

Automotive Cybersecurity

Mastering the Process Challenge

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2023-02-21

Agenda

- Introduction
- The Automotive Process Standards Landscape
- More Details about selected Cybersecurity-related Standards
- The Process Trap and how not to fall into it
- Demo of a Framework for Integrated Development with Cybersecurity



The Presenter

Erich Meier

PhD in Computer Science

20+ years of experience in automotive, aerospace/defense, and medical device development processes

Product owner of “Stages” process management solution



The Audience

Process

Cybersecurity Experts

Protection of systems, communication networks and control algorithms from attacks, damage, unauthorized access, or manipulation

Management & Organization

Maintain security, safety, quality, etc. across the whole organization

- Operations (IT, finance, etc)
- Supply Chain
- Manufacturing

Development & Engineering

Create secure, safe, high-quality products and services

The Automotive Process Standards Landscape

Quality

Automotive SPICE

Systems, Software,
Hardware, Mechanical
Engineering

IATF 16949

Quality Management

Safety

ISO 26262

Road Vehicles
Functional Safety

ISO 21448

Safety of the Intended
Functionality (SOTIF)

Security

ISO 27001 / TISAX

Organizational Security

ISO 21434

Road Vehicles
Cybersecurity

ISO 24089

Road Vehicles Software
Update Engineering

ISO 21434: Road Vehicles Cybersecurity Engineering

- Organizational cybersecurity management
- Project-dependent cybersecurity management
- Distributed cybersecurity activities
- Continual cybersecurity activities
- Concept phase
- Product development phase
- Post-development phases
- Threat analysis and risk assessment methods

Management &
Organization

Development &
Engineering

ISO 24089: Software Update Engineering

Organization

Rules, Policies, Processes, Continuous Improvement, Audits

Project

Plans, Results, Tailoring, Interoperability, Integrity

Infrastructure

Cybersecurity Risks,
Vehicle Configuration
Infrastructure, Management of
Packages and Campaigns

Vehicle

Safety and Cybersecurity Risks,
Vehicle Configuration,
Communication,
Update Operations

Update Package

Targets, Software, Metadata, Verification & Validation, Release Approval

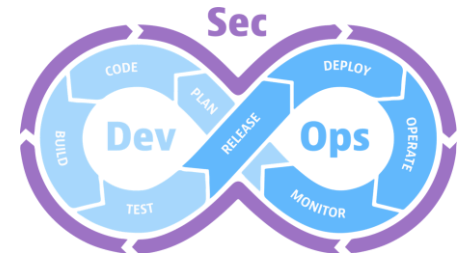
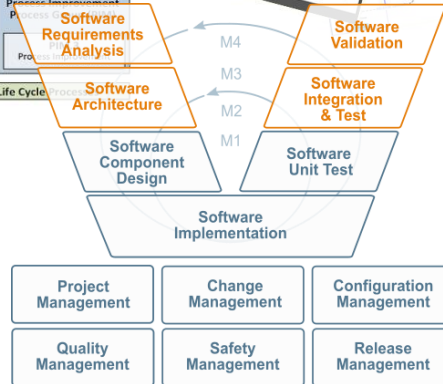
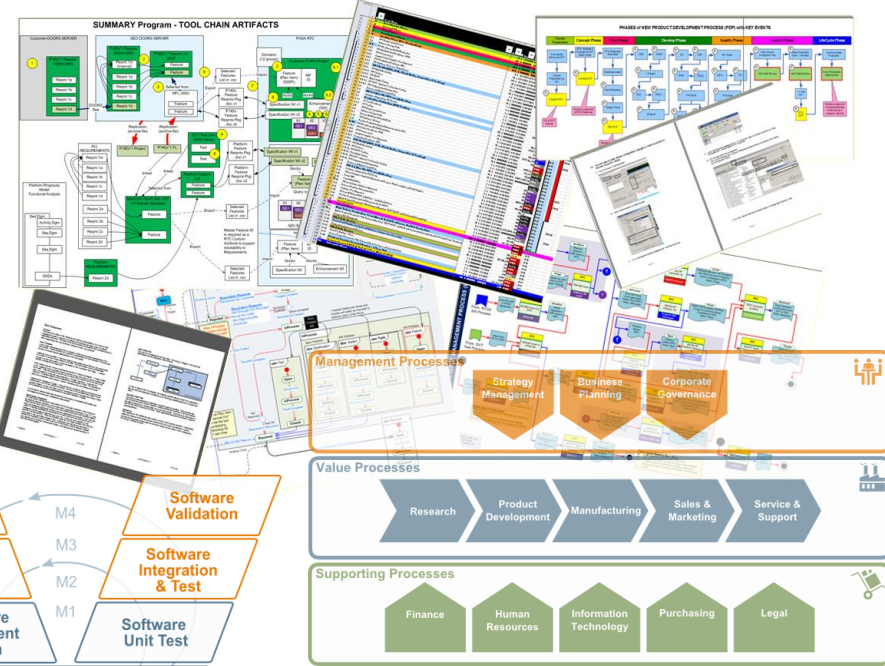
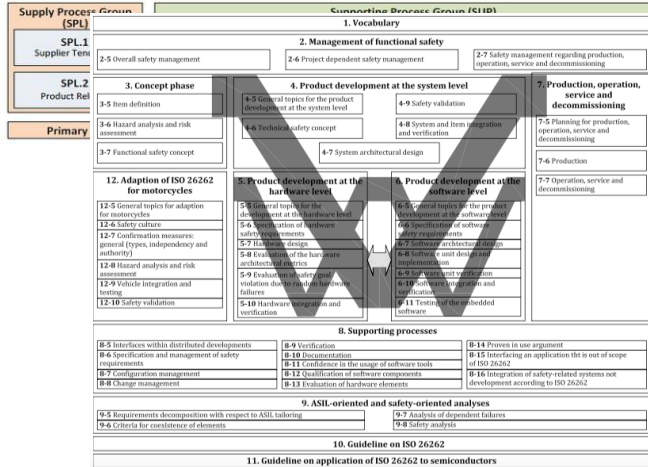
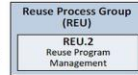
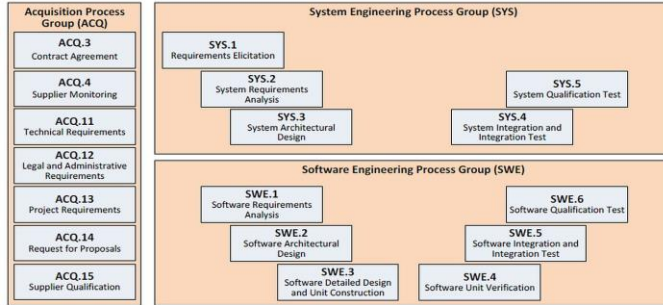
Update Campaign

Preparation, Execution, Completion

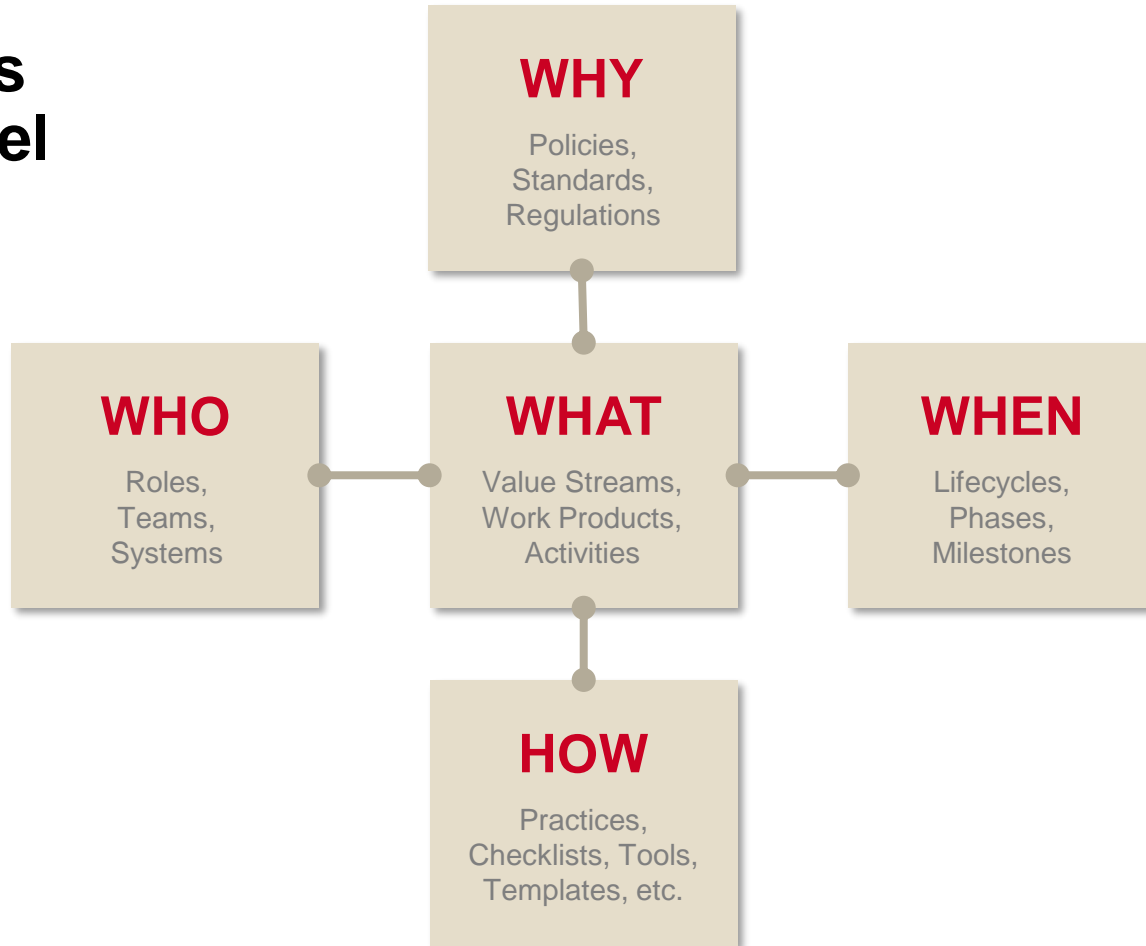
Selected References:

ISO/IEC/IEEE 15288
ISO/SAE 21434
ISO 21448
ISO 26262
ISO/IEC 2700x
ISO/IEC 29100
IATF 16949

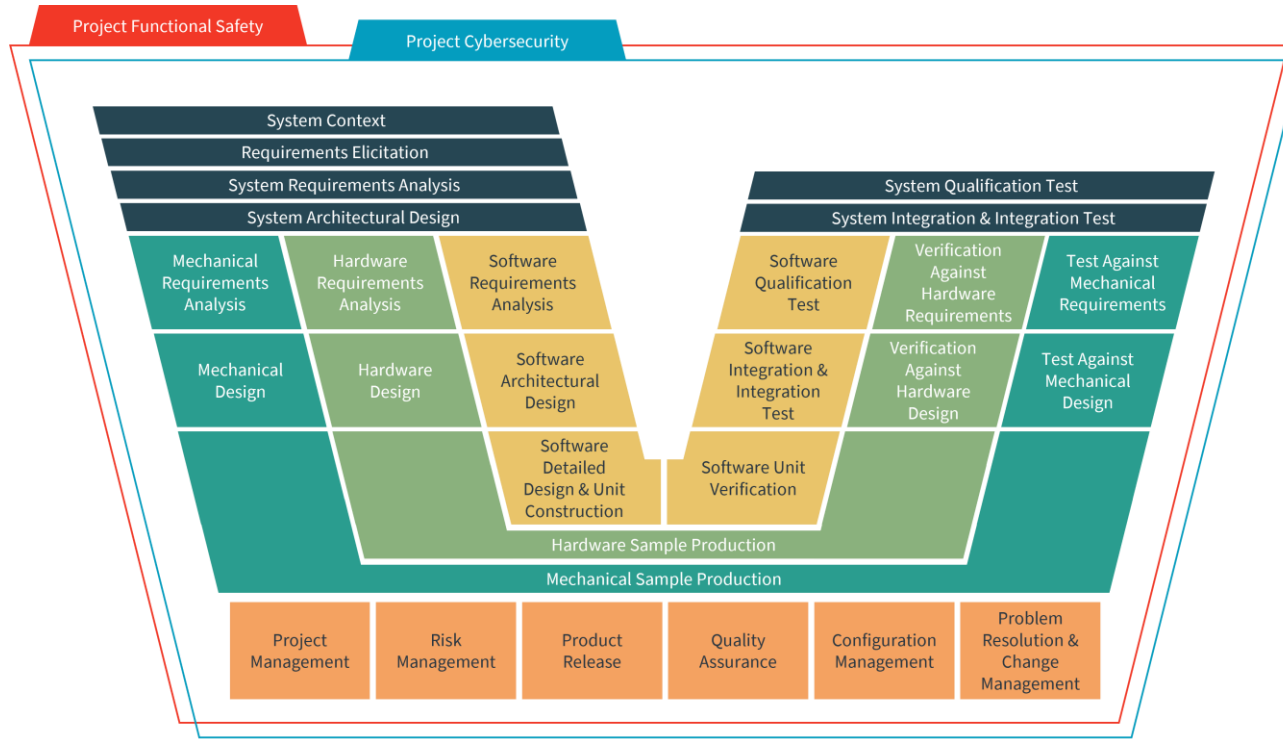
The Process Trap



A Process Metamodel



Let's take a look...



Learn more about...

Our Automotive Process Framework:

<https://www.stages.digital/stages/solutions/automotive-process-management.html>

Our “Stages” product:

<https://www.stages.digital>

Our general UL Solutions Automotive offerings:

<https://www.ul.com/industries/automotive-and-mobility>

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Questions and Comments?





Thank you

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