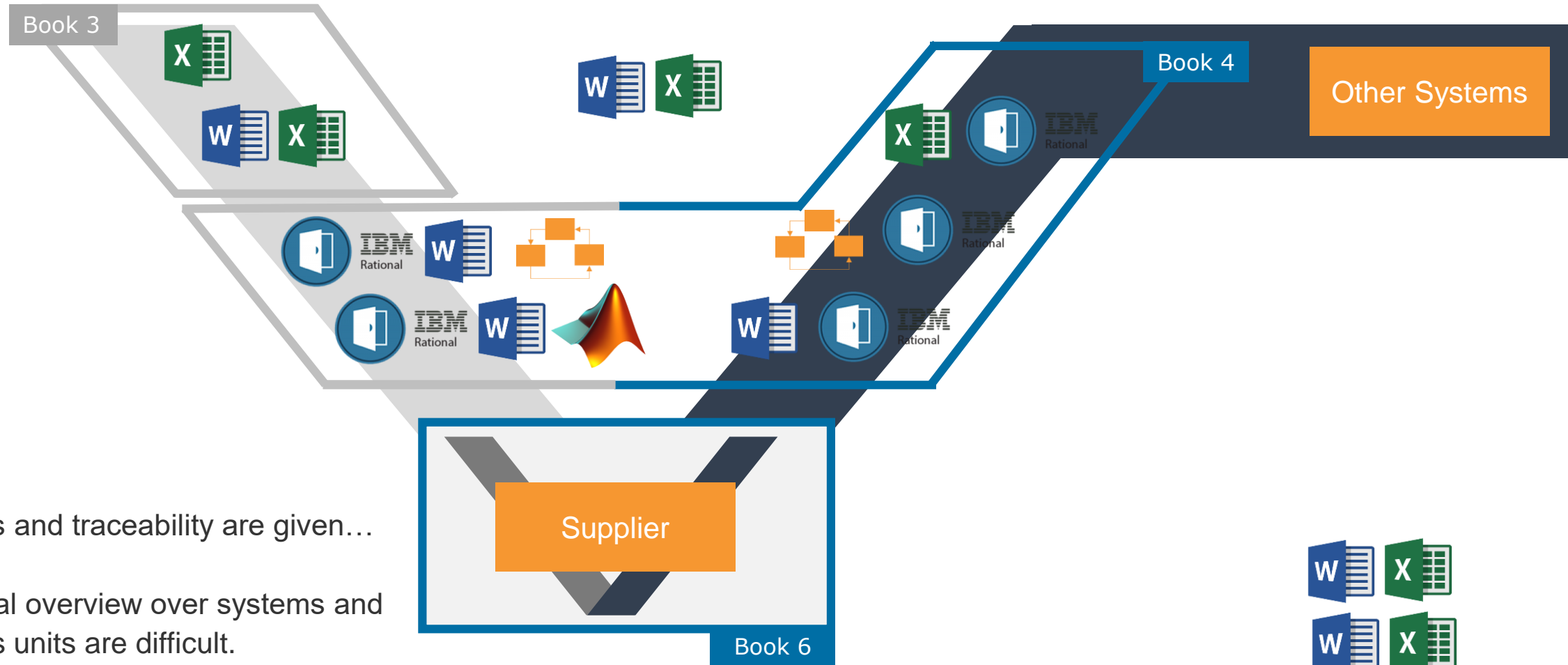
(1-1.50; ISO 26262, Book 1, Chapter 1, Section 50)

ASAM

Short Introduction into ISO 26262

ISO 26262 and the V-Model

Book 3

Hazards and risk analysis

Functional Safety Concept

Test Concept (8)

Vehicle Integration

Book 4

System Integration

Technical Safety Concept

HW/SW Integration

Requirements Specification (ASIL)

Item Integration

SW-Rqs

SW-Integration

SW-Design

SW-Test

SW- Implementation

Book 6

Book 5: Hardware

Book 8: Processes

ASAM

Safety Concept Description Language (SCDL)

Artefacts and Traceability

Book 3
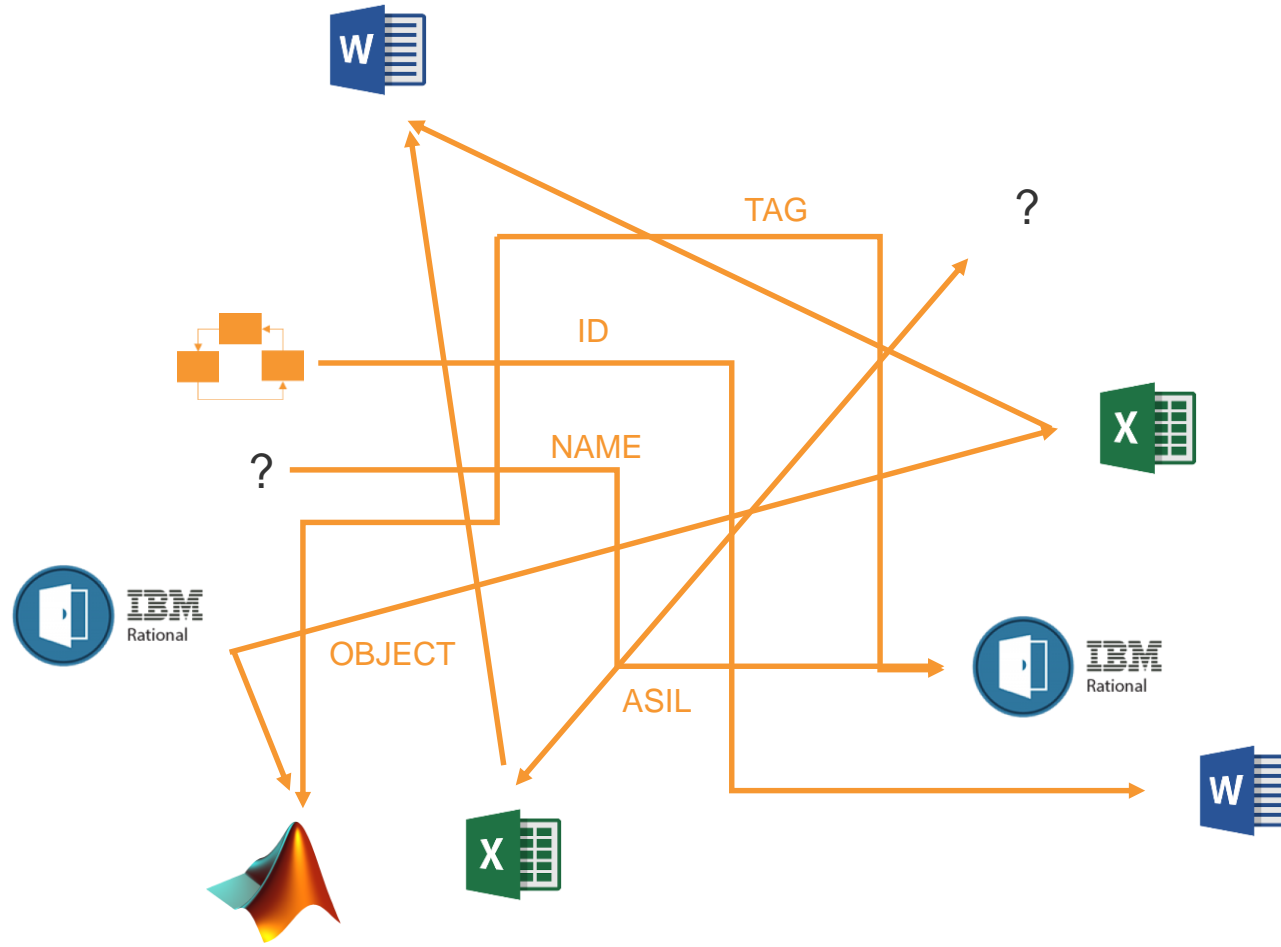
Book 4

Other Systems

Supplier

Book 6

Artefacts and traceability are given…

…general overview over systems and business units are difficult.

ASAM

Safety Concept Description Language (SCDL)

Artefacts and Traceability

We see a lot of proprietary solutions.

(Market analysis still to be done).

Safety Concept Description Language (SCDL)

Safety Concept Description Language (SCDL)

Introduction

SCDL as a vendor-independent language targets on modeling methods of ISO 26262 requirements by providing intuitive graphical representations and straightforward processes. Tool implementations support to develop, design, analyze and verify ISO 26262 artefacts. Interoperability and -exchangeability of methods and artefacts are provided.

- SCDL is a language with a UML metamodel based syntax to provide semantics for effective and efficient implementation of ISO 26262
- SCDL fulfils requirements on semi-formal notation for all ASIL levels
- SCDL provides graphical Function Block / Data Flow Diagram representations for tool-based Functional Safety development

Group Size:	~ 50 Japanese OEMs and suppliers
Spec. Phase:	~ 4 years
Matureness:	~ Prototypes started
Tooling:	~ Development started

ENTERPRISE ARCHITECT

SCDL Add-in Manual
by SparxSystems Japan

Safety Concept Description Language (SCDL)
Add-in Tutorial for Enterprise Architect

Version 1.1

Updated: 27/11/2017

SPARX
SYSTEMS

1

ASAM
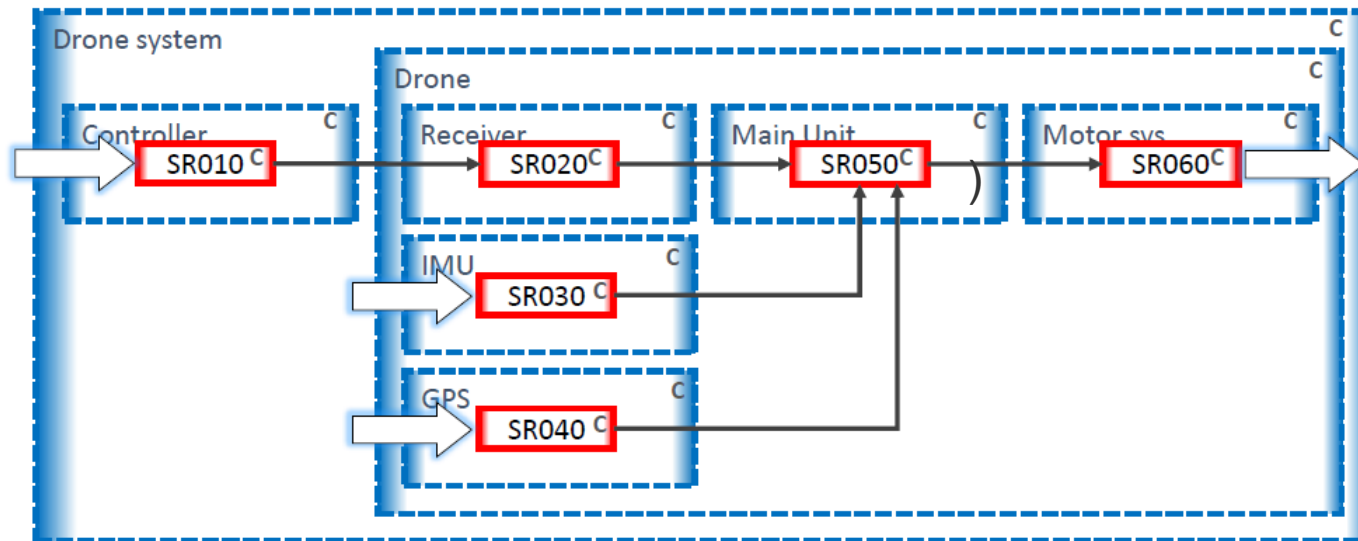
Safety Concept Description Language (SCDL)

Use-Cases

- SCDL is utilized as a standardized representation to support development and verification of Functional / Technical Safety Concepts and requirements (better overview)
- SCDL and its graphical representation are intuitive and easy to understand and are used as a basis to commonly discuss and further develop ISO 26262 related aspects (less errors)
- SCDL provides graphical representation for most ISO 26262 artefacts and activities, including analysis, review, test or assessment (centralized access, "standardized verification scenarios")

ASAM

Safety Concept Description Language (SCDL)

Benefits and Future

- SCDL is a vendor-independent language to apply ISO 26262 requirements and design safety architectures
- SCDL supports tool-based development of safety concepts and software interfaces to link most ISO 26262 artefacts (ecosystem?)
- SCDL is not limited to ISO 26262 applications but can be used for other safety designing outside the automotive domain

SCDL is designed by a Japanese Industry collaboration. ASAM e.V. supports the activity and is planning to host and further develop SCDL as a world-wide standard and establish a community with tool support.

SCDL has the potential to become basis
to most ISO26262 related activities and artefacts

SCDL-Workshop
on Sept. 05, 2018 in Munich

We invite all ISO 26262 and Functional Safety experts from automotive OEMs and suppliers to contribute and discuss their requirements and work with us on the further development of the standard.

To register and for further details, please go to our website: www.asam.net/conferences-events

◇ ASAM

Thank you for your attention!

Dr. Ralf Nörenberg
Member of Board, ASAM e.V.

Phone: +49 176 10474402
Email: ralf.noerenberg@asam.net

ASAM