

# Product Development Process Improving using Stages

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# About Me



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Process Manager



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## Work Experience

### Automotive Industry (2014 - Present)

Process,  
Method &  
Tools Focus  
Testing

- Test Methodologies & Quality Assurance
- Testing tool management
- Process Design, Training, Consulting
- Compliance (ISO 26262, ASPICE, ISO 21434, KGAs...)

Process  
Architect

- Stages Administration
- Process Landscape

PEP-  
Manager

- Process Management & Optimization
- Cross Collaboration
- Compliance (IATF16949, VDA-RGA)
- Project Management

### Medical Technology (2011-2014)

Quality  
Assurance

- Test Design, Planning, Execution and Monitoring
- Automatic Testing
- Defect & Change Management
- Compliance (ISO 13485, DICOM Standard)

## About FORVIA Hella Electronics

### > Company portfolio

#### Lighting



##### Product groups:

- Headlamps
- Rear combination lamps
- Interior lighting
- Car body lighting

#### Electronics



##### Product groups:

- Sensors and actuators
- Automated driving
  - 77 GHz Radar Sensors
- Smart Car Access
- Lighting and body electronics
  - LED Electronic Control Units
- Energy management
  - Battery Management Systems

#### Lifecycle Solutions



##### Product groups:

- Independent aftermarket
- Workshop solutions
- Special Original Equipment

# Summary

- 01** Global Automotive Industry Challenges and Goals
- 02** PEP Improvement Steps
- 03** PEP Improvement Techniques
- 04** Piloting Achievement



**01**

**Global Automotive Industry Challenges and Goals**

## **01 Global Automotive Industry Challenges and Goals**

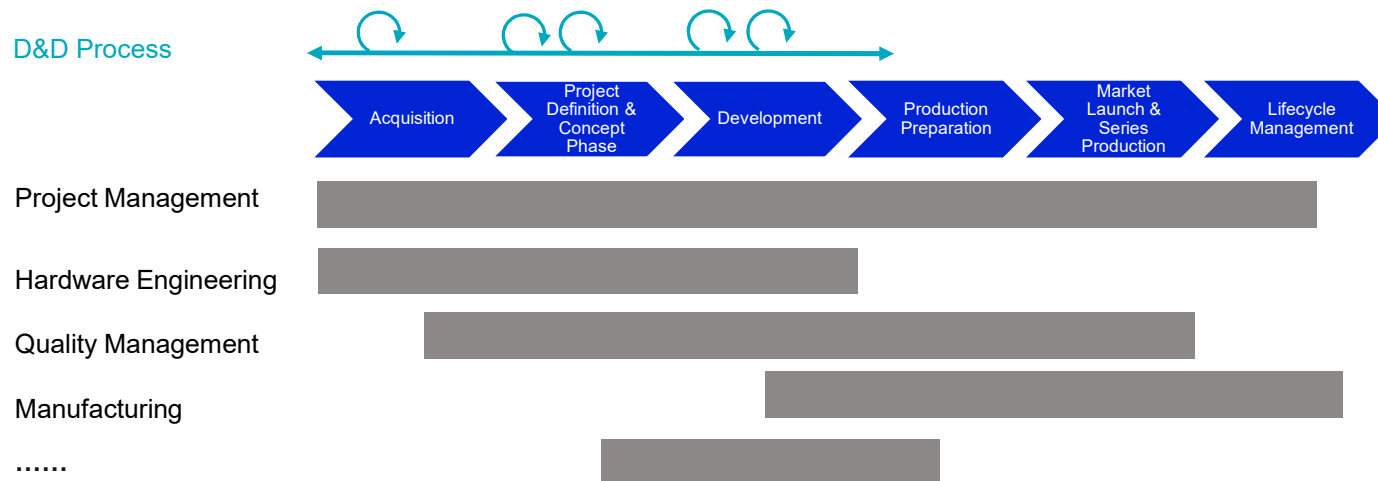
The Chinese automotive manufacturing industry is rising globally, demanding the entire sector to be faster, more efficient, and more cost-effective.

How should we effectively adapt to the highly dynamic and challenging environment?

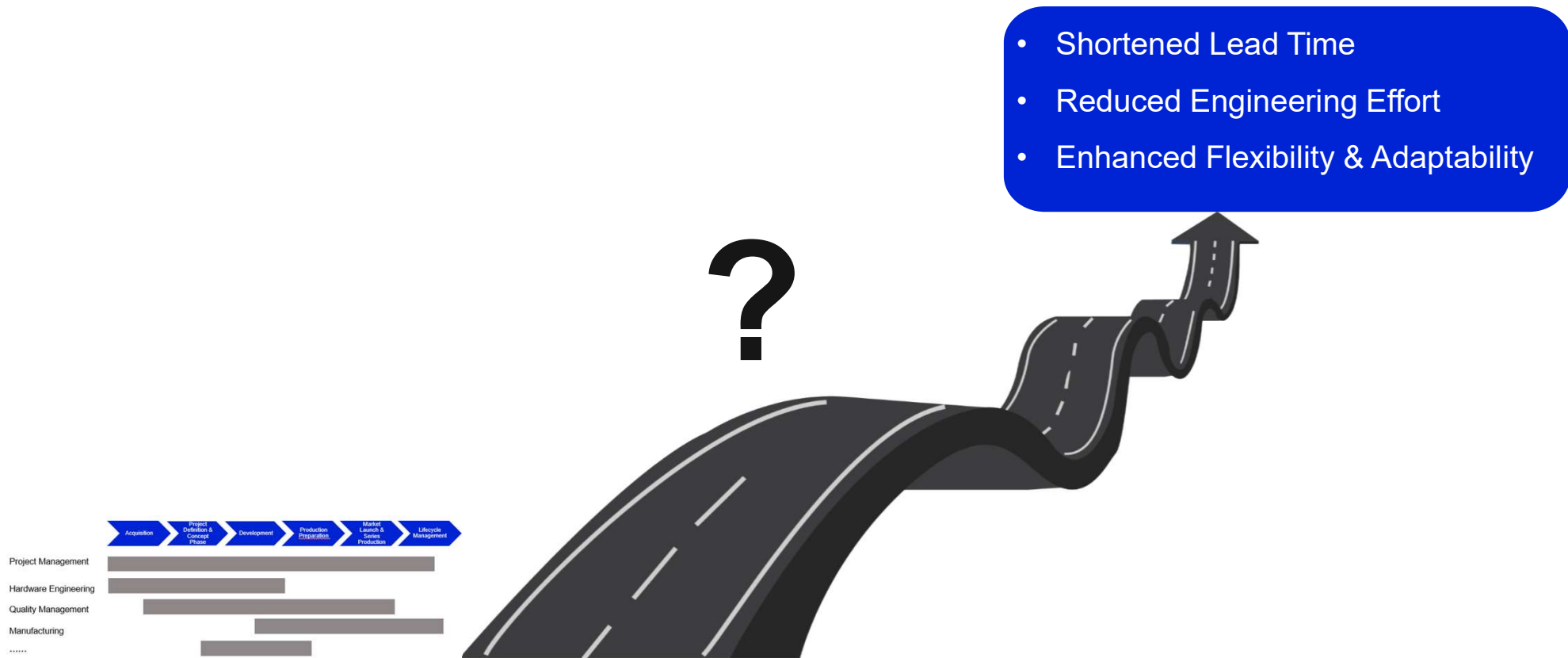
# 01 Global Automotive Industry Challenges and Goals

## › PEP (Product Development Process) Framework

- Covers all stages of product development
- 20 years, currently used in 350 projects, ~250 activities, ~550 work products, ~130 roles, ~900 guidance elements
- Reference subprocesses within and outside of Stages



# 01 Global Automotive Industry Challenges and Goals





The background features a large, abstract grey shape on the left side, resembling a stylized letter 'E' or a series of nested curves. To the right of this shape, the number '02' is displayed in a large, bold, orange font.

# 02

**PEP Improvement Steps**

## 02 PEP Improvement Steps

Four Improvement Steps to optimize our Process Framework.

### 01 Conduct User Interviews

› Direct User feedbacks are conducted via interviews

### 02 Identify Key Improvement Areas

### 03 Assess Effort, Impact and ROI, Prioritize

### 04 Implementation Techniques

We don't work that way.

Process landscape is too complex!

It's too late to execute task X in Phase Y.

Forget about the process.

We only have 24 hours for acquisition!

It's difficult to find anything.

Template XY is too long.

## 02 PEP Improvement Steps

Four Improvement Steps to optimize our Process Framework.

### 01 Conduct User Interviews

### 02 Identify Key Improvement Areas

### 03 Assess Effort, Impact and ROI, Prioritize

### 04 Implementation Techniques

#### > Process Content

- Gate, Phase, Milestones; Process and activities; Template

#### > Process Architecture

- Redundant information

#### > Useability

- Clicks, Navigation, Report

## 02 PEP Improvement Steps

Four Improvement Steps to optimize our Process Framework.

- |   |   |
|---|---|
| <b>01</b> Conduct User Interviews                   | <ul style="list-style-type: none"><li>› Process Change Proposer</li></ul>   |
| <b>02</b> Identify Key Improvement Areas            | <ul style="list-style-type: none"><li>› Process Change Effort<ul style="list-style-type: none"><li>• Implementation Resource and Effort</li><li>• Training and Update Effort</li></ul></li></ul>      |
| <b>03</b> Assess Effort, Impact and ROI, Prioritize | <ul style="list-style-type: none"><li>› Process Change Benefit</li></ul>  |
| <b>04</b> Implementation Techniques                 | <ul style="list-style-type: none"><li>› Process Change Impact<ul style="list-style-type: none"><li>• Implementation Cycle</li><li>• Process Interface</li><li>• Number of project</li></ul></li></ul> |

## 02 PEP Improvement Steps

Four Improvement Steps to optimize our Process Framework.

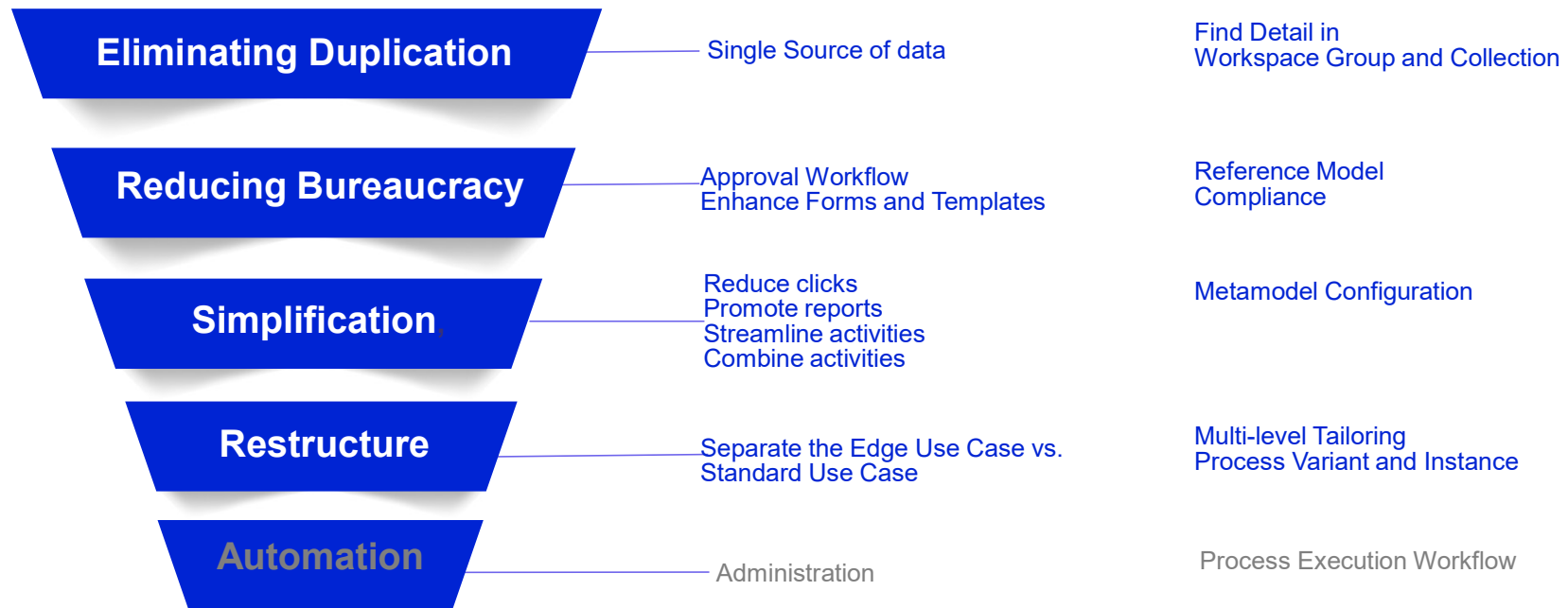
- 01** Conduct User Interviews > See Chapter 03 PEP Improvement Techniques
- 02** Identify Key Improvement Areas
- 03** Assess Effort, Impact and ROI, Prioritize
- 04** Implementation Techniques

The background features a series of overlapping, rounded rectangular shapes in various shades of grey and teal. These shapes are arranged in a way that creates a sense of depth and movement, with some shapes appearing to be in front of others. The overall color palette is muted and professional.

# 03

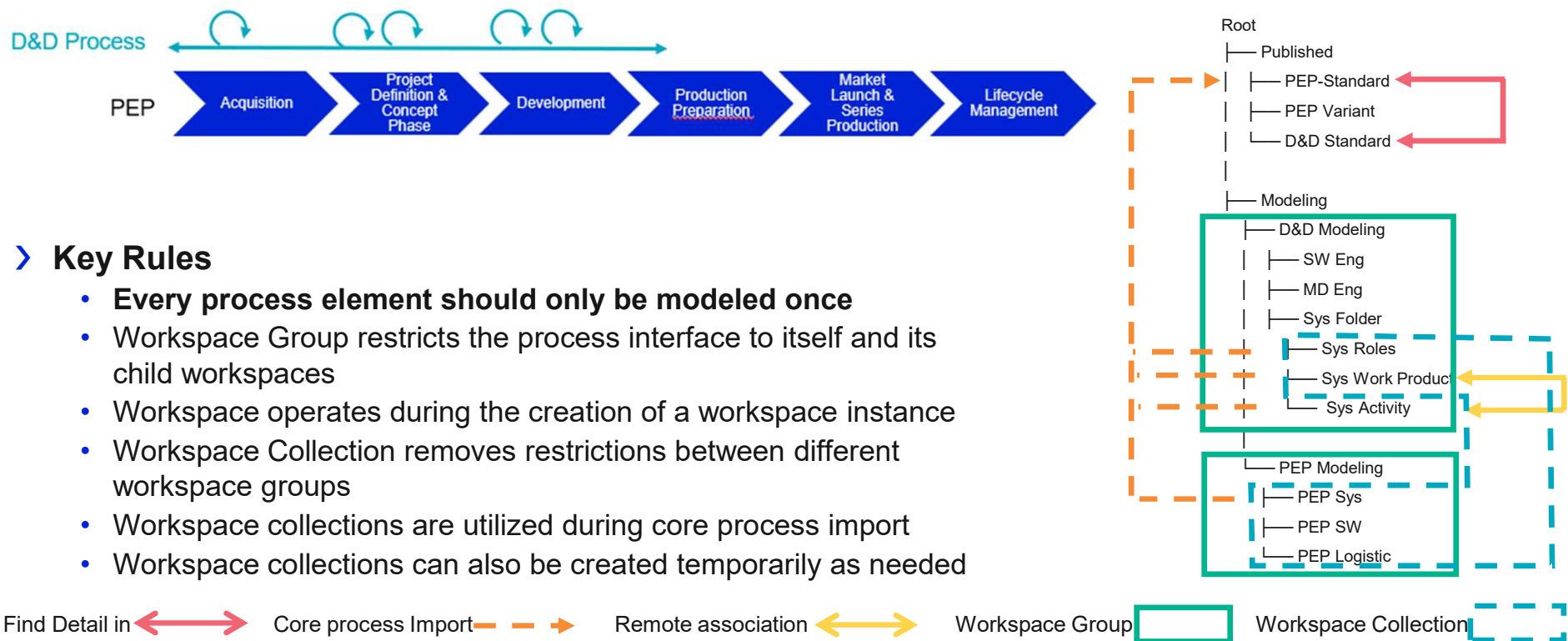
**PEP Improvement techniques**

## 03 PEP Improvement techniques



## 03 PEP Improvement techniques

### Eliminating Duplication



#### Key Rules

- Every process element should only be modeled once
- Workspace Group restricts the process interface to itself and its child workspaces
- Workspace operates during the creation of a workspace instance
- Workspace Collection removes restrictions between different workspace groups
- Workspace collections are utilized during core process import
- Workspace collections can also be created temporarily as needed



## 03 PEP Improvement techniques

### Reducing Bureaucracy

#### › Questioning Bureaucracy

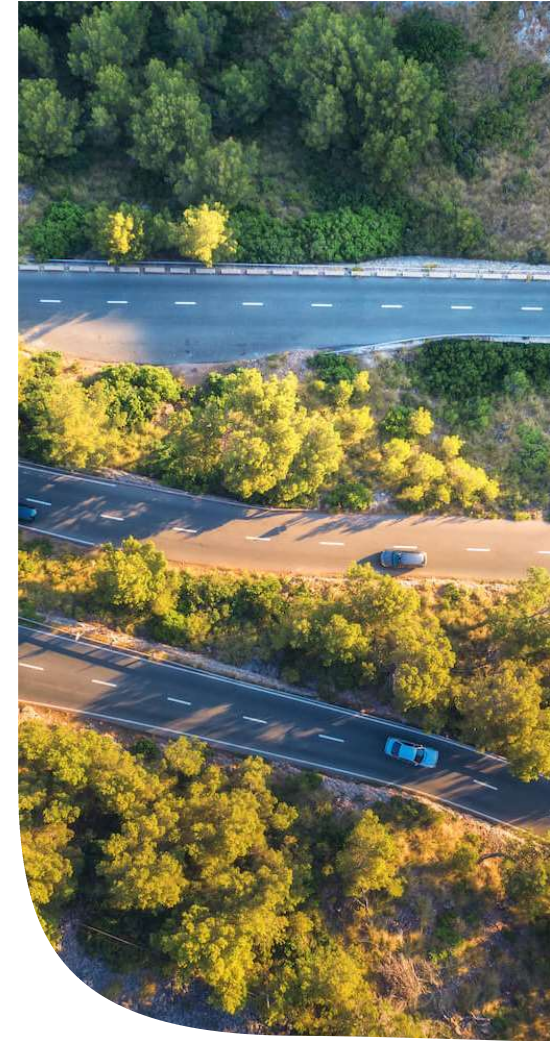
- How many approvals do we have in place? Why? Can we reduce the number of approvals required?

Classify and simplify the decision board for release and approval

- Do we generate unnecessary paperwork?

Reduce the review checklists and eliminate overlapping questions among domains.

Place customer needs and the product at the center, instead of departmental specific checks.

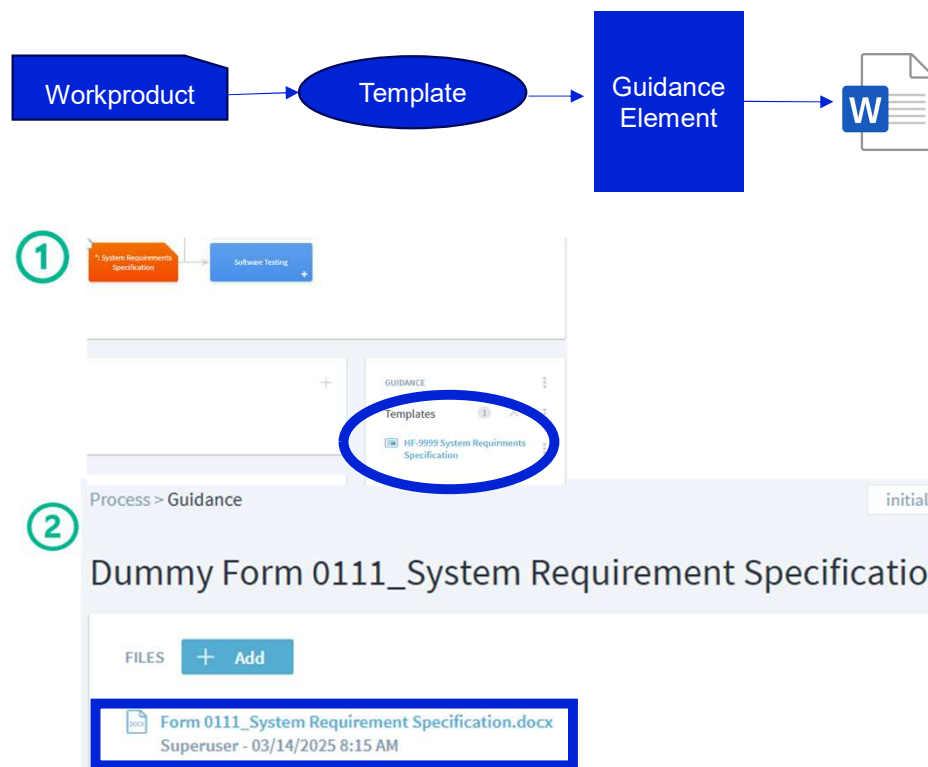


## 03 PEP Improvement techniques

### Simplification

#### > Reduce the clicks to the Target Element

- External Documents, such as word templates, are attached as guidance Elements. **Two clicks** are needed to navigate from work product to template.



## Slide 18

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**ZZ0**

New screenshot. Video?

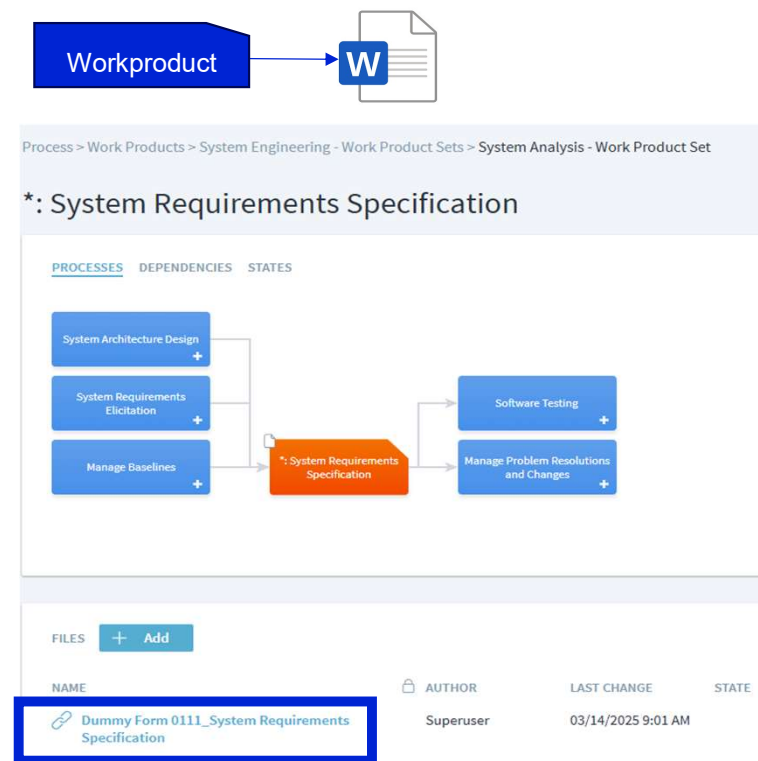
ZHU Zheng (HELLA), 2025-03-17T13:09:26.746

## 03 PEP Improvement techniques

### Simplification

#### > Reduce the clicks to the Target Element

- By leveraging the file attribute in an unconventional way, we eliminate one click, enabling direct access to the document.



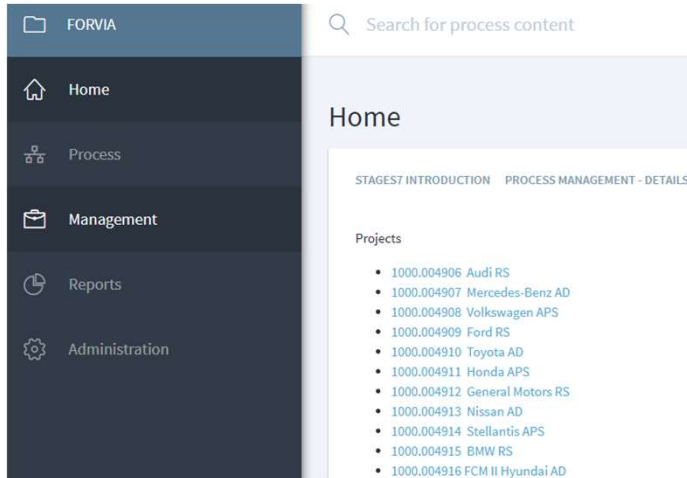
## 03 PEP Improvement techniques

### Simplification

#### › Highlighting Frequently Accessed Content on the Landing Page

- Example1: Dummy list of Project

Example 2:



TION PROCESS MANAGEMENT - DETAILS PEP-GE PROCESS REPORT STAGES6 > STAGES7 TRANSITION PROCESS ARCI

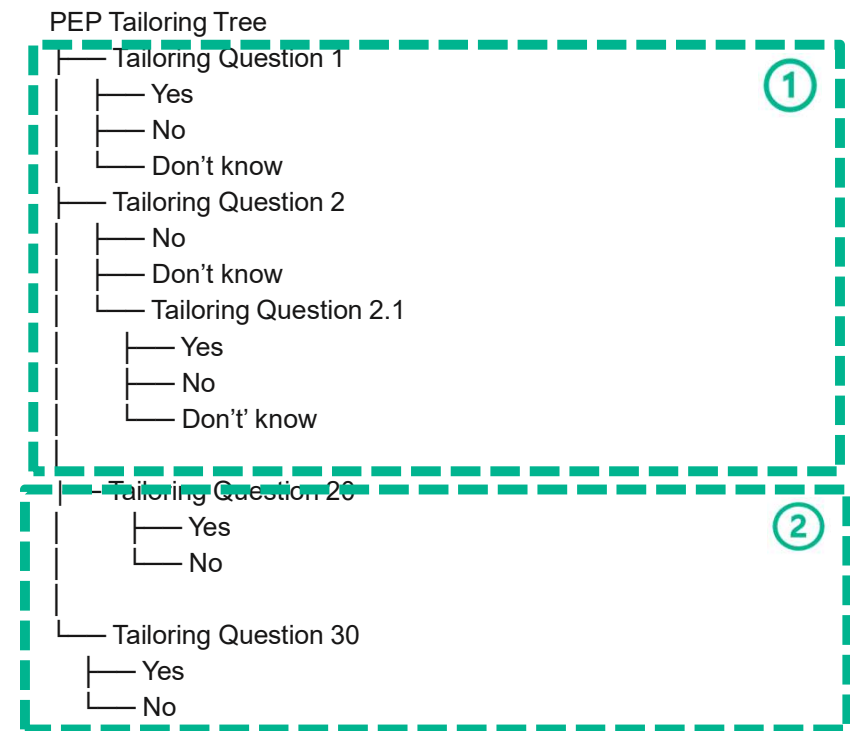
Process	Report Content	Download
PEP R6.0	Role Name  Function Role Description	<a href="#">PEP R6.0_Role Function Description.xlsx</a>
PEP R6.0	Activity Guidane	<a href="#">PEP R6.0_Ativity2Guidance.xlsx</a>
PEP R7.0	Role Name  Function Role Description	<a href="#">PEP R7.0_Role Function Description.xlsx</a>
PEP R7.0	Activity Guidane	<a href="#">PEP R7.0_Ativity2Guidance.xlsx</a>
PEP R7.0	Activity Role Workproduct	<a href="#">PEP R7.0_Activity Role Workproduct</a>

## 03 PEP Improvement techniques

### Restructure

#### › Each project has tailoring needs

- Analyze Tailoring statistics in project storage
- Creating Tailoring Questionnaires for common use cases
- Too many instance creations burden the server and require additional administrative effort
- Ready-to-use (out-of-the-box) processes are required



## 03 PEP Improvement techniques

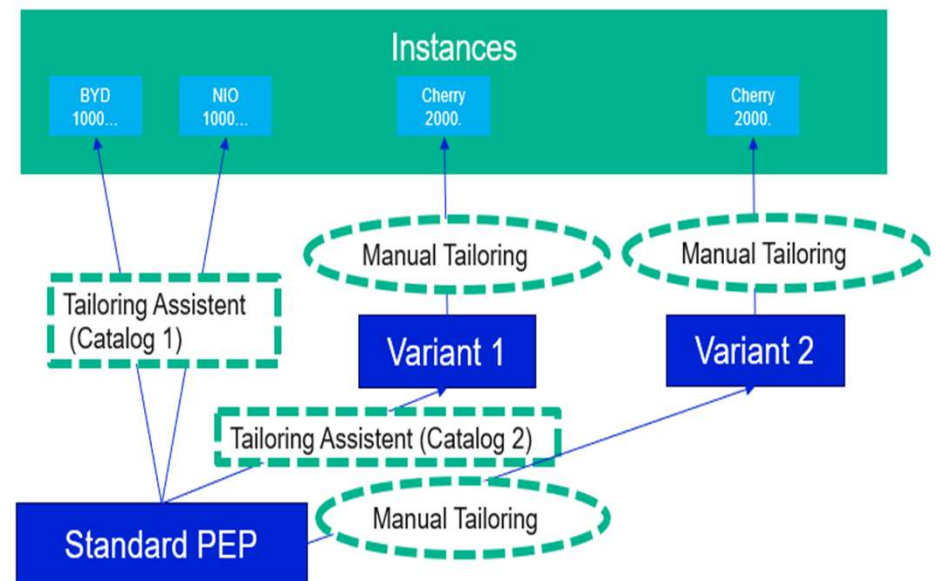
### Restructure

#### > Distinguish typical scenarios from exceptional ones

- A large number of projects share the same tailoring points, creating variants
- Creating variants involves multiple dimensions, as different use cases need different approaches

#### > Two Level Tailoring Catalog

- One for end user
- The other for Variant owner



The background features a series of overlapping, rounded rectangular shapes in various shades of grey and white, creating a layered, architectural effect. The shapes are positioned on the left and center of the frame, with the text elements placed on the right.

**04**

**Piloting Achievement**



## 04 Piloting Achievement

### ➤ Reduced Effort in Piloting Projects

Project #	Activities Removed Through Tailoring	Cost savings through tailoring [h]
1	145	183,74
2	75	158,28
3	92	227,43
4	50	106,98
5	21	38,02
6	38	54,05
7	70	135,85
8	166	1.390,15
9	50	106,98

It's nice. Can we also apply this to other projects now?

Tailoring in Stages saves us a lot of discussion about what and how to tailor,

Massive step ahead compared to the previous template.

Greater adaptability to changing needs and conditions

**FORVIA**

