



From Documents to Feedback-Driven Processes

Jens Walther / Rheinmetall Landsysteme GmbH, Kassel

Agenda

1	Growing Markets	2
2	Process Landscape Today	5
3	Transformation Target	8
4	Product Development Process	11
5	Automotive Process Framework (APF) as Target Picture	16
6	Confluence as Feedback Tool	19
7	Take Aways	23

Growing Markets

Rheinmetall Landsysteme part of Vehicle Systems Europe

- **Military vehicles** for the Western World
- Supplier of the German **Bundeswehr**
- Partnerships across Europe



Revenue
4,0
€ bil

Incoming Orders
7,4
€ bil

Total Employees
>7000

Growing Markets

Engineering Department at RLS

1.114 Engineers in
Kiel, Hamburg, Unterlüß, Kassel, Neuss
+ Capacities in NLD and HUN

2019:

517

2026:

1.257 (end of 2026)

250 Projects



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Process Landscape Today

Changing Environment: Before Ukraine-War and Today

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> ▪ Mostly Contract Manufacturer <ul style="list-style-type: none"> ▪ Engineering according to provided specification ▪ Long term In-Service-Support |  | <ul style="list-style-type: none"> ▪ Full new OEM Projects <ul style="list-style-type: none"> ▪ System Engineering is key |
| <ul style="list-style-type: none"> ▪ German Company <ul style="list-style-type: none"> ▪ Main Customer: Bundeswehr ▪ German only Communication |  | <ul style="list-style-type: none"> ▪ International Corporation <ul style="list-style-type: none"> ▪ Main Customers: Western World Armies ▪ English as primary language |
| <ul style="list-style-type: none"> ▪ Organization stability <ul style="list-style-type: none"> ▪ Same setup, same people ▪ Desk to Desk Communication |  | <ul style="list-style-type: none"> ▪ Growth <ul style="list-style-type: none"> ▪ More people, more locations, more projects ▪ Shift to a Matrix-Organization |
| <ul style="list-style-type: none"> ▪ Focus Mechanical Engineering <ul style="list-style-type: none"> ▪ Steel welding as key competence |  | <ul style="list-style-type: none"> ▪ Software and Connectivity <ul style="list-style-type: none"> ▪ New war strategies, new digital solutions |

Process Landscape Today

The Legacy Process: Workflows and Documents

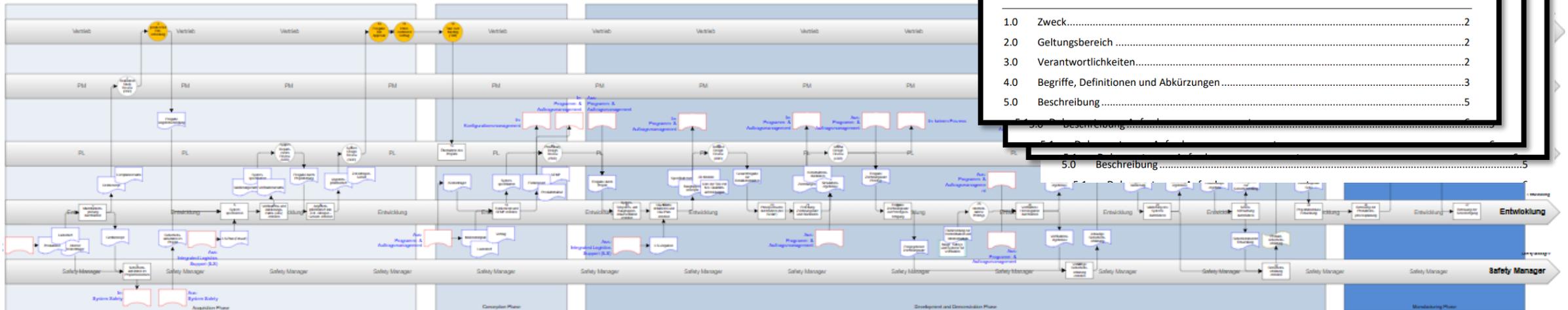
- Tool Environment **sycat**:
 - Business processes documented in **swim lanes** and **PDFs**
 - **Product Development** described in a single flow diagram
 - 63 Documents, mostly in German language
 - No Link to execution, limited feedback system
- Lack of details and some inconsistencies
 - Gives reason to “ignore” the processes at all

Kurzbezeichnung	Bezeichnung	Ausgabedatum
CP02-RLS-001	Anforderungsmanagement in der Entwicklung	20.12.22
CP02-TAC-002	Normenmanagement	12.04.24
CP02-TAC-005	Unabhängigkeitserklärung System Safety	25.06.20
CP02-TAC-014	Verfahrensweisung F&T	24.01.25
CP02-TAC-014-A001	F&T Dokument Lieferantenanmeldung - Hier Informationabblatt UAN	30.04.25
CP02-TAC-014-A002	F&T Dokument Lieferantenanmeldung - Hier Übersicht Vorhaben	30.04.25

	Anforderungsmanagement in der Entwicklung	Dok-Nr.	CP02-RLS-001
		Version	2.0

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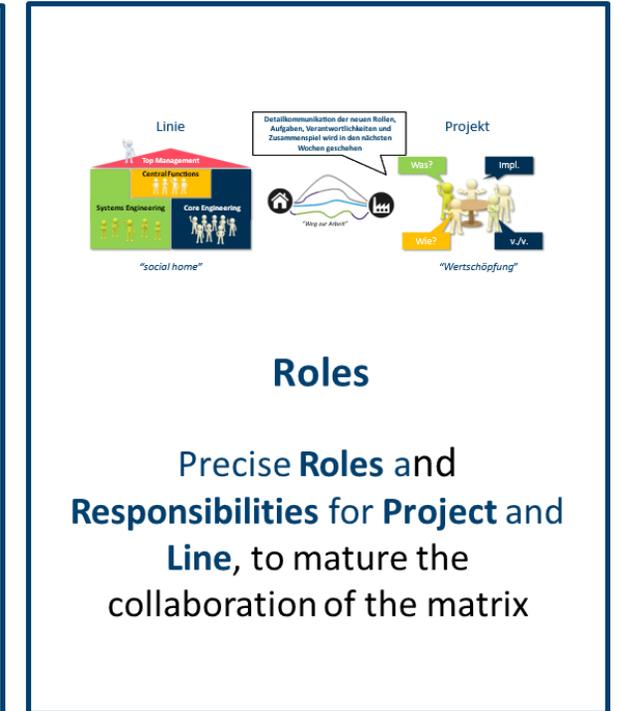
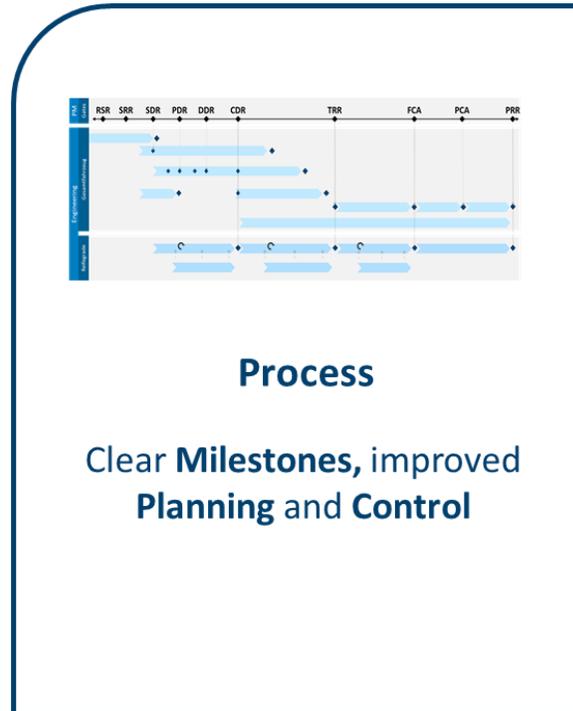
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Transformation Target

Process Transformation: Objectives

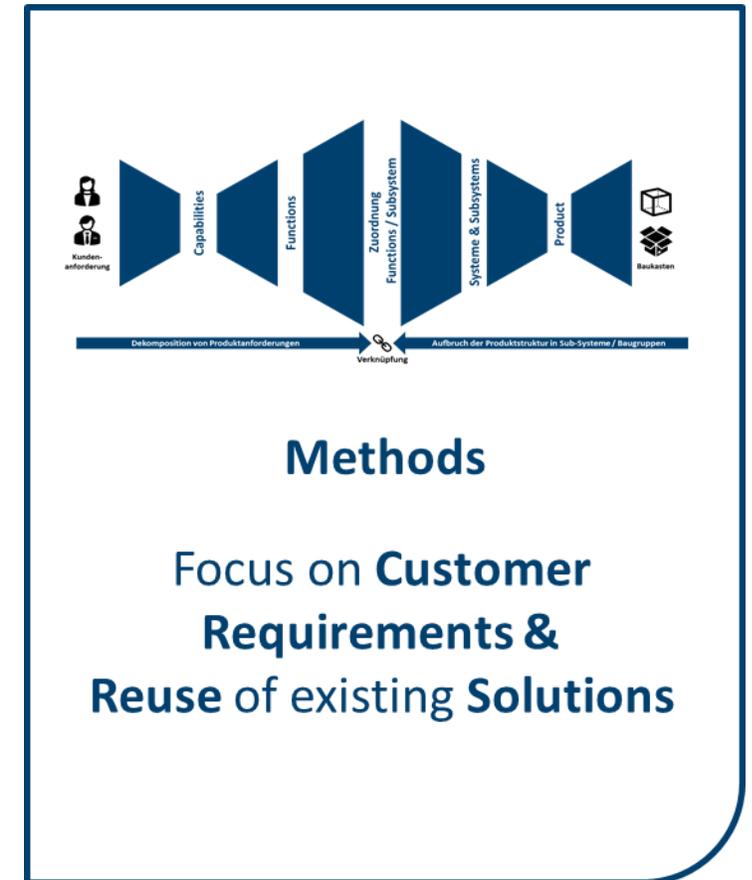
- **Consistent Process**
 - Clarity regarding roles and their responsibilities
- **In-House to System House**
 - Ability to handle complex supply chain
- **Iterative Approach**
 - Away from the classic Waterfall
- **Maturity and Quality Levels**
 - Implementation for A-D Sample phases
- **Higher Software Load** in future Products
 - Handling complexity



Transformation Target

Road to Product Line Engineering: Re-use

- Feature-oriented **Product Line Engineering** as goal
 - From Bid-Phase to Production expected improvements by re-use
 - **Quality** and **longevity** of the products
 - Engineering **efficiency**
 - Better **cost** control
- Ongoing Improvement Initiatives:
 - **Generic Capabilities and Requirements Database**
 - **Functional Decomposition in MBSE**
 - New **Modular Product Structure**
 - New **Work Break-Down Structure**
 - **Project and Process Metrics Dashboard**

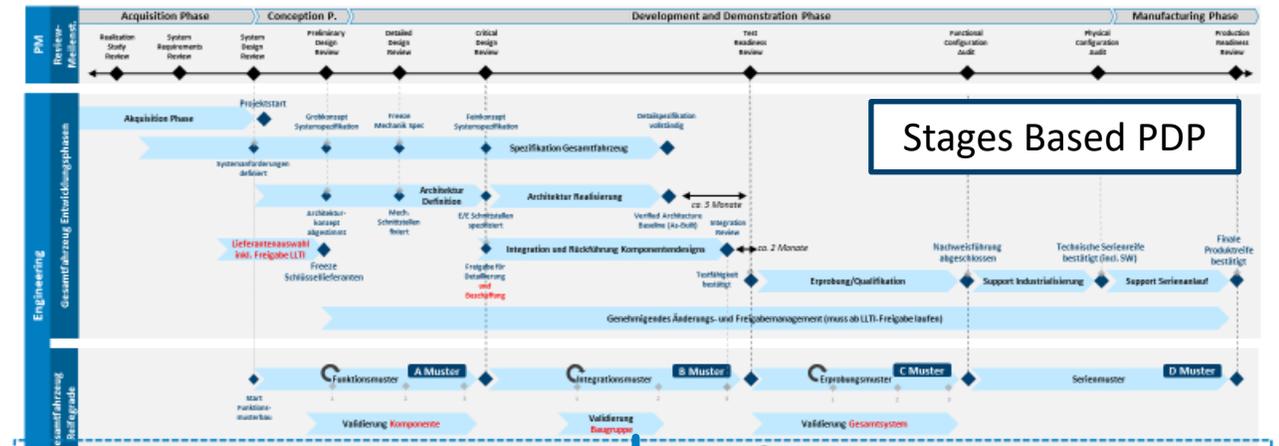


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Product Development Process Roadmap: Milestone 1 - PDP Graphic

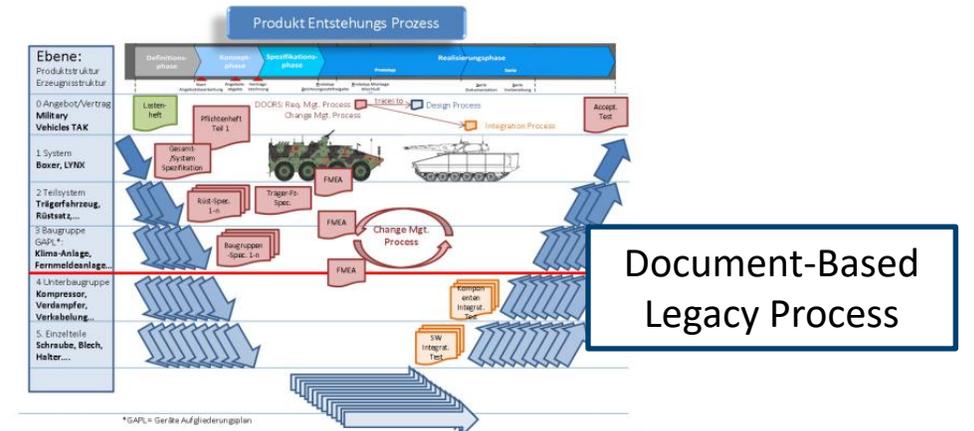
- **Defined Modelling Target**
 - Selection of relevant Norms
 - Stages Modelling Guideline
- **System Level Stages and Gates**
 - Defined internal and external Milestones
 - Phases and Work Product Lifecycles
- **Interfacing with Legacy Core Engineering Processes**
 - Link to established Process Documents



Interface to Legacy Processes in the Core Engineering Disciplines

RHEINMETALL	Vorgaben zur Systementwicklung	Dok-Nr.	CP02-TAC-003-A020
		Version	2.0

Bei der Erstellung der Dokumente im Entwicklungsprozess sind die geforderten Funktionen und Leistungsparameter den verschiedenen Teilsystemen/ Baugruppen zuzuordnen und die weiteren Anforderungen abzuleiten, wie in der folgenden Abbildung dargestellt:



Product Development Process

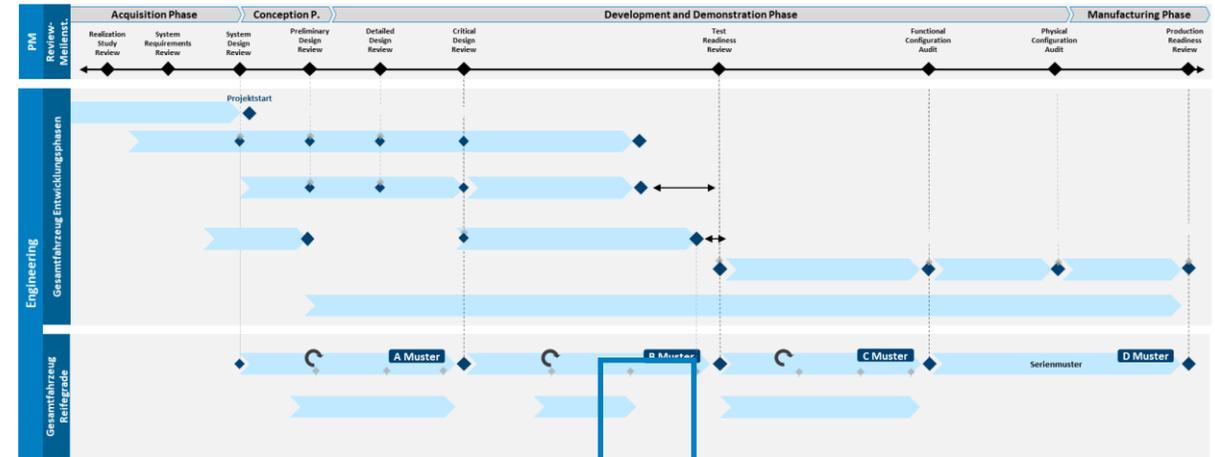
Norms and Standards: System Engineering

- What and When?
 - **ISO 15288.1:** Application of System Engineering to Defense Programs
 - **AAP-48:** NATO Lifecycle Processes
 - **ISO 24748-8:** Technical Reviews & audits
- How?
 - **Data Item Descriptions** as part of the Integrated Product Support Contracts (**IPSC**) framework
 - **Functional Safety** in accordance to **IEC 61508**
- How good?
 - A tailored Advanced Product Quality Planning (**AQPQ**) approach
 - Maturity Level Model linked to **TRL** or **VDA New Parts Maturity Model**

/STANAG 2021/ MILITARY LOAD CLASSIFICATION OF BRIDGES, FERRIES, RAFTS AND VEHICLES ED. 9 Standardization Agreement
/STANAG 2805/ FORDING AND FLOTATION REQUIREMENTS FOR COMBAT AND SUPPORT GROUND VEHICLES Standardization Agreement
Reference code / Naming / Publisher
/AEP-54/ (RESTRICTED) COLLECTIVE PROTECTION (COLPRO) IN A CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR (CBRN) ENVIRONMENT ED C Allied Engineering Publications
/AEP-55 Vol. 3/ PROCEDURES FOR EVALUATING THE PROTECTION LEVEL OF ARMoured VEHICLES - IED THREAT Allied Engineering Publications
/AEP-88/ REPRESENTATIVE TARGET - UNFORTIFIED AND FORTIFIED STRUCTURES Allied Engineering Publications
/AEP-4754 IV/ NATO GENERIC VEHICLE ARCHITECTURE (NGVA) FOR LAND SYSTEMS VOLUME IV: CREW TERMINAL SOFTWARE ARCHITECTURE Allied Engineering Publications
/AMovP-6/ ALLIED MULTI-MODAL TRANSPORTATION OF DANGEROUS GOODS DIRECTIVE
/AOP-15/ GUIDANCE ON THE ASSESSMENT OF THE SAFETY AND SUITABILITY FOR SERVICE OF NON-NUCLEAR MUNITIONS FOR NATO ARMED FORCES Allied Ordnance Publications
/CP02-TAC-003-A100/ Rheinmetall Cyber Security Process & Guidelines
/CP02-TAC-003-A102/ Rheinmetall Cyber Security Process & Guidelines
/EG 1907/2006/ REGULATION CONCERNING THE REGISTRATION, EVALUATION, AUTHORISATION AND RESTRICTION OF CHEMICALS (REACH) Regulation of the European Parliament
/EN 60068-2-27/

Product Development Process Design and Stages Implementation

- Use of Input from the **Engineering Management**
 - Consolidated as **Image Map Graphics** in Stages
 - Scaffolding of the **Engineering Lifecycle**
- **System Engineering** phases and gate requirements
 - Implement re-use paradigm
 - Establish high quality product conceptualization
 - Long-life cycle support, maintainability
- Identify **Process Metrics** for each gate
 - First-Pass-Yield of Gate criteria
 - Phase Lead Time
 - Efforts and Costs



Product Development Proce... RH PROCESS MODULES

Process

Workflows and Activities FOLDER

Work Products FOLDER

Roles FOLDER

Phases and Milestones

Search for process content

Process

DESCRIPTION

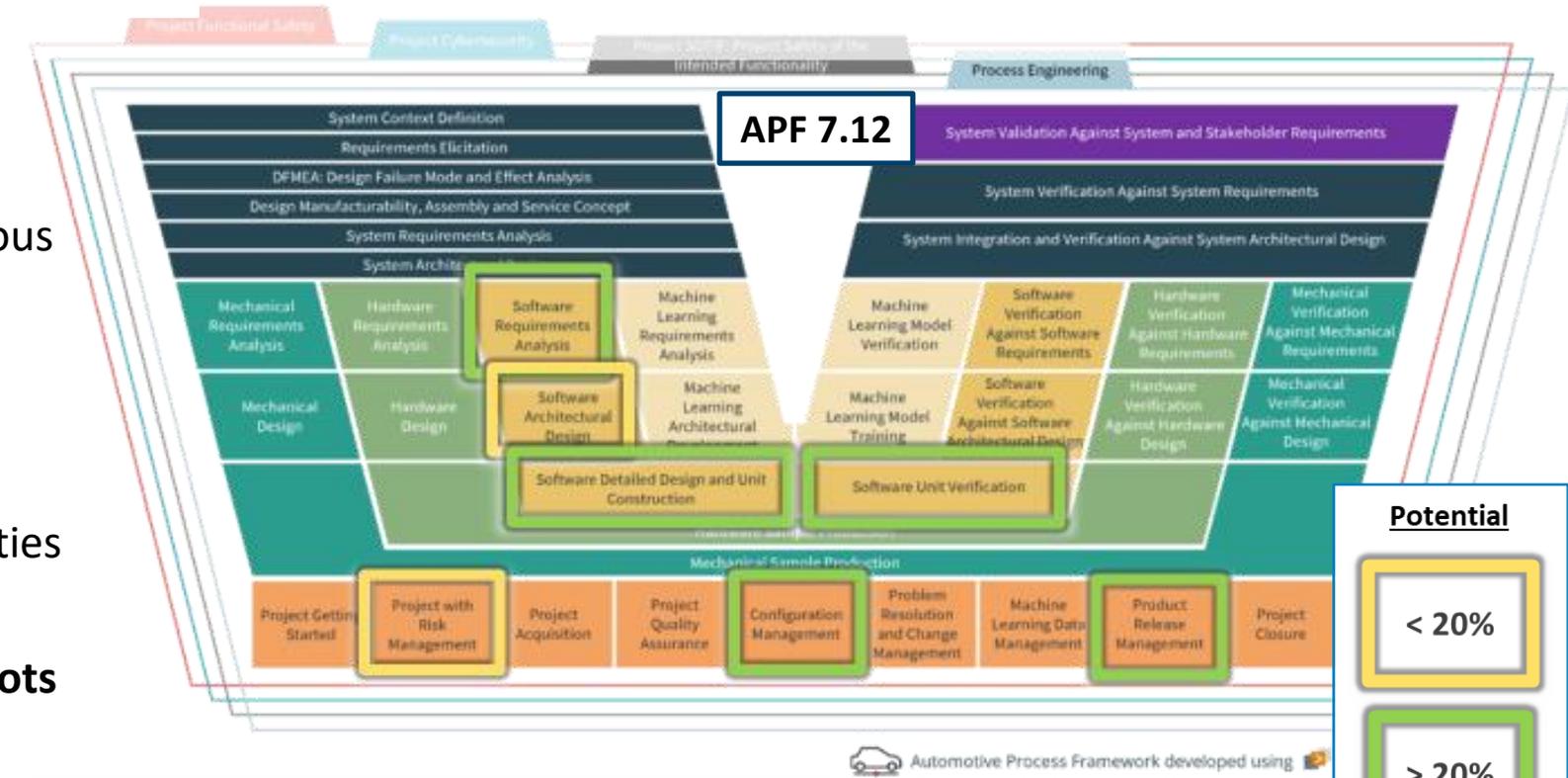
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APF as Target Picture

Core Engineering improvements

- MethodParks APF provides a **target scenario** for **Core Engineering** Disciplines
 - Basis for internal discussions
 - Lack specific military aspects
- Additional transformation aspects
 - Modernize Toolchain, e.g. Continuous Integration
 - Change of role responsibilities
- Identify Key Areas with **efficiency gaps**
 - Adjust flows, roles and responsibilities
- Define and execute new approach in **pilots**

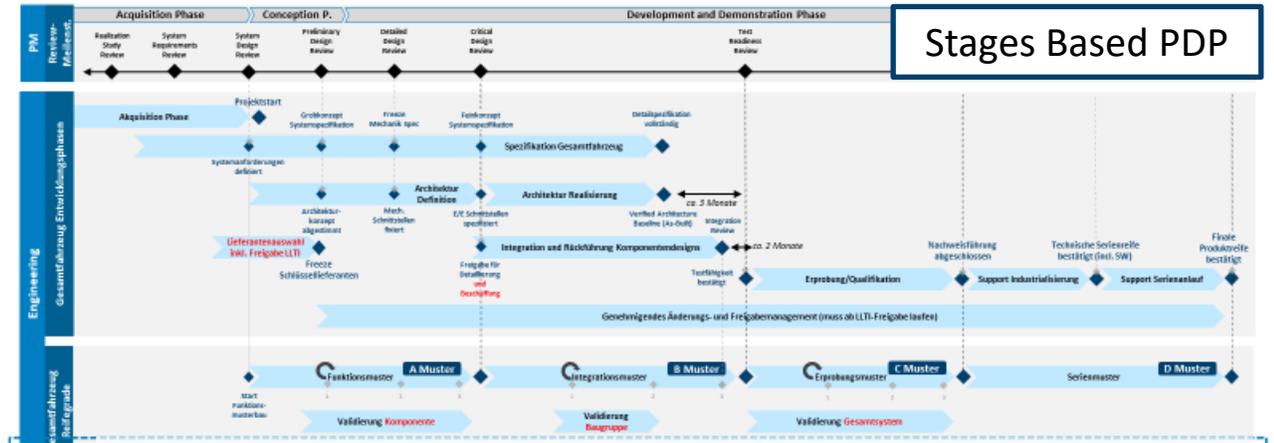


19.01.2024

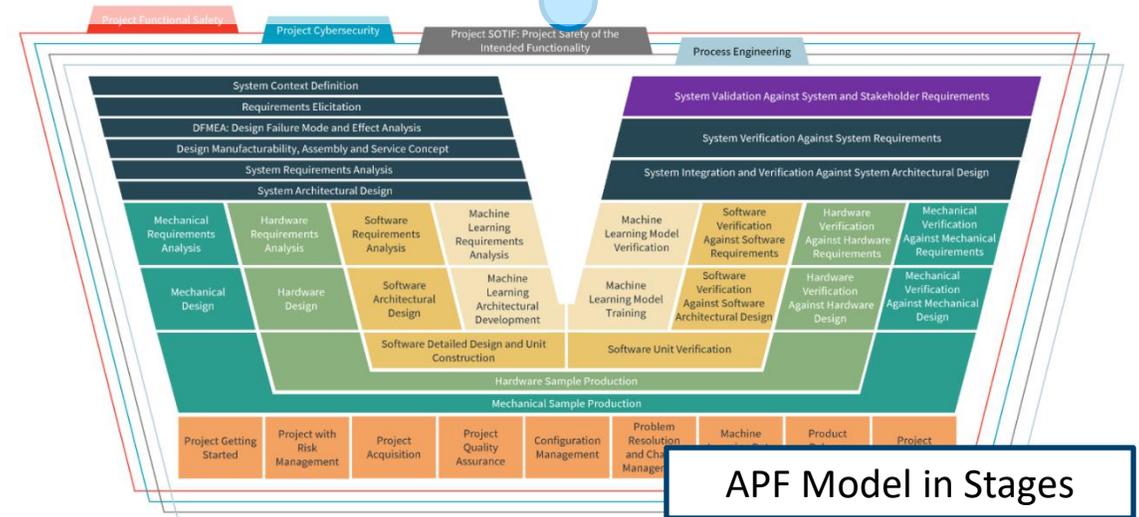
APF as Target Picture

Roadmap: Milestone 2: APF Link, Piloting

- Complete the Engineering Process with full APF scope integration
 - Domain Experts work with Process Designers
 - Full Role / RASCI Definition
- Select a Pilot project with key users
 - Roll-out / Training / Feedback method
- Setup Continuous Improvement for the process model content



Integration of APF, incl. Core Engineering Disciplines Roles and Flows



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Confluence as Feedback Tool

Confluence & Stages: Embed the Process in the Projects

- **Confluence pages created alongside the process:**
 - User Guides („Click Instructions“)
 - Methods and Best Practices
- Enhance **Project Management** pages with tailored **Process** pages
 - Separated for Process Areas and Engineering Disciplines
 - Deep-Link to workflows in the Stages Model

Process - Projekt Planung und Management

Created by Jens Walther on Aug 19, 2025 • 1 minute read

- [Stages Modell](#)
 - [Purpose](#)
 - [Main roles](#)

Stages Modell

Projektplanung und Management

[FLOW](#) [TABLE](#) [GRID](#)



```

graph LR
    A[ROM-Angebot] --> B[Angebotsunterstützung]
    B --> C[Planung von neuen Engineering Projekten]
    C --> D[Rollierende Planung und Steuerung von Engineering Projekten]
    D --> E[Projektabschluss]
          
```

Purpose

The Project Planing and Management Process defines the roles, activities and work products that are mandated to realize an RLS product. For details pls click the diagram.

Main roles

Role	Purpose	Stages Link
Engineering Planner	Responsible for the Planning process execution	EP: Engineering Planner - 10 xxx Engineering Planning
E-PMO	Responsible for Project Reporting and Plausibility Checks	ECP-2: E-PMO - 10 xxx Engineering Planning
Multiprojekt Planer	Responsible for resource splitting across PE/TL/Programs	MPP: Multiprojekt Planer - 10 xxx Engineering Planning

Confluence as Feedback Tool

Confluence & Stages: Different Audience

 **stages**

Go-to-place for Process Experts like
Auditors and Quality Engineers

 **Confluence**

- **Simplified Access Point** for the Engineers and their demands:
 - „Who is having which role in the project?“
 - „What are the milestone dates and what do I need to deliver?“
 - „How do I realize the work product in the project tool environment?“
 - „Why is a process workflow meaningful in my project?“
- **Page and In-Line Comments** offer an easy user feedback interface!

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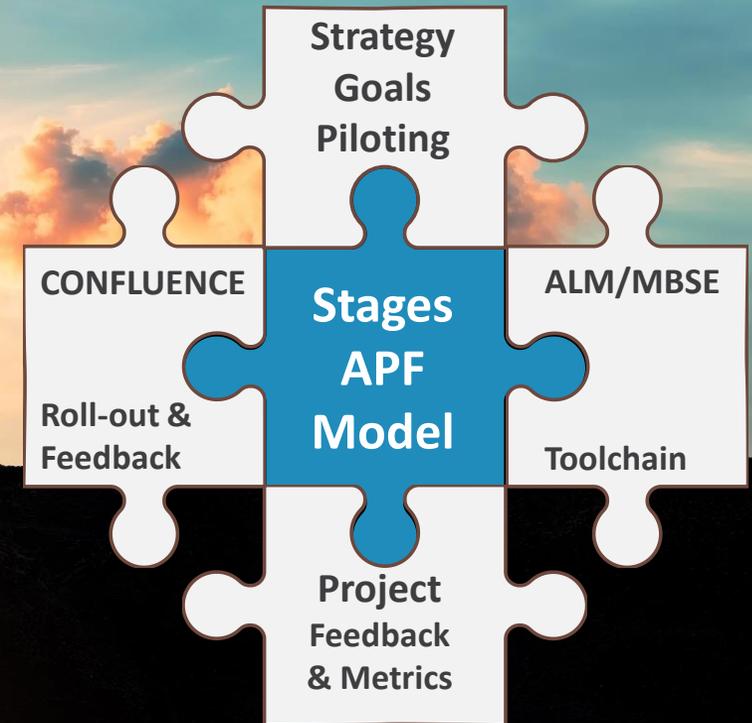
Take Aways

- **An Organization needs to define its goals and objectives**
 - The engineering process needs to match the business context

- **Stages is key to shape our process transformation**
 - Modelling a Product Development Lifecycle matching the standards
- **APF as Target Picture for increased efficiency**
 - Change projects for Core Engineering for increased efficiency

- **A process in Stages alone is not enough**
 - Toolchain modernization is vital

- **Piloting – Feedback – Improvements – incremental roll-out driven by data**
 - Project Metrics tracking gives insights into process adherence
 - Continuous Improvement is enabled by continuous feedback from the users



TAKING RESPONSIBILITY IN A CHANGING WORLD