

apply

reuse

create

PaR = Processes as Requirements

Bring processes to the teams - in an agile, scalable and systematic way

Systematic

Software-

Engineering



Ralf Bürger

Ralf Bürger has coded software in the **80's**, became a project manager and self-employed consultant in the **90's**, a specialist for software development methods in the **00's**, and a development process designer and coach in the **10's**.

In the **20's** now he focuses on designing agile development **Processes as Requirements**, also for platform-based product development.

Ralf lives in Germany, is married and when he is not working, he is usually riding his bicycles or driving his Tesla.

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PaR Community Partner:



What is it about?

- ✓ Standards and processes should be an **exoskeleton** that helps the teams to move safely and efficiently through the storms of the projects.
- ✓ Instead, often the processes grow excessively over time and rather become a heavy **backpack** that the projects have to carry in addition.
- ✓ When the project teams start considering processes being rather **extra effort** than **help**, then something is wrong.
- ✓ “**what**” a project should do is considered being requirements for long time now, e.g. as customer requirements specification or as system requirements.
- ✓ Standards and processes say “**how**” to do the “what” by proven best practices.
- ✓ So why not defining the “how” also as what it really is?
 - **Requirements** that tell the projects “how” the work shall be done.
 - Requirements that can be reused.
 - Requirements that may be united with the others in the RE tool.

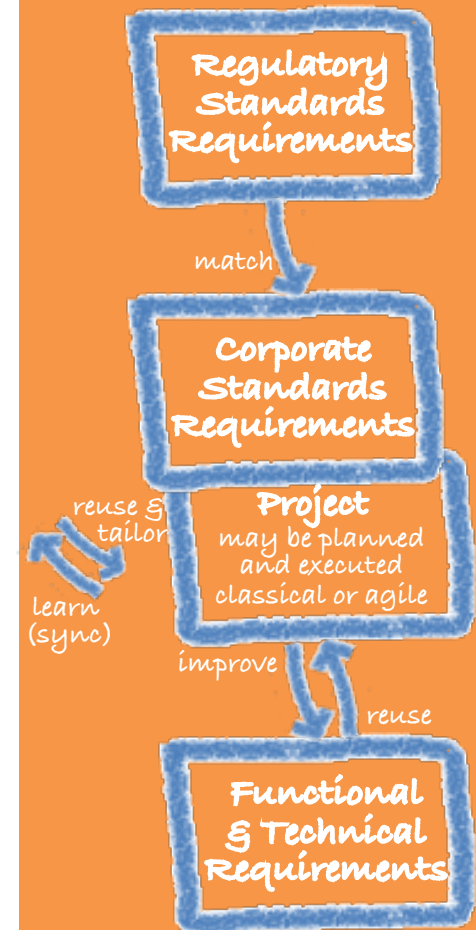


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design flexible corporate development processes to help all projects

PaR: reuse the processes as requirements sets in your RE tool

merge regulatory standards with corporate development processes

PaR: design also the standards as requirements, adding traceability

establish the corporate development processes and learn with the projects

PaR: unite process and product requirements, but improve both

continuously ensure standards and process compliance in the projects

PaR: use your RE tool features for bi-directional traceability

monitor actual project and product maturity

PaR: measure status of all requirements, documents and reviews



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PaRis (PaR information system) - Overview



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Action status overview

Status in Project

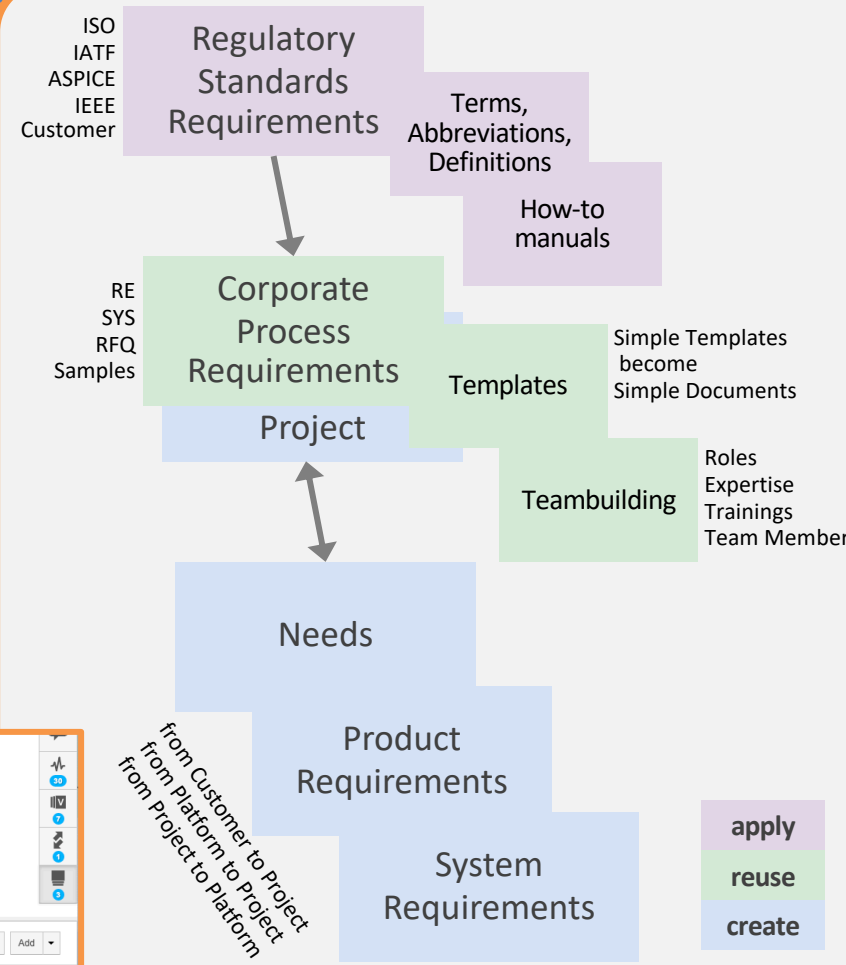
Legend: to be determined, open, ongoing, completed, done, not applicable

Missing estimations

| ID | Name | Status in Pro |
|---------------|---|---------------|
| BMSP-K_COP-45 | RFQ: Categorize Project | to be determ |
| BMSP-K_COP-53 | RFQ: Nominate owners for the fea... | to be determ |
| 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... | open |
| 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 |

Unused roles (team members missing?)

| ID | Name | Description |
|--------------|------|-------------|
| BMSP-K_TEB-6 | | |
| BMSP-K_TEB-6 | | |



Break Sync Sync All

Sync Status

ireme... (Current Item)

ireme... Out Of Sync

Synchronize changes to this item

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

PROJECT ID: K_PaR_K_COP-21

GLOBAL ID: GID-56139

NAME: RFQ: Obtain the needs for the new product or product update

EXPLANATION: The needs describe what the product or product update or platform improvement will be good for.

DIRECTIONS: In case of working in a customer project establish a communication to the customer and to potential suppliers to discuss the needs. In case of working in a product family platform create the Jama items within a corresponding project component or set. In case of working in a platform create the Jama items within a corresponding product family platform component or set. Relate the needs collection to this activity in the project.

Document all meetings in meeting minutes and relate them to this activity in the project.

| ID | Name | Type | Required | Suspect |
|-----------------|--|------|--------------|---------|
| K_PaR_K_REG-105 | ASAPICE SYS 1.8P1: Obtain stakeholder requirements and reports | | Satisfied By | No |
| K_PaR_K_REG-111 | ASAPICE SYS 1.1: communication established | | Satisfied By | No |
| K_PaR_K_REG-40 | ASAPICE WP 13.04: communication record | | Satisfied By | No |
| K_PaR_K_REG-53 | ASAPICE WP 13.10: Review record | | Satisfied By | No |
| K_PaR_K_REG-119 | ASAPICE WP 17.03: Stakeholder requirements | | Satisfied By | No |

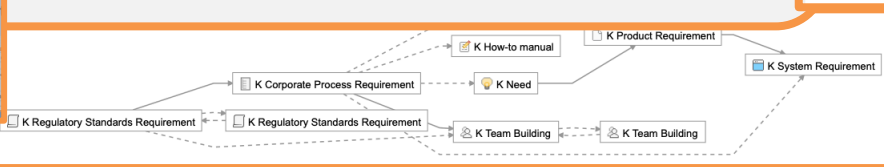
RFQ: Obtain the needs

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 |



Project > Change project

Explorer

Add

KoDeCs PaR 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 Leader

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)

1.4.2.1 Requirements Management (TPL)

project

process reuse

process variants

item selection

product requirements ("what") united with process requirements ("how")

process tree

Learn more

Dashboard: KoDeCs PaR Project "S..."

BMS-P-K_COP-54:RFQ: Der...

Add View Actions Export Edit

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

| 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-150 | ASPICE SYS.2: 2) system requirements updated | Satisfied B |
| K_PaR-K_REG-154 | ASPICE SYS.2: 3) system requirements reviewed | Satisfied B |
| K_PaR-K_REG-158 | 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 |

process activity

relations

relation selection

Relate Item(s)

KoDeCs PaR Product Platform BMS"

Explorer

Show Relationship Diagram Preview

BMS (Battery Management System)

Needs

Product Requirements

Collection of product requirements for all BMS, clustered in features

AC charging

The purpose of the feature "AC charging" is to enable charging th

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 disconnect current

Watt (W) = kilowatt (kW) * 1000 (Watt)

kWh = kilowatt hour

OTA = Over the Air

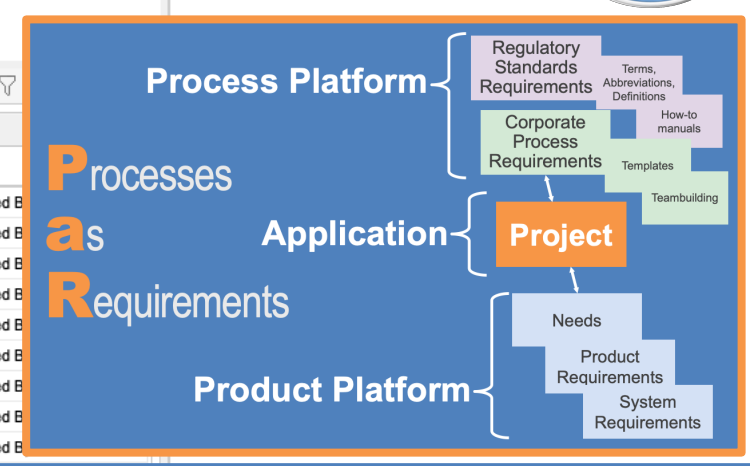
product platform

product variants

product tree

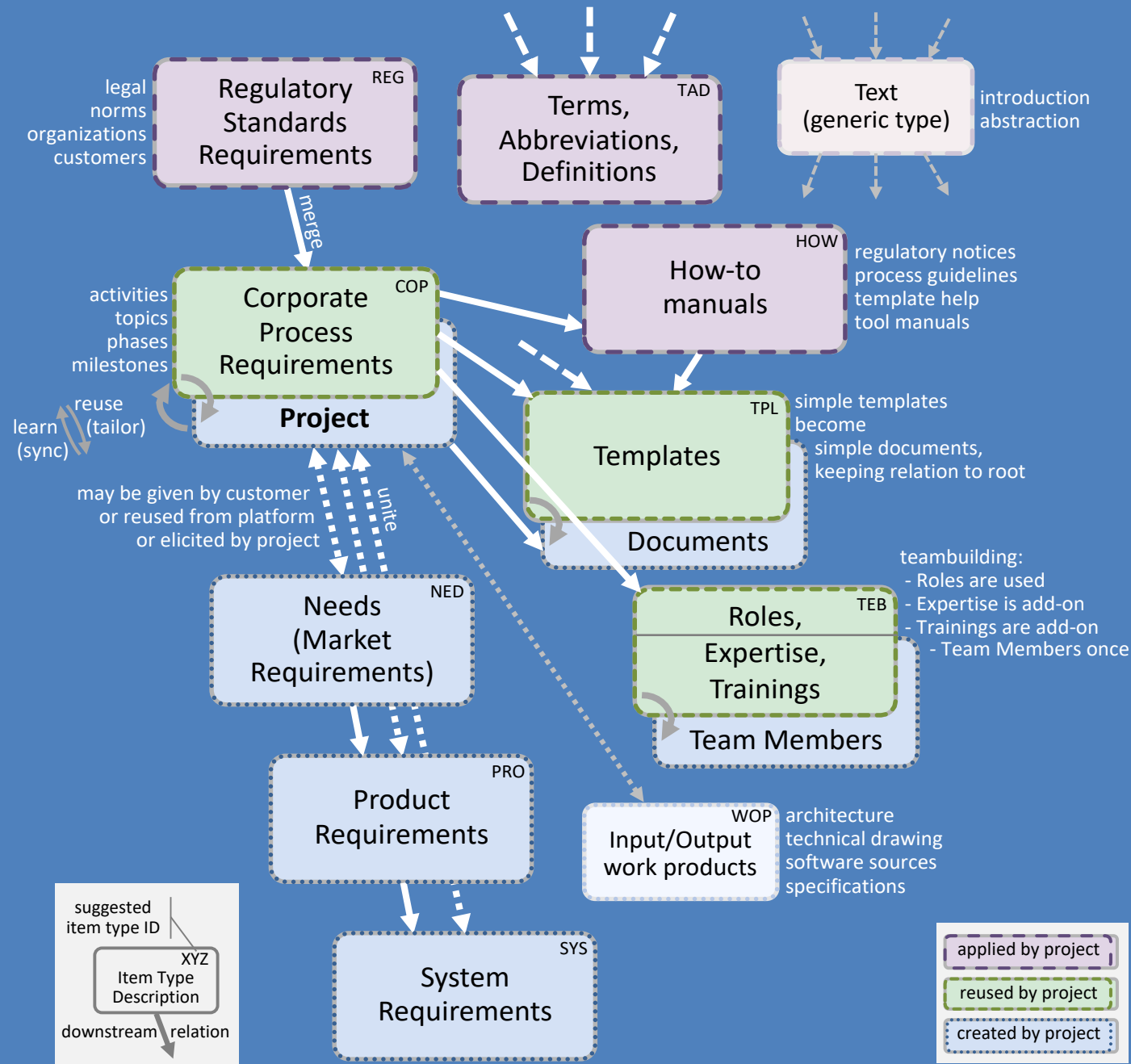
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SSE



benefits

- ✓ standards and processes are focusing on projects and learning culture
- ✓ uniting “what” and “how” in the teams’ tools is more agile
- ✓ step by step, teams apply flexible platform techniques also for processes
- ✓ it’s a systematic holistic approach that is easy to adopt and adapt
- ✓ it makes true transparency for actual process and product maturity



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Thanx!



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