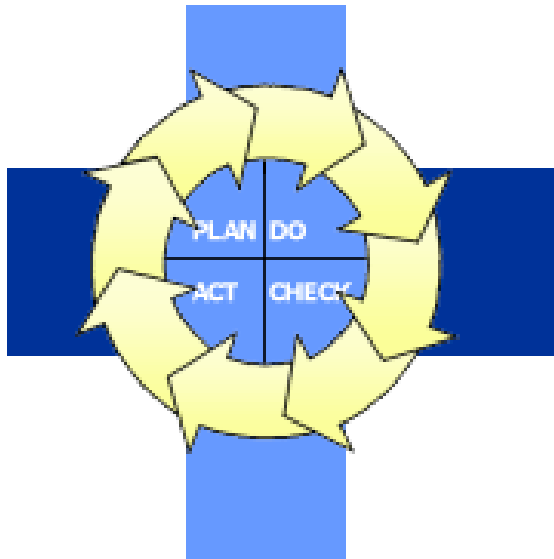




Software Process Training



Dr. Ernest Wallmüller
Wolfgang Höh

Qualität & Informatik
www.itq.ch



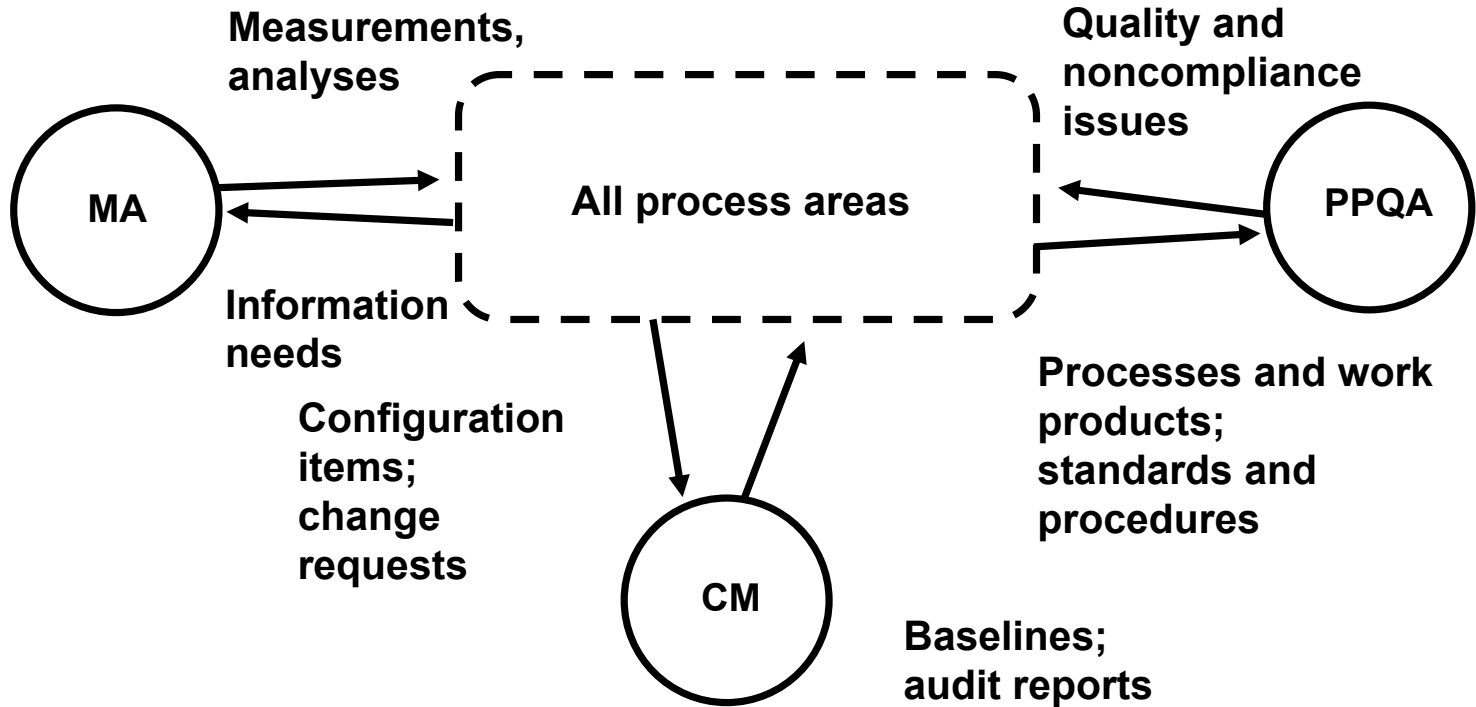
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Nonconformance?

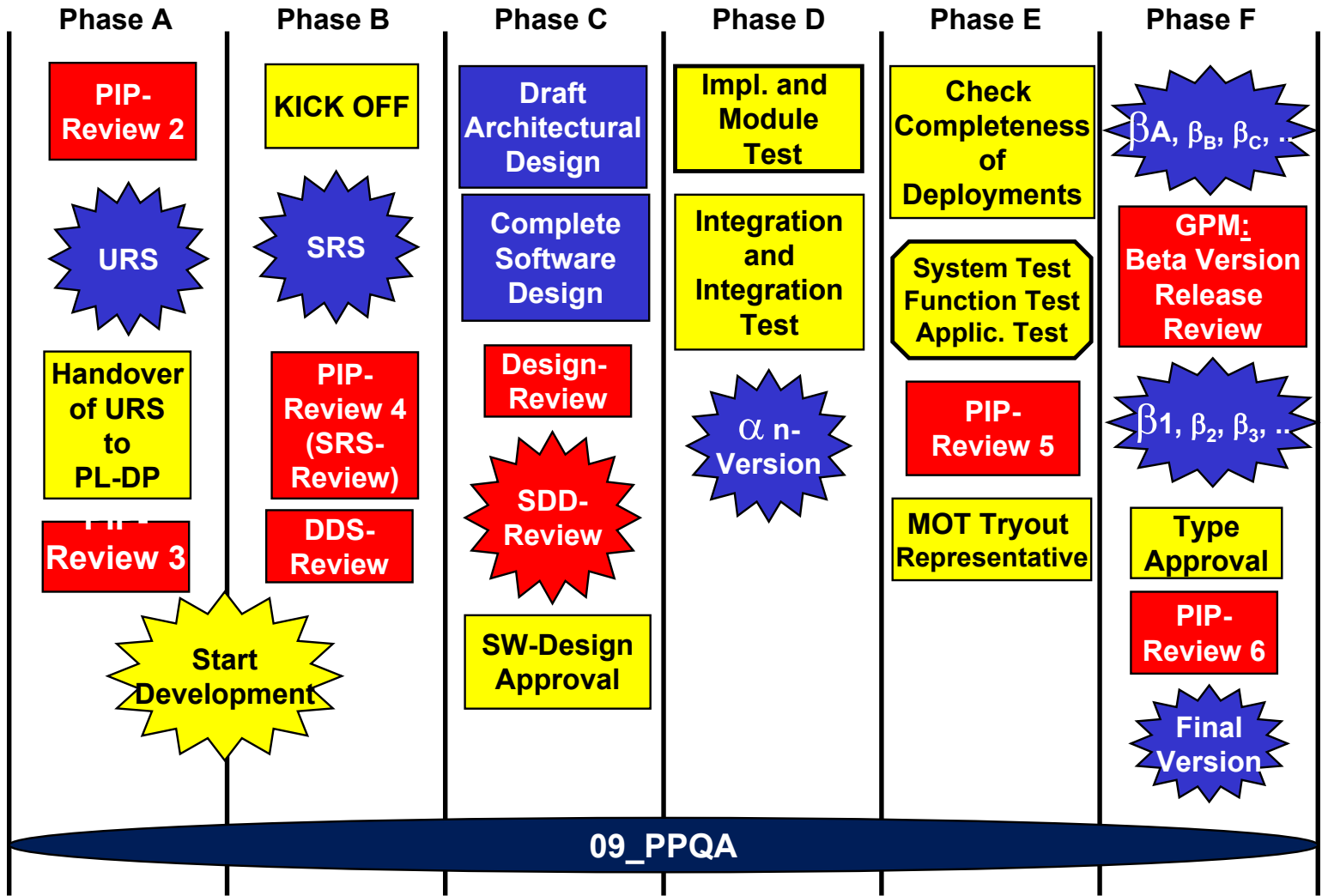
PPQA Process Context

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SW Development Overview: Rule 9 (PPQM)

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■ Policy

- According to the Quality-, Environmental- and Safety-Manual (chapter 5.3) the policy establishes the evaluation for:
- Performed processes (standard software development process and Qday process), work products and services against applicable process descriptions, standards and procedures
- Identifying, documenting, addressing and tracking of non-compliance issues
- Providing feedback to relevant stakeholder of the results of quality assurance activities

■ Scope

The defined content is valid for all departments within the SBU Instrumentation and Test Systems for establishing and maintaining CMMI relevant work products.

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■ Purpose

Providing staff and management with objective insight into processes and associated work products.

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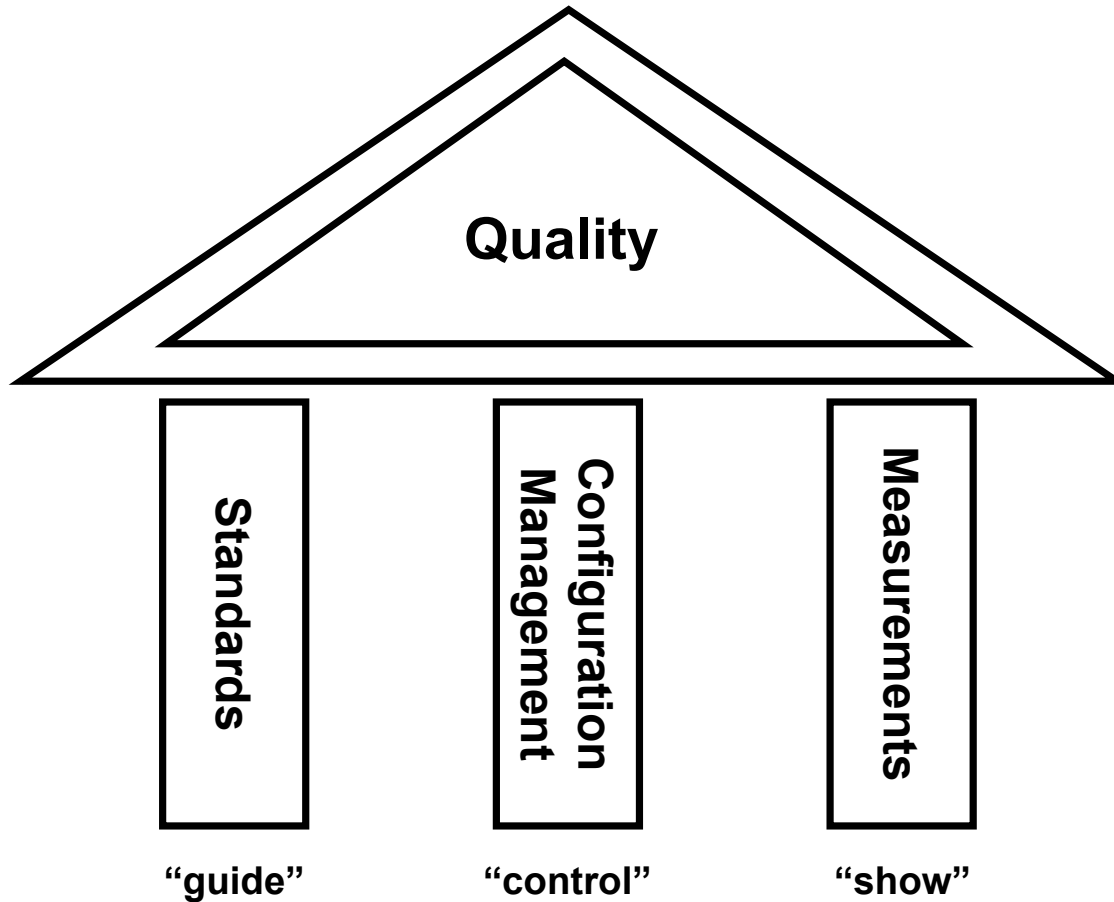
- **Method:** *Plenum*
- **Timing:** *10'*
- **Form:** *Brainstorming and discussion*
- **Documents:** *none*
- **Deliverable:** *Documentation on flipchart (Trainer)*

- **Questions:**

- I. What are your experiences with SQA?*
- II. What worked well in the past?*
- III. What did not work so well?*



- OPF
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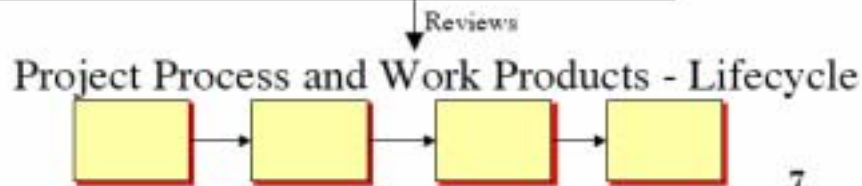
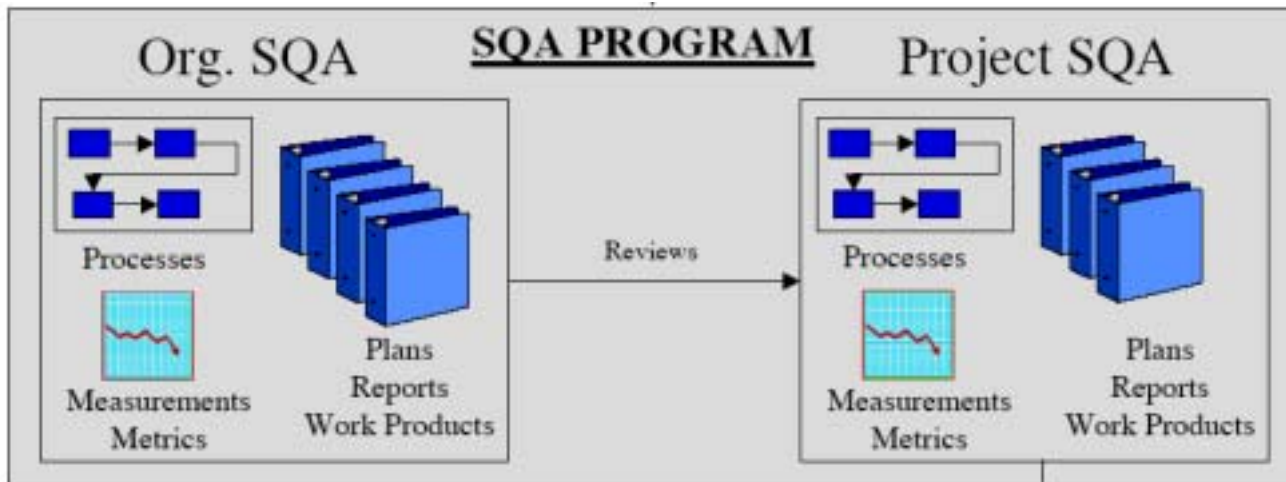
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Quality Is *Not* Free...

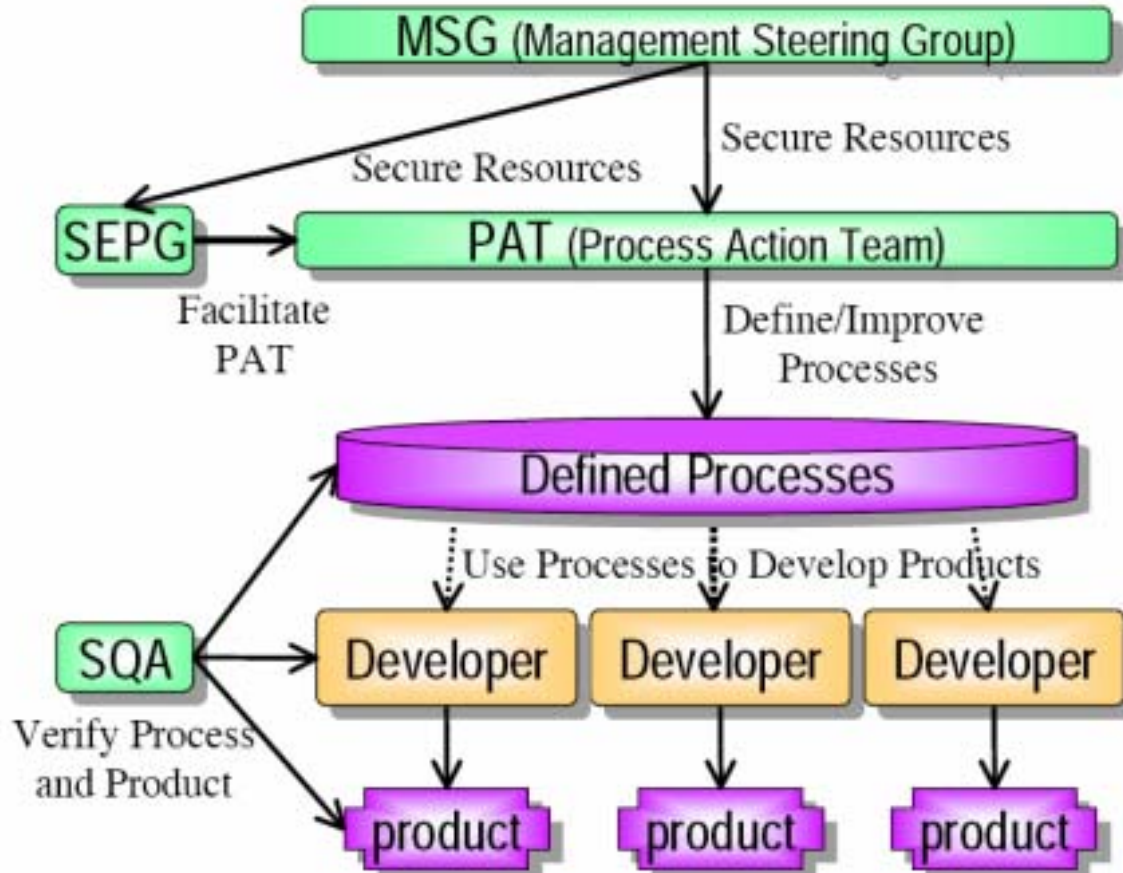
... But Quality Is Cheaper Than The Alternatives

SEI

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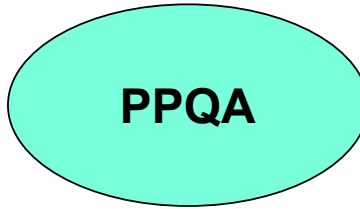
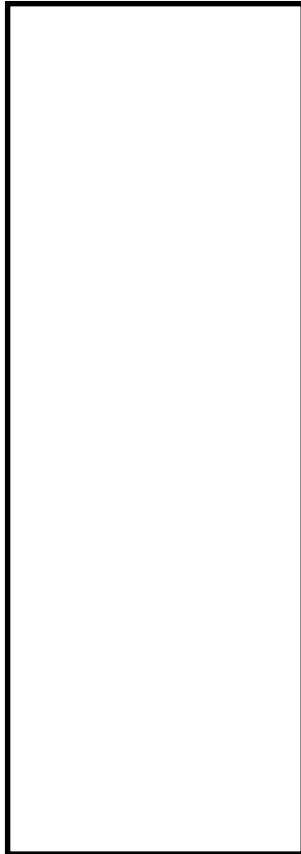
- **Method:** *Individual*
- **Timing:** *15'*
- **Form:** *Individual elaboration*
- **Documents:** *Process Rule 9; form: next foil*
- **Deliverable:** *Filled in form*

Question:

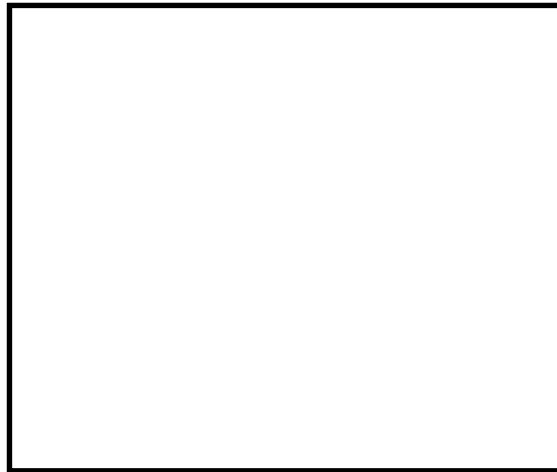
- I. Based on your experience, the prior discussion and the **PPQA** process definition list the involved roles, the performed activities, and the produced work products.*

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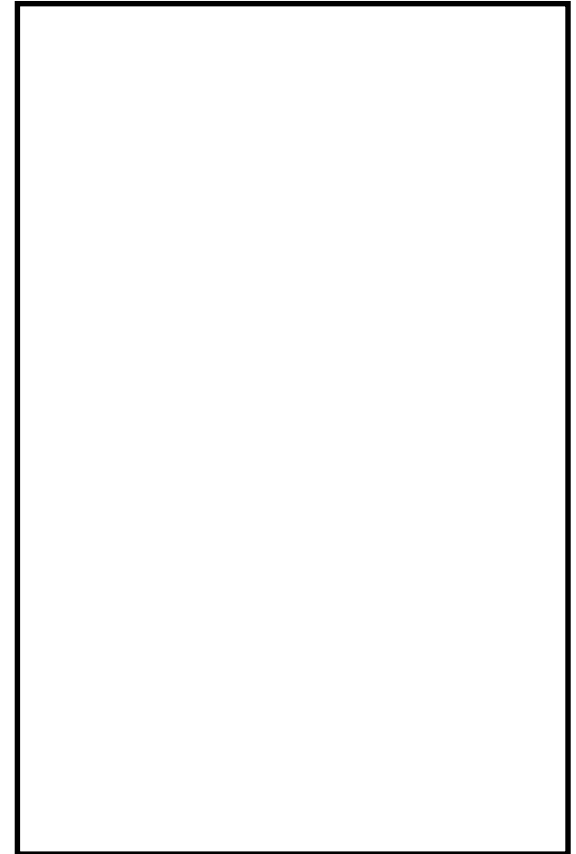
Roles



Activities



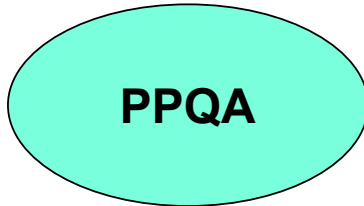
Work Products



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Roles

- Central QM
- GPM
- HOD
- OPO
- QA
- SEPG



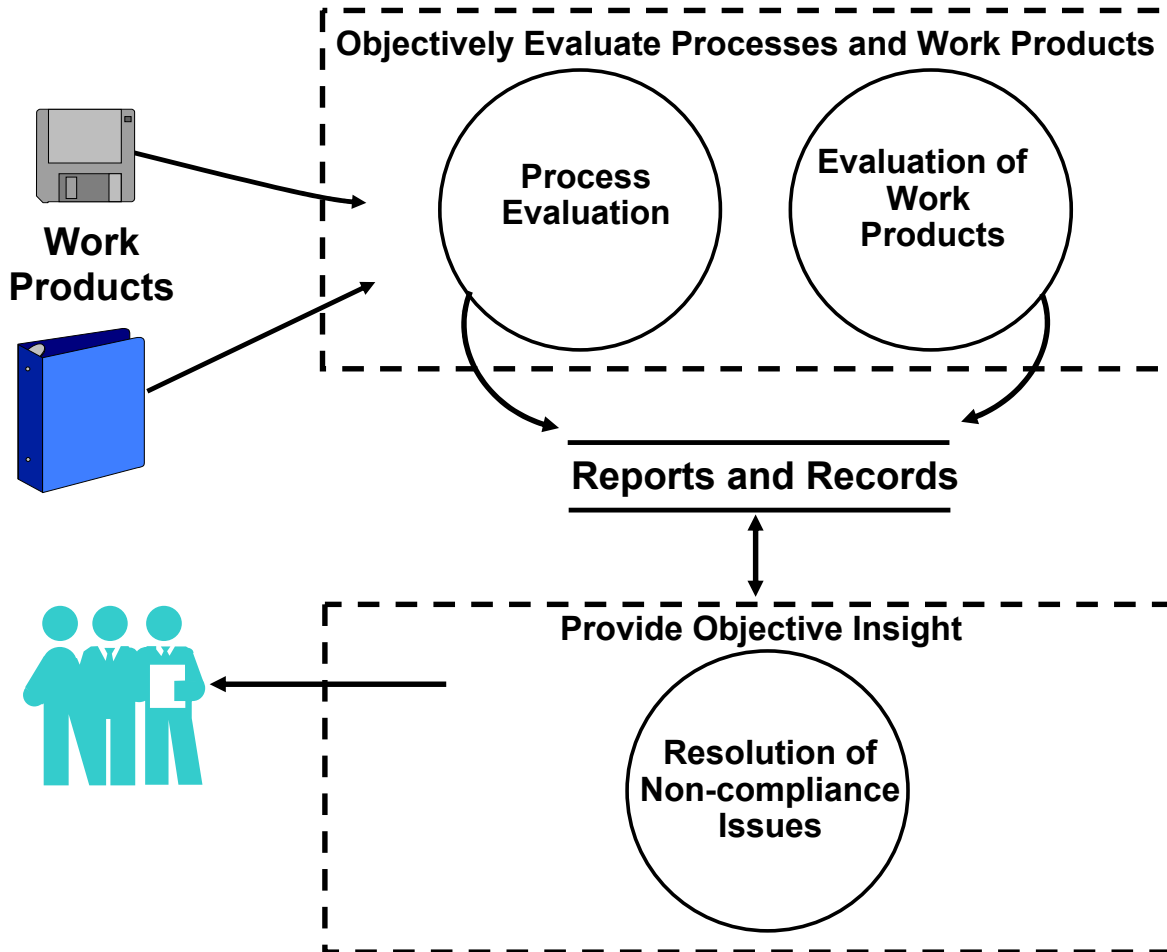
Activities

- Process evaluation
- Evaluation of Work Products
- Resolution of Non-compliance Issues

Work Products

- PIP design review reports
- MES System Audit Report
- Product Line Quality Trends
- Q-Day Analysis Reports
- Non-Compliance List – Projects
- Non-Compliance List – Audits

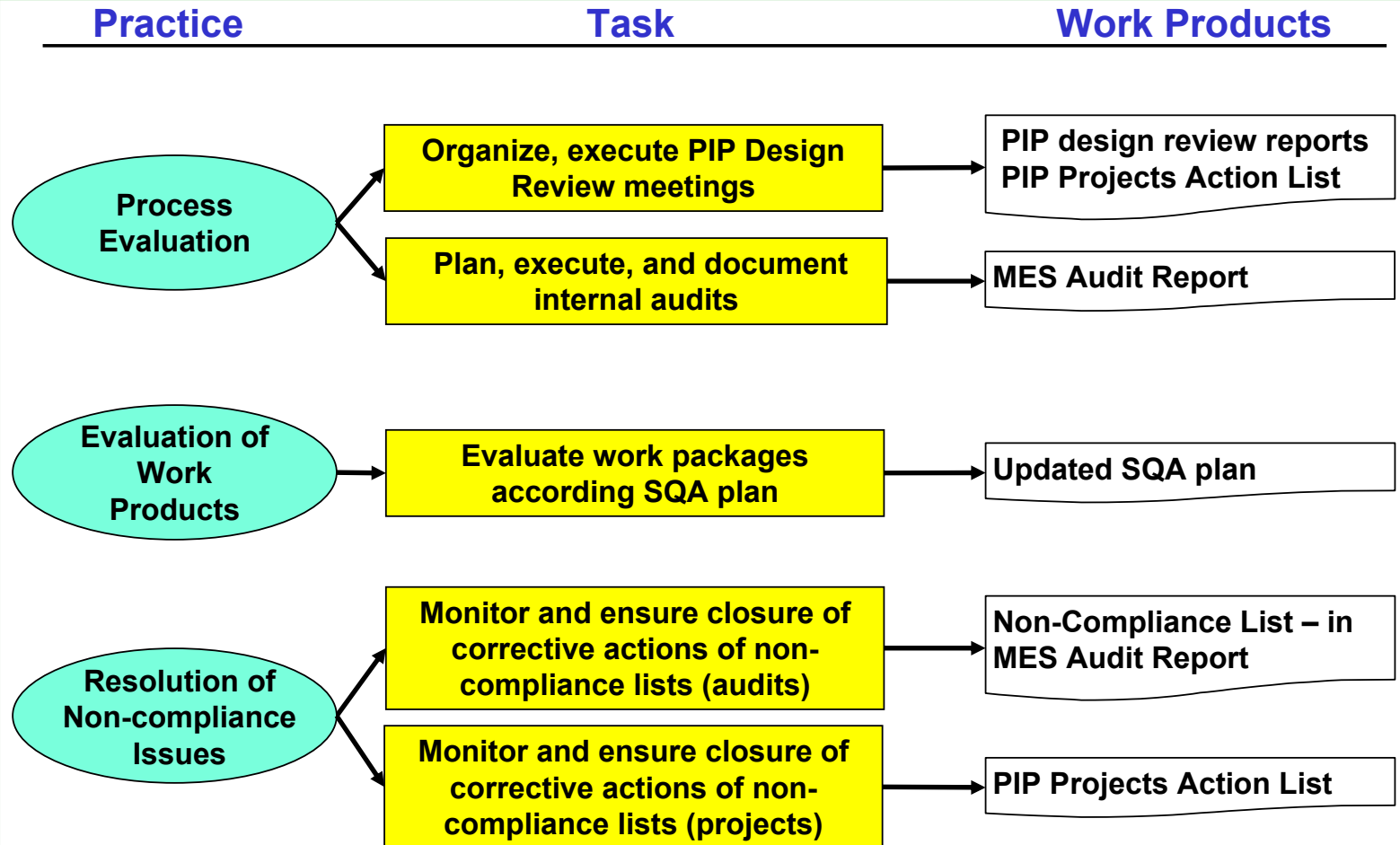
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PPQA Process Tasks



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Process & Project Improvement Monitoring List



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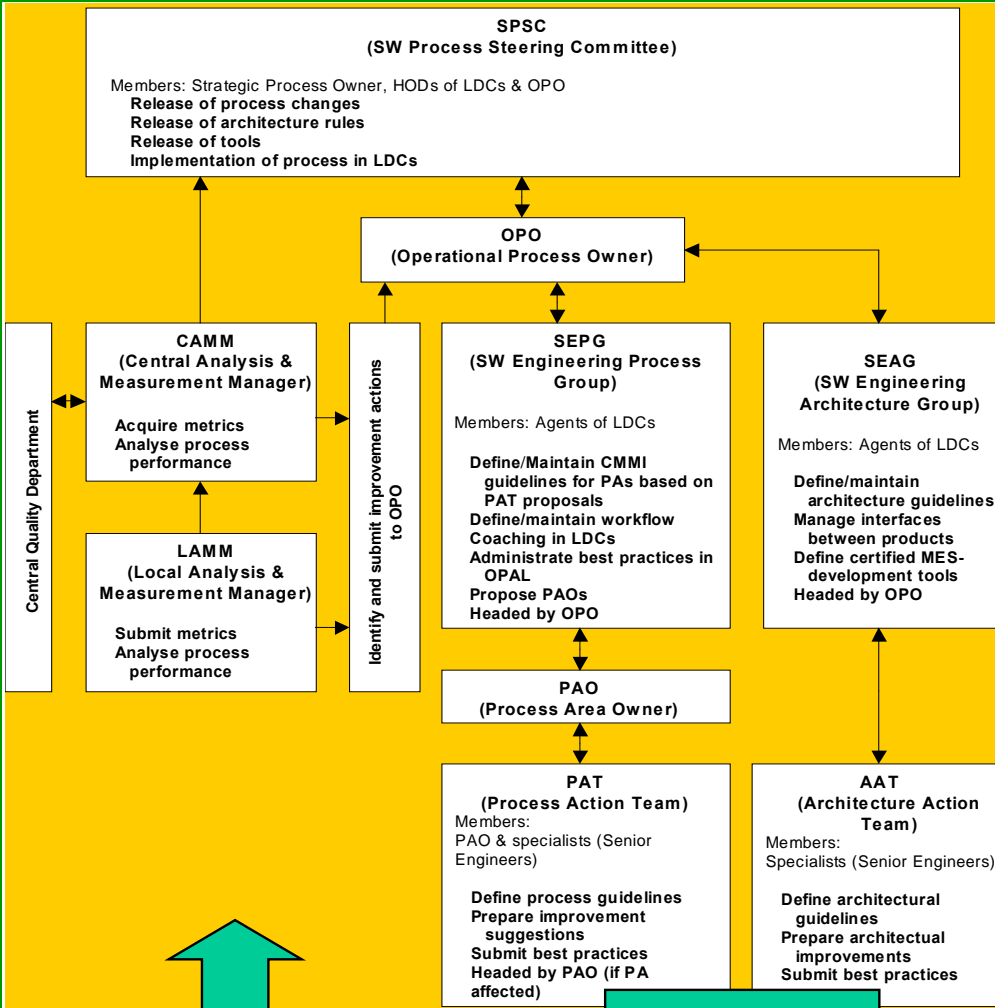
Lessons learned and best practices									
Id	Improvement Suggestion	Project	Priorit	Suggested by	Date	Responsible for improver	Solution available (date)	Status	
L1	Einführung der Finanzberichte	Project Monitoring and Control - "mPMC1"	High	Johann Neuhold Christoph Ennemoser	06.02.2001	Astrid Dahmen Christoph Ennemoser Johann Neuhold	Verfahrensanweisung MES-VA-PMC-001_R01_Financial_Report_englis ch.doc	Implemented	
L2	Checkbox für unkoordinierte Schnittstellenänderungen	Configuration Management - "mCM2"	High	Johann Neuhold	02.01.2003	Johann Neuhold	Implemented in ClearQuest	Implemented	
L3	Aufnahme von Abnahmekriterien in die URS	Requirement Development RME - "mRM1"	Middle	Johann Neuhold	02.01.2003	Michael Conrad		Submitted	
L4	Anforderungsdatenbank	Requirement Management RME - "mRM1"	High	Johann Neuhold	02.01.2003	Michael Conrad	Requirements-DB im ClearQuest implementiert KW 9 Vorstellung durch Hrn. Neuhold / alle GPM, PM	Submitted	
L5	Einführung bzw. Erhöhung des Testautomatisierungsgrades	Verification - "mVV2"	Middle	Christoph Ennemoser	02.01.2003	Christoph Ennemoser		Implemented	
L6	Teilnahme Projektabschlussbesprechung (Hans Neuhold)		Middle	Johann Neuhold	07.02.2003	Johann Neuhold	keine direkte Teilnahme, sondern danach getrenntes Gespräch mit Projektleiter	Implemented	
L7	Definition der Arbeitsergebnissen die unter Versionskontrolle zu stellen sind	Configuration Management - "mCM1"	Middle	Johann Neuhold	07.03.2003	Johann Neuhold	Version Control of Work Products.xls	Implemented	
L8	PIP Meilenstein Trend Analyse	Project Monitoring and Control - "mPMC1"	High	Johann Neuhold	15.09.2003	Johann Neuhold	\\nspe001\abtp\peg\PIP_Metrics\PIP_Milestones_Trend_Analysis_PE.xls	Implemented	
L9	Final inspections of PUMA text data. An acceptance review of all PUMA text should be defined (Franz Steiner).	Santorin V3.3	Middle	Astrid Lock	12.02.2004	Franz Steiner		Submitted	
L10	SRS-Review should be performed in two parts: 1. Formal (Check, if all required chapters are available). 2. Technical review. If possible in cooperation with a member of PPX.	Santorin V3.3	Middle	Astrid Lock	12.02.2004	SEPG		Submitted	

File: \\nfs08\Mesproj\Development_Standards\4002_CMMI\04_OPAL\Best_Practice\Lessons_learned\Lessons_learned_and_best_practices.xls

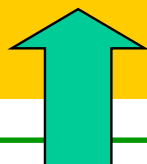
AVL SW Process Organization



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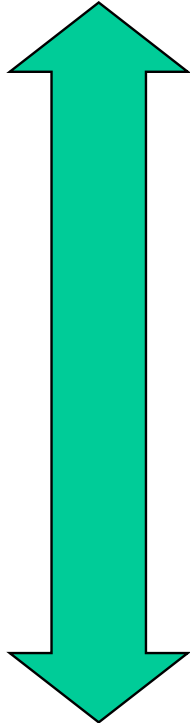


- Organizational SW Process Improvement Structure**
- SEPG...** SW Engineering Process Group
- OPO...** Operational Process Owner
- PAT...** Process Action Teams
- SEAG..** SW Engineering Architecture Group
- SPSC...** SW Process Steering Committee

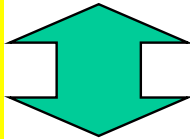


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Define and monitor



Imple-
ment



SPO – Strategic Process Owner

- Sponsor in upper management

OPO – Operational Process Owner

- Responsible in MES for SW process improvement
- Head of SEPG
- Reports status of SW process status to SPO and SPSC

SPSC – SW Process Steering Committee

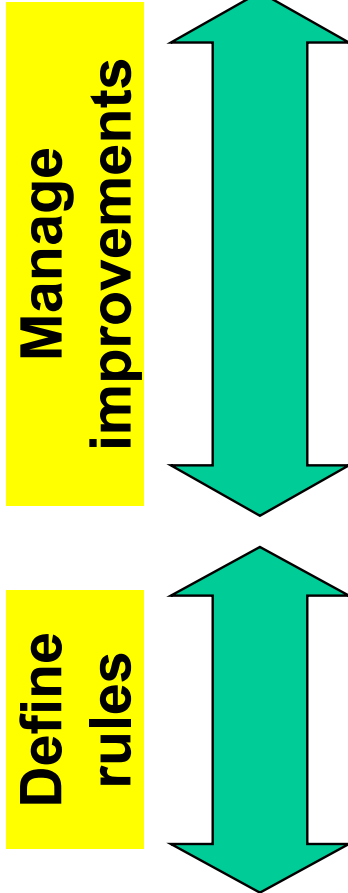
- Release of SW processes proposed by SEPG
- Members: HODs of LDC

HOD – Head of Developments

- Implement defined SW processes in their development center

Process Responsibilities in MES

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SEPG – SW Engineering Process Group

- 5 members of largest SW development centers
- Organize SW process improvement activities
- Coaching of SW engineers
- Distribute best practices via OPAL data base

PAT – Process Area Team

- Best 4 – 5 experts in MES for specific process areas
- Define/improve rules for process areas
- Proposed by HODs, appointed by SEPG

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- **Method:** *Group work*
- **Timing:** *20' group work, 15' presentation & discussion (comparative discussion of group results)*
- **Form:** *Group elaboration*
- **Documents:** *Process Rule 9: PPQA*
- **Deliverable:** *Task description on flipchart*

- **Question:**
 - I. *Describe the selected task 'PPQA_T01: Evaluation of Work Products' using the presented description technique (→ next foil).*

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Input

ID	Task Name
Description	
Roles	
Tools	
Method/Technique	

Output

- OPF
- OPD
- MA
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- PMC
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Input

- Generic SQA-Plan
- Project-specific SQA-Plan

ID PPQA_T01	Task Name Evaluation of Work Products
Description	
<ul style="list-style-type: none"> • Evaluation of the relevant work products according to the project-specific SQA-plan (mandatory and optional work products) and the PIP Design Review checklist. • Transfer of non-compliance issues to the PIP Projects Action List. 	
Roles	
PL-DP	Resp. for task PPQA_T01
Tools	
Template: Template_PPQA_FB-MES-004-006-SQ Pdr1 to 6 PIP Design Review checklist	
Method/Technique	
Review techniques (Rule 24: REVIEW)	

Output

- PIP Design Review report
- Type Approval Report
- PIP Projects Action List

Rule 9: Work Products and Templates



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WP Id	Type	Description	Task Id	Resp.	Link to Template
PPQA_W01	M	PIP design review reports	PPQA_T01	QA	Template_PPQA_FB-MES-004-006-SQ-Pdr1 to 6
PPQA_W02	M	MES System Audit Report	PPQA_T03	Central QM	Template_PPQA_FB-MES-017-001-SQ_Bericht_internes_Audit.dot
PPQA_W03	M	Non-Compliance List - Projects	PPQA_T05	HOD	Template_PP_PIP_Projects_Action_List
PPQA_W04	M	Non-Compliance List - Audits	PPQA_T04	Central QM	Internal Audit Action List

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- **Method:** *Small groups*
- **Timing:** *10' group work, 10' discussion in plenum*
- **Form:** *Group elaboration*
- **Documents:** *none*
- **Deliverable:** *Group notes*

- **Question:**
Processes are defined and trained according to its definition, standard, and procedures.
 - I. How can we ensure that the processes are lived accordingly?*
 - II. Who is evaluating the adherence?*

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GP2.9 OBJECTIVELY EVALUATE ADHERENCE

Objectively evaluate adherence of the process against its process description, standards, and procedures, and address noncompliance.

Purpose:

Provide credible assurance that the process is implemented as planned and adheres to its process description, standards, and procedures.

Practice:

- People not directly responsible for managing or performing the activities of the process typically evaluate adherence.
- Adherence is evaluated by people within the organization, but external to the process or project, or by people external to the organization.

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*What was important for
you concerning this
Process Rule?*



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