

apply

reuse

create

Prozesse als Anforderungen

Prozesse in die Teams bringen - in agiler, skalierbarer und systematischer Weise

Systematic

Software-

Engineering



Ralf Bürger

Ralf Bürger hat in den **80**ern Software codiert, wurde in den **90**ern Projektleiter und Berater für Softwareentwicklung, in den **00**ern Spezialist für Methoden der Softwareentwicklung, und in den **10**ern Designer und Coach für Entwicklungsprozesse.

Jetzt in den 20ern fokussiert er sich auf das Design von agilen Entwicklungsprozessen als Anforderungen, auch für plattformbasierte Produktentwicklung.

Ralf lebt in Deutschland, ist verheiratet, und wenn er nicht arbeitet, dann fährt er Fahrrad oder seinen Tesla.

<https://RalfBuerger.de>

<https://ProcessesAsRequirements.info>



PaR Community Partner:



Worum geht's?

- ✓ Standards und Prozesse sollten ein **Exoskelett** sein, das den Teams hilft, sicher und effizient durch die Stürme der Projekte zu kommen.
- ✓ Stattdessen wachsen Prozesse endlos im Laufe der Zeit und werden eher zu einem schweren **Rucksack**, der auch noch von den Projekten getragen werden muss.
- ✓ Wenn die Projektteams die Prozesse als **Mehraufwand** sehen und nicht als **Hilfe**, dann stimmt was nicht.
- ✓ „**was**“ in einem Projekt getan werden soll, wird schon lange als Anforderungen gesehen, z.B. als Lastenheft oder Systemanforderungen.
- ✓ Standards und Prozessen sagen „**wie**“ das „was“ mit bewährten Methoden getan werden kann.
- ✓ Also warum nicht das „wie“ auch als das definieren, was es ist?
 - **Anforderungen**, die dem Projekt sagen „wie“ gearbeitet werden soll.
 - Anforderungen, die wiederverwendet werden können.
 - Anforderungen, die mit den anderen im RE-Tool vereinigt werden können.

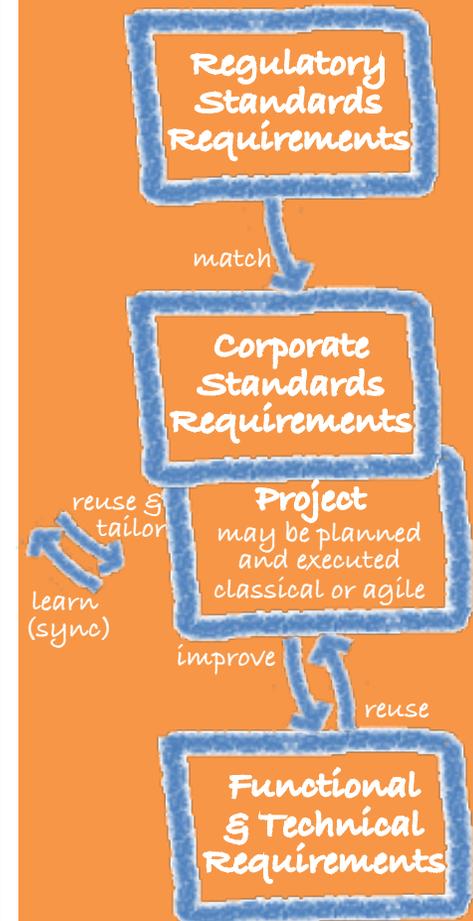


16.Sep.2020

© Ralf Bürger

CC BY-SA 4.0

<https://ProcessesasRequirements.info>



gestalte flexible firmenspezifische Entwicklungsprozesse für alle Projekte

PaR: verwende die Prozesse nach Bedarf als Anforderungspakete im RE-Tool

verbinde regulative Standards mit den eigenen Entwicklungsprozessen

PaR: gestalte die Standards auch als Anforderungen, mit Verknüpfungen

etabliere die eigenen Entwicklungsprozesse und lerne von den Projekten

PaR: vereinige Prozess- und Produktanforderungen, aber verbessere beide

gewährleiste die kontinuierliche Einhaltung von Standards und Prozessen

PaR: nutze die Funktionen des RE-Tools für gegenseitige Verknüpfungen

überwache den tatsächlichen Reifegrad von Projekt und Produkt

PaR: bewerte die Umsetzung von Prozessanforderungen und Rezensionen



16.Sep.2020

© Ralf Bürger

CC BY-SA 4.0

<https://ProcessesasRequirements.info>

PaRis (PaR Informationsystem) - Übersicht



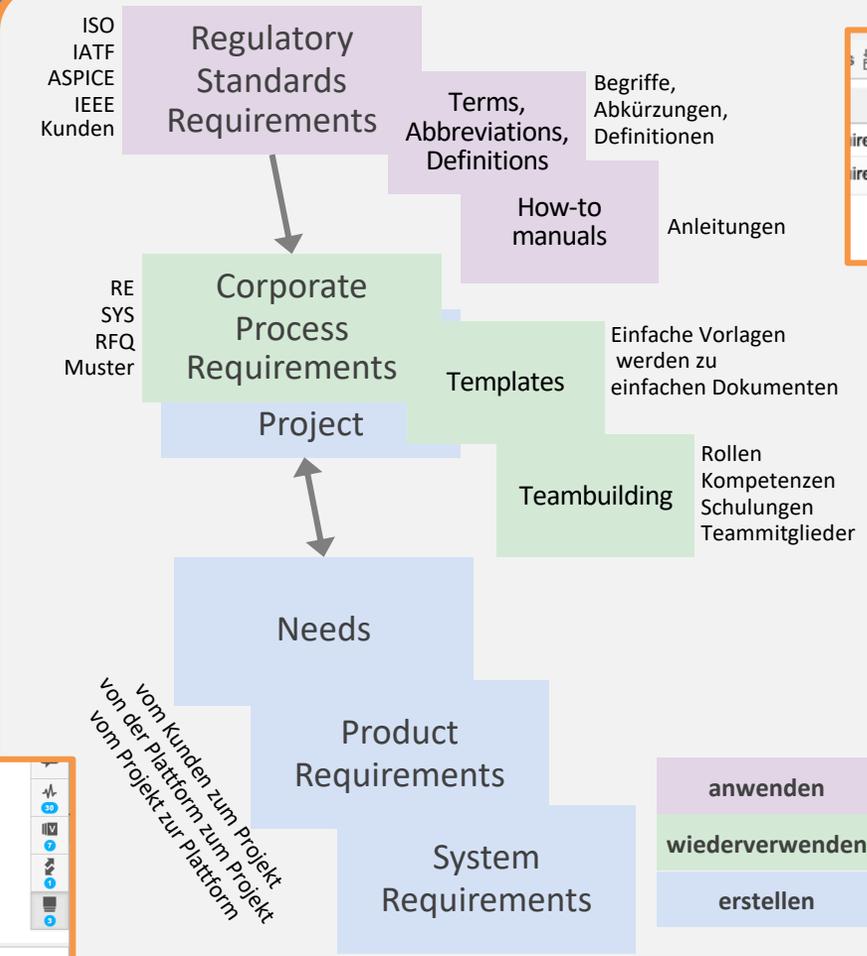
15.Sep.2020
© Ralf Bürger
CC BY-SA 4.0

<https://ProcessesasRequirements.info>

Project Explorer: KoDeCs PaR Process Platform - PaR Automotive - Regulatory Standards - Legal - German StVo - Norms - ISO 9001:2015 - ISO 26262 - ISO 26262-2: Management of functional safety - ISO 26262-3: 5.4.2 define further - ISO 26262-3: 5.4.1 make available - ISO 26262-3: 5.4.2 define further - ISO 26262-3: 5.5 Work products - ISO 26262-3: WP 5.5.1 Item definition - ISO/IEC 26550-26556 SW&Sys Product Line

Action Status Overview: Status in Project (Pie chart showing: to be determined, open, ongoing, completed, done, not applicable)

ID	Name	Status in Project
BMSp-K_COP-45	RFQ: Categorize Project	to be determined
BMSp-K_COP-53	RFQ: Nominate owners for the feature...	to be determined
BMSp-K_COP-42	RFQ: Obtain the needs for the new...	completed
BMSp-K_COP-43	RFQ: Commonly understand the ne...	ongoing
BMSp-K_COP-44	RFQ: Define the purpose and scope...	open
BMSp-K_COP-46	RFQ: Obtain or define the product re...	ongoing
BMSp-K_COP-47	RFQ: Cluster product requirements t...	ongoing
BMSp-K_COP-48	RFQ: Establish bidirectional traceab...	ongoing
BMSp-K_COP-55	for feature "Thermal Control"	open
BMSp-K_COP-56	for feature "AC charging"	open
BMSp-K_COP-57	for feature "DC charging"	open
BMSp-K_COP-62	for feature "Low voltage support"	open



Sync Status (Current Item) - Out Of Sync - Synchronize changes to this item

RFQ: Obtain the needs for the new product or product update - V13

Table Layout:

ID	Name	Type	Satisfied	Suspect
K_PaR_K_REG-105	ASPIRE SYS 1.0P1: Obtain stakeholder requirements and reports		No	No
K_PaR_K_REG-111	ASPIRE SYS 1.1: communication established		No	No
K_PaR_K_REG-40	ASPIRE WP 1.3.04: communication record		No	No
K_PaR_K_REG-93	ASPIRE WP 1.3.10: Review record		Satisfied	No
K_PaR_K_REG-119	ASPIRE WP 1.7.03: Stakeholder requirements		Satisfied	No

Table Fields:

Label	Unique Field Name	Field Type	Control	Pick List	Read Only	Allow API Overwrite	Required	Suspect	Sync	API-ID
Project ID	documentKey	Text Field			✓		✓	✓		1325
Global ID	globalid	Text Field			✓		✓	✓		1328
Name	name	Text Field			✓		✓	✓		1331
Variation Point	variation_point	Pick List		K Variation Point			✓	✓		1557
Explanation	description	Text Box		Rich Text			✓	✓		1334
Directions	directions	Text Box		Rich Text			✓	✓		1463
Status in Project	status_in_project	Pick List		K Status in Project			✓	✓		1466
Release	release	Text Box					✓	✓		1340
Budget estimated (€)	budget_estimated	Integer					✓	✓		1526
Budget needed (€)	budget_needed	Integer					✓	✓		1529
Effort estimated (hrs)	effort_estimated	Integer					✓	✓		1532
Effort needed (hrs)	effort_needed	Integer					✓	✓		1535

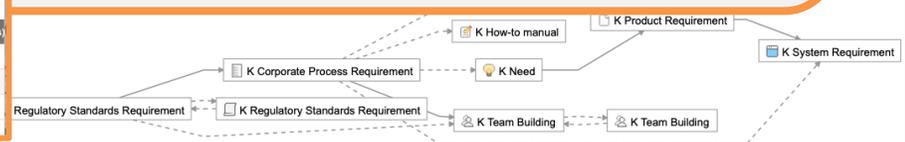
RFQ: Obtain the needs

VARIATION POINT: alternative

EXPLANATION: The needs describe what the project will be good for.

DIRECTIONS: Establish a communication to the potential product owners. Obtain the needs from the established communication. Document all meetings in meeting minutes and relate them to this activity in the project.

ID	Name	Status in Project	Effort estimated (hrs)
BMSp-K_COP-68	RFQ: V1: Obtain the needs for the new product	not applicable	-
BMSp-K_COP-69	RFQ: V2: Obtain the needs for the product update	not applicable	-
BMSp-K_COP-70	RFQ: V3: Obtain the needs for the platform improvement	ongoing	80



COP

Project > Change project

Project "Setup BMS Platform"

1 Corporate Processes

- 1.1 RFQ
 - 1.1.1 RFQ: Project Organization
 - 1.1.2 Platform definition
 - 1.1.3 RFQ: Project Scoping
 - 1.1.3.1 RFQ: Obtain the needs
 - 1.1.3.1.1 RFQ: V1: Obtain the needs for the new product
 - 1.1.3.1.2 RFQ: V2: Obtain the needs for the product update
 - 1.1.3.1.3 RFQ: V3: Obtain the needs for the platform improvement
 - 1.1.3.2 RFQ: Include the collection of needs in the safety item definition
 - 1.1.3.3 RFQ: Commonly understand the needs
 - 1.1.3.4 RFQ: Define the purpose and scope of the product as result of the project
 - 1.1.3.5 RFQ: Categorize Project
 - 1.1.4 RFQ: Requirements Elicitation
 - 1.1.4.1 RFQ: Obtain or define the product requirements.
 - 1.1.4.2 RFQ: Include the collection of product requirements in the safety item definition
 - 1.1.4.3 RFQ: Cluster product requirements to features
 - 1.1.4.4 RFQ: Nominate owners for the features.
 - 1.1.4.5 RFQ: Establish bidirectional traceability of needs and product requirements.
 - 1.1.5 RFQ: Requirements Analysis
 - 1.1.5.1 RFQ: Derive first system requirements from the product requirements
 - 1.1.5.1.1 for feature "Thermal Control"
 - 1.1.5.1.2 for feature "AC charging"
 - 1.1.5.1.3 for feature "DC charging"
 - 1.1.5.1.4 for feature "Low voltage support"
 - 1.1.5.2 RFQ: Include the collection of system requirements in the safety item definition
- 1.2 A-Sample
- 1.3 Team Building
 - 1.3.1 Roles
 - 1.3.1.1 Role: Program Manager
 - 1.3.1.2 Role: Project Lead
 - 1.3.1.3 Role: System Engineer
 - 1.3.1.4 Role: Market Scout
 - 1.3.1.5 Role: Safety Manager
 - 1.3.1.6 Role: Platform Manager
 - 1.3.1.7 Role: Student
 - 1.3.1.8 Role: Feature Owner
 - 1.3.2 Expertise
 - 1.3.3 Trainings
 - 1.3.4 Team Members
- 1.4 Templates (TPL)
 - 1.4.1 Project Organization (TPL)
 - 1.4.1.1 Meeting Minutes (TPL)
 - 1.4.1.2 Project Leader Nomination (TPL)
 - 1.4.1.3 Reason for Deviation (TPL)
 - 1.4.1.4 Escalation Strategy (TPL)
 - 1.4.2 Project Scoping (TPL)
 - 1.4.3 Requirements Management (TPL)

Projekt

Prozesswieder-
verwendung

Prozess-
varianten

Elementauswahl

Produktanforderungen („was“)
mit Prozessanforderung („wie“) vereinigt

Prozessbaum

Learn more | Dashboard: KoDeCs PaR Project "S... | BMS-P-K_COP-54:RFQ: Der...

RFQ: Derive first system requirements from the product requirements - V5

BMS-P-K_COP-54 · K Corporate Process Requirement KoDeCs PaR Project "Setup BMS Platform" » Corporate ...

NAME:
RFQ: Derive first system requirements from the product requirements

VARIATION POINT:

EXPLANATION:
The system has to technically implement the features that the product shall have or do.

DIRECTIONS:
Create the first essential system requirements for the main product features discovered from product requirements analysis.
Avoid frontloading the complete system requirements creation and analysis into the RFQ phase. Instead focus on what must be understood about the system to be able to create a sound offer to the customer. Keep the feature focus, but start aligning it with first architectural design approaches.
Relate the system requirements collection to this activity in the project.
If the system created by this project is considered safety relevant according to ISO 26262 then relate the system requirements collection to the safety item definition.

STATUS IN PROJECT:
● ongoing

RELEASE:
-

BUDGET ESTIMATED (€):
4000

BUDGET NEEDED (€):

Table Layout | Visual Layout | Relate Item(s) | Edit | Filter

ID	Name	Type
10 Upstream Items		
K_PaR-K_REG-138	ASPICE SYS.2.BP1: Specify system requirements.	Satisfied B
K_PaR-K_REG-146	ASPICE SYS.2: 1) system requirements established	Satisfied B
K_PaR-K_REG-147	ASPICE SYS.2: 5) system requirements updated	Satisfied B
K_PaR-K_REG-148	ASPICE SYS.2: 7) requirements fulfilled	Satisfied B
K_PaR-K_REG-149	ASPICE WP 15-01: Analysis report	Satisfied B
K_PaR-K_REG-121	ASPICE WP 17-08: Interface requirements specification	Satisfied B
K_PaR-K_REG-123	ASPICE WP 17-12: System requirements specification	Satisfied B
K_PaR-K_REG-104	ISO 26262-3: 5.4.1 make available the requirements and environment dependencies	Satisfied B
K_PaR-K_REG-206	ISO 26262-3: WP 5.5.1 Item definition	Satisfied B

Prozessaktivität

Verknüpfungen

Verknüpfungsauswahl

Relate Item(s)

KoDeCs PaR Product Platform BMS"

Explorer | Preview

Show Relationship Diagram

BMS (Battery Management System)

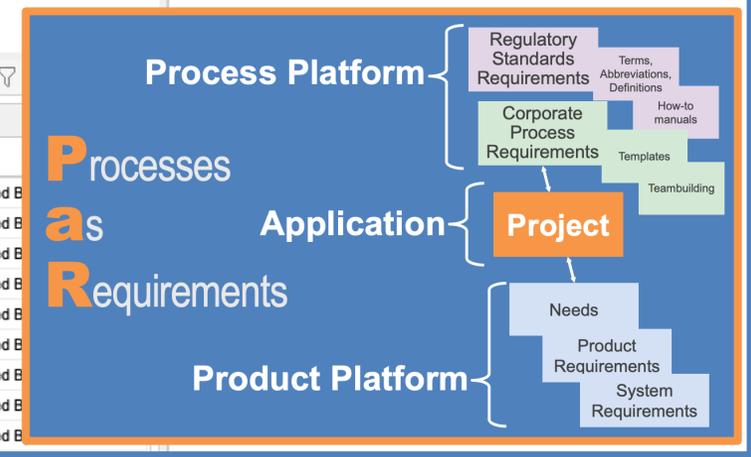
- Needs
- Product Requirements
 - Collection of product requirements for all BMS, clustered in features
 - AC charging
 - The battery shall be chargeable via AC up to x kW.
 - V1: The battery shall be chargeable via AC up to 11 kW.
 - V2: The battery shall be chargeable via AC up to 22 kW.
 - V3: The battery shall be chargeable via AC up to 16.5 kW.
 - V4: The battery shall be chargeable via AC up to 7.3 kW.
 - DC charging
 - Low voltage support
 - Thermal control
 - System Requirements
 - BMS Terms, Abbreviations, Definitions
 - AC = alternating current
 - CCS = Combined Charging System
 - DC = Direct Current
 - DC modified power
 - DC power
 - DC voltage
 - DC voltage range
 - DC voltage up to 11 kW
 - DC voltage up to 16.5 kW
 - DC voltage up to 22 kW
 - DC voltage up to 7.3 kW
 - kWh = kilowatt hour
 - OTA = Over the Air

Produkt-
plattform

Produkt-
varianten

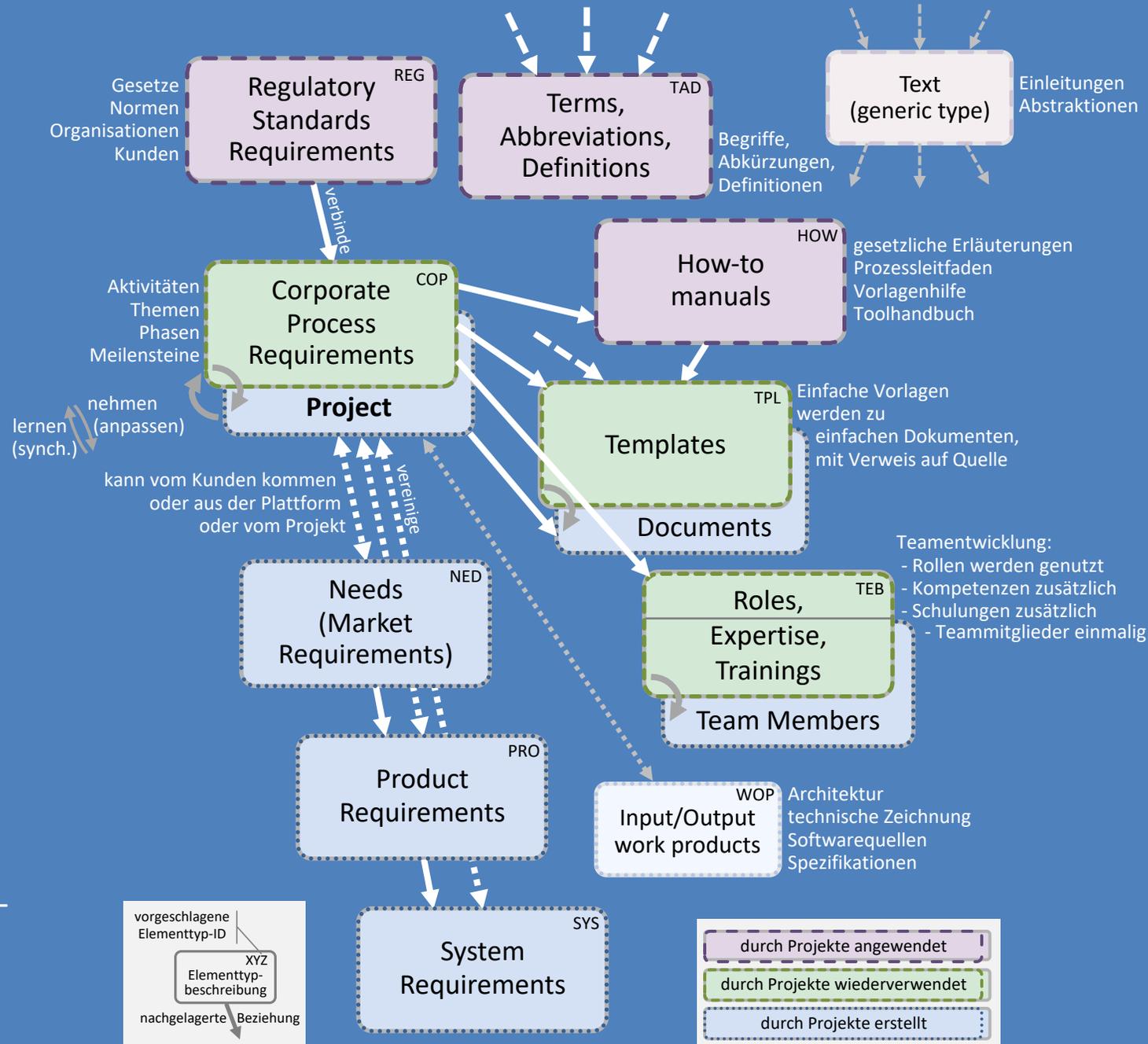
Produktbaum

15.Sep.2020
© Ralf Bürger
CC BY-SA 4.0



Nutzen

- ✓ Standards und Prozesse fokussieren sich auf Projekte und Lernkultur
- ✓ „was“ und „wie“ in den Tools der Teams zu vereinigen ist agil
- ✓ Teams wenden flexible Plattformtechniken schrittweise auf Prozesse an
- ✓ es ist ein holistischer systematischer und leicht anpassbarer Ansatz
- ✓ es entsteht echte Transparenz der tatsächlichen Prozess- und Produktreife



15.Sep.2020
© Ralf Bürger
CC BY-SA 4.0

<https://ProcessesasRequirements.info>

Vielen Dank!



PaR Community Partner:

