



The new process improvement expert training module from iNTACS - Paper at EuroSPI

Presenter: Thomas Wegner

Paper:

An Interpretation of the PIM.3 Process Improvement Process – Results of the iNTACS
Process Expert Training Developer Group for PIM.3

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Abstract

In November 2021, the iNTACS (“International Assessor Certification Scheme e.V.”) established the strategy of a certified process expert training. Sub-groups to develop a training to create a practical understanding of different processes have been set up, and this paper reflects the results from the sub-working group developing an understanding for PIM.3 and PA3.1 and PA3.2. So far, generations of assessors had rated processes from the VDA scope but very few assessed PIM.3 Process Improvement Process. This makes the results of the working group a kind of first published state of the art understanding of PIM.3 and how process improvement works in automotive industry.

Keywords: PIM.3, Process Improvement Process, ASPICE 3.1

Source for all slides PIM3 intacs training material

Introduction

The process “Process Improvement” (PIM.3) is part of the assessment model but is still not in the scope of the processes selected by the automotive manufacturers for assessing the suppliers.

The VDA scope, the Fiat Chrysler scope, in fact all scope selections did not select PIM.3 but rather focused on special topics.

On the other hand, it is known that many improvement projects fail.

→ Therefore, it is an interesting question why this process has not been selected so far.

In November 2021, the iNTACS (“International Assessor Certification Scheme e.V.”) established the strategy of a certified process expert training (scheme presentation will be a Keynote by B. Sechser).

Process expert training can be attended by non-assessors and is a pre-training before attending a provisional assessor course.

The idea is to teach the practical understanding of processes and how to implement improvement programs in organisations. This new approach then suddenly highlighted the importance of PIM.3.

Introduction: Process Improvement PIM.3

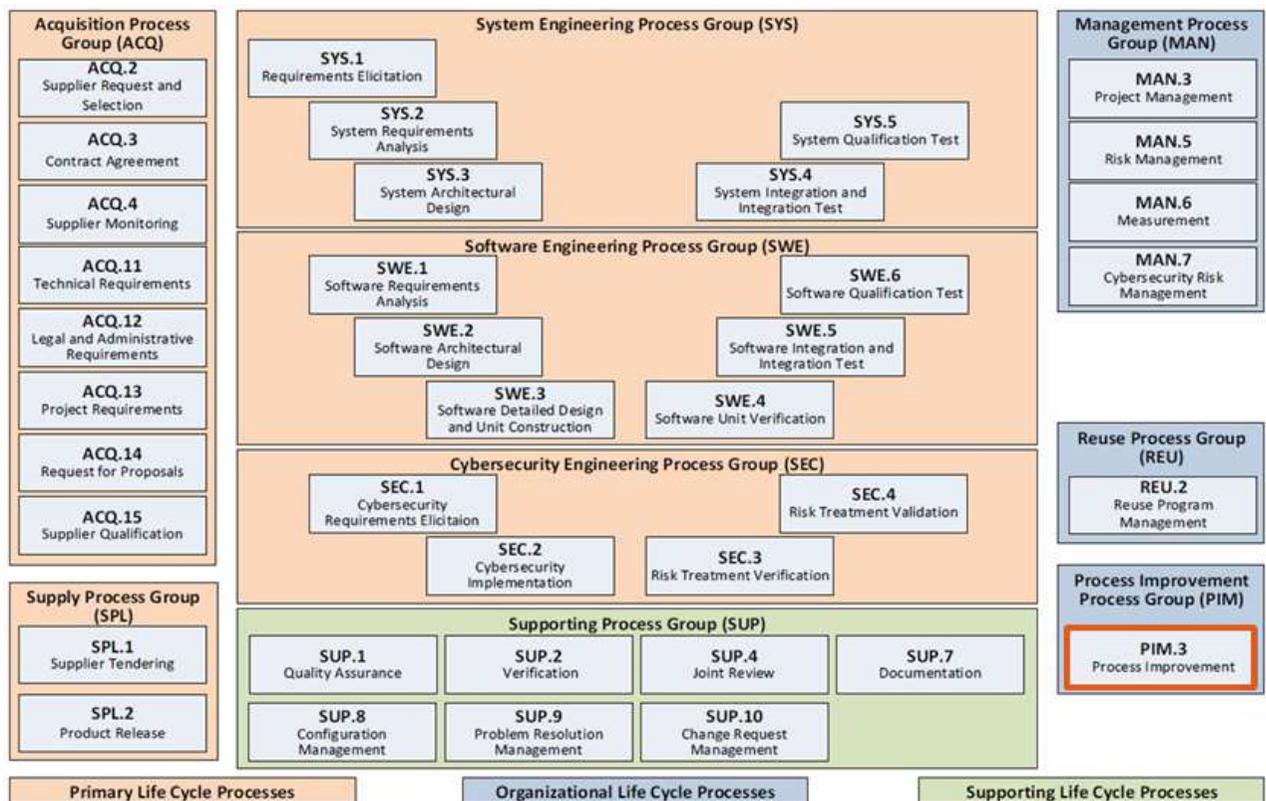


Figure 1: PIM.3 Process – Part of ASPICE 3.1 and Security Extension



This new approach then suddenly highlighted the importance of PIM.3.

Introduction

Very few assessors so far assessed PIM.3 up to the capability level 3 and the process expert team developing the content for PIM.3 decided a step-wise approach to elaborate this required knowledge and understanding. The development was done in the following steps (next slide)

Introduction

1. Research and comparison of case studies where process improvement has been successfully implemented. Most examples were contributed by medium and large sized automotive suppliers.
2. Analysis of existing process improvement models which elaborated the success criteria for process improvement.
 - a. The SPI Manifesto ([SPI Manifesto \(eurospi.net\)](https://www.eurospi.net))
 - b. The ISO/IEC TR 33014 guide for process improvement
3. Joined understanding of PIM.3 base practices.
4. Joined understanding of level 2 (GPs for PA2.1 Performance Management, PA 2.2 Work Product Management) for PIM.3 effective improvement project implementation.
5. Joined understanding of level 3 (GPs for PA3.1 Process Definition, PA 3.2 Process Deployment) for PIM.3 standard process for running an organization wide improvement program

Introduction

Once the joined understanding had been established, the process expert team aggregated the guidance and training material and performed a joined review. This means that the understanding of PIM.3 elaborated in this working group will be used as a reference material and correct understanding of PIM.3. This paper will give a first insight into this PIM.3 understanding.

Understanding Process Improvement by Use Cases

In the working group, leading large and mid-sized automotive suppliers shared their success stories about how PIM.3 worked in practice.

Concepts, which all partners agreed to represent a success principle, have been documented as a case study.



This work resulted in 6 typical success concepts and case studies. This case study pool will grow over time and lead to an updated training material for iNTACS.

Understanding Process Improvement by Use Cases

The six shared case studies focused on different aspects:

1. Building high mature platforms and rolling out high mature variants in customer projects. E.g., aggregating components from capability level 3 platforms into capability level 3 application projects for customers *
2. Establishing cross-vision process teams which elaborate joined processes and solutions for the entire organization. **
3. Defining organization wide processes as process releases (like a service project) and establishing tailoring guidelines that make them applicable in different domains in the organization. **
4. What to do and what not to do to create and support process improvement teams.
5. Using data driven and gamification-based approaches to increase the employee motivation to really live the improved process. **
6. Starting the improvement with a lead project and elaborating best practices for a domain and based on the best practices and lessons learned standardize the processes for a cluster of projects in a domain (bottom up). **

* Presented in this session

** More see paper / all see training material

Example 1:

For the case 1 above a paper has been published in EuroSPI 2020 and in the EuroSPI WILEY Special Issue in 2021. The concept described in the papers is outlined in the below figure 2.

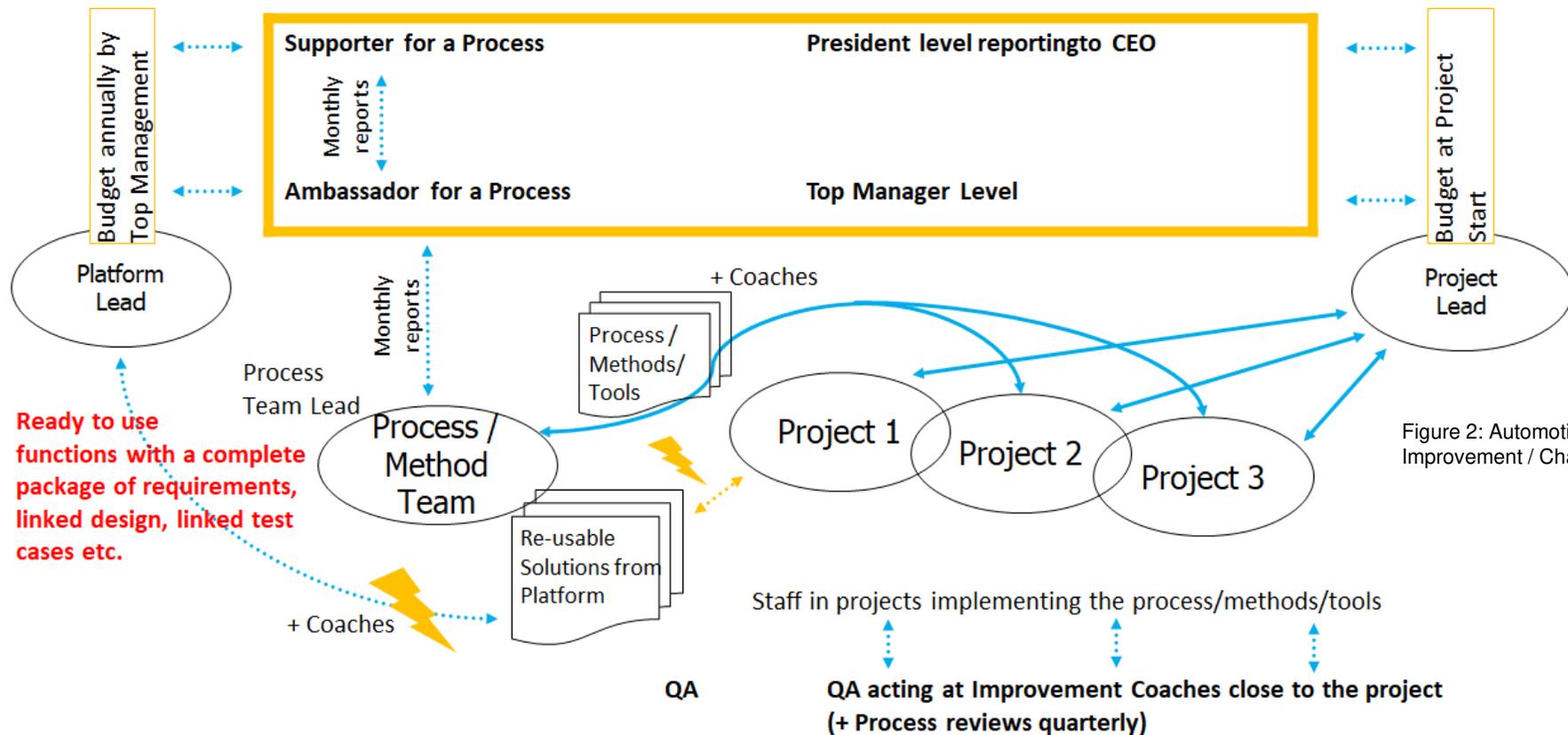


Figure 2: Automotive Specific Improvement / Change Strategy Model

Understanding Base Practices for Process Improvement

Example PIM.3 BP.3

The material shared in the case studies, and the common understanding published in the SPI manifesto and the ISO/IEC TR 33014 guidance for process improvement have been used to explain the base practices.



Base Practice PIM.3.BP3:

- 1) **Establish process improvement goals.** Analysis of the current status of the existing process is performed, focusing on those processes from which improvement stimuli arise, resulting in improvement objectives for the processes being established. [OUTCOME 3]

NOTE 5: The current status of processes may be determined by process assessment.

- 2) **Related Outcomes:** 08-00 Plan [OUTCOME 2, 4, 7], 15-05 Evaluation report [OUTCOME 2, 3, 4, 5, 7], 15-13 Assessment/Audit report [OUTCOME 3, 5], 15-16 Improvement Opportunity [OUTCOME 2, 3, 4, 7]

Understanding Base Practices for Process Improvement

Example PIM.3 BP.3

Elaborated understanding of process improvement goals:

1. Process Related – Target capability based: Optimize processes until all BPs and GPs are covered and fulfil the company standards (process related).
2. Efficiency Related – Performance target based: Optimize processes until processes deliver quality and quantity in time and within planned effort.
3. Product Quality Related – coverage metrics based: Optimize processes until specific product quality targets are achieved.
4. Improvement goals combining process, efficiency, and product related targets.
5. Assessment Based – Process Findings Based: Regular new process releases implementing the improvements.
6. Game and Motivation Based – Benefits / Motivation Driven: Engineers winning prizes / benefits when implementing and adding improvements suggestions to the process (SPI gamification).
7. ...

Understanding Level 2 of PIM.3

The Generic Practices at Level 2 must be interpreted per process. This is also true for PIM.3 and since very few assessors had done assessments of PIM.3 so far, it was a challenge to share the experiences from improvement programs and agree the correct interpretation. This resulted in an elaborated understanding of all GP2.x.y generic practices and two example (one in this presentation) results from the working group are shown below.



Generic Practice PIM.3.GP2.1.2:

- 1) Plan the performance of the process to fulfill the identified objectives. [ACHIEVEMENT b]

Plan(s) for the performance of the process are developed.

The process performance cycle is defined.

Key milestones for the performance of the process are established.

Estimates for process performance attributes are determined and maintained.

Process activities and tasks are defined.

Schedule is defined and aligned with the approach to performing the process.

Process work product reviews are planned.

Understanding Level 2 of PIM.3

Example GP2.1.2

Elaborated understanding of process improvement planning of performance:

1. Roadmap for process improvement, including milestones, and releases of processes
2. Plan pilot projects to extract best practices and roll out best practices as a standard
3. Plan gamification strategies / incentive schema to motivate process engineers and quality to support the implementation of new processes
4. Plan the effort of e.g., improvement managers, process teams, process experts, process architects, and the additional effort of engineers to implement the improvement.
5. Set up and plan the effort and goals of cross-division best practice sharing process teams.
6. Plan the effort to establish a process asset library, an environment in which the projects can access, use and share the process assets.
7. Plan improvements to meet the target milestones agreed with top management.
8. Outline how the plan for improvement addresses the targets set out in GP 2.1.1.

Note: Planning is aligned with prioritized process change in BP4-BP5.

Understanding Level 3 of PIM.3

The Generic Practices at Level 3 must also be interpreted per process. This is also true for level 3 of PIM.3 and since very few assessors had done assessments of PIM.3 so far, it was a challenge to share the experiences from improvement programs and agree the correct interpretation.

This resulted in an elaborated understanding of all GP3.x.y generic practices and an example result from the working group is shown below.



Generic Practice PIM.3.GP3.1.1:

- 1) **Define and Maintain the Standard Process That will Support The Deployment of the Defined Process [ACHIEVEMENT a]**

A standard process is developed and maintained that includes the fundamental process elements.

The standard process identifies the deployment needs and deployment context.

Guidance and/or procedures are provided to support implementation of the process as needed.

Appropriate tailoring guideline(s) are available as needed.

Understanding Level 2 of PIM.3

Example GP3.1.1

Elaborated understanding of process improvement planning of performance:

See paper version 😊

Forecast

Workshop Program 2.9.2022

| Workshop - Good Process Improvement Practices (all Branches) | |
|--|--|
| 08.00 - 09.00 | Registration |
| 09.00 - 10.00 | <p>Two case studies on implementing best practices for Software Process Improvement Bartosz Walter, Poznan University of Technology, Poland, Branko Marovic, University of Belgrade, Belgrade, Serbia, Ivan Garnizov, Friedrich-Alexander-University, Erlangen, Germany, Marcin Wolski, Poznan University of Technology, Poland, Andrijana Todosijevic, AMRES, Belgrade, Serbia</p> <p>Challenges with Multi-PAM SPICE Assessments Rainer Dreves, SPICE Consulting, Germany, Ralf Mayer, BOSCH Engineering GmbH, Germany, Bernhard Sechser, Process Fellows GmbH, Germany</p> |
| 10.00 - 11.00 | <p>An Interpretation of the PIM.3 Process Improvement Process – Results of the iNTACS Process Expert Training Developer Group for PIM.3 Richard Messnarz, ISCN GesmbH, Austria, Vesna Djordjevic, Victor Gremen, Robert BOSCH GmbH, Germany, Winifred Menezes, Kuglermaag, Germany, Ahmed Alborae, VALEO, Egypt, Rainer Dreves, SPICE Consulting, Germany, So Norimatsu, JASPIC, Japan, Thomas Wegner, ZF Friedrichshafen AG, Germany, Bernhard Sechser, Process Fellows, Germany</p> <p>Corporate competencies – when individual competencies only do little difference Jorn Johansen, Morten Korsaa, Whitebox, Denmark</p> |
| 11.00 - 11.15 | Coffee Break |
| 11.15 - 12.00 | <p>Key Note 5: KTM Vehicle Security, KTM Motorsport AG Frank Zurheide, KTM AG</p> |
| 12.00 - 13.00 | Shorter Lunch Break |
| 13.00 - 13.45 | <p>Key Note 6: Large Websites for Organizations have to become more interactive Professor H. Maurer, Ph.D., MAE, Graz University of Technology, Austria</p> |
| 13.45 - 14.30 | <p>Key Note 7: Cybersecurity Developments - iNTACS ASPICE for Cybersecurity, the CyberENG EU project and training, and the Cybersecurity Skills Sets in the Automotive Skills Alliance, Jakub Stolfa, Svatopluk Stolfa, VSB TUO, Czech Republic, Richard Messnarz, Damjan Ekert, ISCN, Austria</p> |
| 14.45 - 15.15 | Rory O Connor paper Award and Best paper Award together with the ASQ and Outlook to 2023 in Munich, Germany. |



DO YOU HAVE ANY QUESTIONS?

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