

# Level 5 Procedure Checklists

## Overview

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**Introduction** This section describes all the explicit documented procedures in the Capability Maturity Model for maturity level 5.

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**Purpose** The purpose of the procedure checklists is to provide:

- Guidance in identifying which procedures are recommended by the CMM at level 5.
- Criteria that an organization can use to evaluate its software procedures to determine if those procedures are consistent with the CMM at level 5.
- Information that can be used to develop software procedures that are consistent with the CMM at level 5.

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**In this section** This section covers the following documented procedures:

<b>CMM Level 5 Procedures</b>	<b>See Page</b>
Defect prevention procedures	L5-Procedures-2
Technology change management procedures	L5-Procedures-3
Process change management procedures	L5-Procedures-4

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# Defect Prevention (DP) Procedures

## Documented procedure

The table below lists the recommended documented procedures for the defect prevention process.

√	Documented Procedure	References
	<p>Causal analysis meetings are conducted according to a documented procedure. (L5-7, A3)</p> <p>This procedure typically specifies that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Each <b>team that performs a software task</b> conducts causal analysis meetings.               <ul style="list-style-type: none"> <li><input type="checkbox"/> A causal analysis meeting is conducted shortly after the task is completed.</li> <li><input type="checkbox"/> Meetings are conducted during the software task if and when the number of defects uncovered warrants the additional meetings.</li> <li><input type="checkbox"/> Periodic causal analysis meetings are conducted after software products are released to the customer, as appropriate.</li> <li><input type="checkbox"/> For software tasks of long duration, periodic in-process defect prevention meetings are conducted, as appropriate.</li> </ul> </li> <li><input type="checkbox"/> The meetings are led by a <b>person trained in conducting causal analysis meetings</b>.</li> <li><input type="checkbox"/> Defects are identified and analyzed to determine their root causes.</li> <li><input type="checkbox"/> The defects are assigned to categories of root causes.</li> <li><input type="checkbox"/> Proposed actions to prevent the future occurrence of identified defects and similar defects are developed and documented.</li> <li><input type="checkbox"/> Common causes of defects are identified and documented.</li> <li><input type="checkbox"/> The results of the meeting are recorded for use by the organization and other projects.</li> </ul>	
	<p>Revisions to the organization's standard software process resulting from defect prevention actions are incorporated according to a documented procedure. (L5-12, A6)</p>	
	<p>Revisions to the project's defined software process resulting from defect prevention actions are incorporated according to a documented procedure. (L5-12, A7)</p>	

# Technology Change Management (TCM) Procedures

## Documented procedures

The table below lists the recommended documented procedures for the technology change management process.

√	Documented Procedures	References
	<p>Technologies are selected and acquired for the organization and software projects according to a documented procedure. (L5-26, A5)</p> <p>This procedure typically specifies that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Requests for the acquisition of new technologies are documented.                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Management approval is required for technologies with projected expenses above a predefined level.</li> </ul> </li> <li><input type="checkbox"/> Preliminary cost/benefit analyses are performed for the potential technology changes.</li> <li><input type="checkbox"/> Predefined and approved selection criteria are used to identify the highest potential benefits.</li> <li><input type="checkbox"/> Requirements and plans for the selected technology changes are defined and documented.                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Where practical, the expected life span and plans for replacement/upgrade are estimated.</li> <li><input type="checkbox"/> Where appropriate, tradeoff studies are performed, reviewed, and documented to determine whether the technology should be developed internally or procured externally.</li> <li><input type="checkbox"/> Where appropriate, the plan provides for installing the new technology on a pilot basis to determine its effectiveness and economic benefits.</li> <li><input type="checkbox"/> The requirements and plans are reviewed by the managers of the affected groups and the group responsible for technology change management activities.</li> </ul> </li> </ul>	
	<p>Appropriate new technologies are incorporated into the organization's standard software process according to a documented procedure. (L5-28, A7)</p>	
	<p>Appropriate new technologies are incorporated into the projects' defined software processes according to a documented procedure. (L5-28, A8)</p>	

# Process Change Management (PCM) Procedures

## Documented procedures

The table below lists the recommended documented procedures for the process change management process.

√	Documented Procedures	References
	<p>The organization develops and maintains a plan for software process improvement according to a documented procedure. (L5-37, A3)</p> <p>This procedure typically specifies that:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> The software process improvement plan is based on:<ul style="list-style-type: none"><li><input type="checkbox"/> The organization's business and strategic operating plans.</li><li><input type="checkbox"/> Customer satisfaction indicators.</li></ul></li><li><input type="checkbox"/> The software process improvement plan undergoes peer review.</li><li><input type="checkbox"/> The software process improvement plan is reviewed by the affected <b>managers</b>.</li><li><input type="checkbox"/> The software process improvement plan is managed and controlled.</li></ul>	

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## Process Change Management (PCM) Procedures, Continued

### Documented procedures, continued

The table below lists the recommended documented procedures for the process change management process continued from the previous page.

√	Documented Procedures	References
	<p>Software process improvement proposals are handled according to a documented procedure. (L5-39, A5)</p> <p>This procedure typically specifies that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Software process improvement proposals are submitted.</li> <li><input type="checkbox"/> Each software process improvement proposal is evaluated; a decision is made whether to implement the proposal, and the decision rationale is documented.</li> <li><input type="checkbox"/> The expected benefits of each software process improvement proposal are determined.</li> <li><input type="checkbox"/> The priority of software process improvement proposals selected for implementation is determined. <ul style="list-style-type: none"> <li><input type="checkbox"/> Focus on high-priority software process improvement proposals is maintained.</li> </ul> </li> <li><input type="checkbox"/> Implementation of the software process improvement actions resulting from the proposals is assigned and planned.</li> <li><input type="checkbox"/> Software process improvement actions that require a substantial effort are assigned to a <b>team responsible for implementation</b>.</li> <li><input type="checkbox"/> The status of each software process improvement proposal is tracked.</li> <li><input type="checkbox"/> Software process improvement proposals for which the response has been unusually long are identified and acted upon.</li> <li><input type="checkbox"/> Software process changes that are judged to have a major impact on product quality or productivity or that will significantly alter satisfaction of the customer and end users are reviewed and approved by appropriate <b>management</b> before they are implemented.</li> <li><input type="checkbox"/> Completed software process improvement actions are reviewed, verified, and approved before they are closed.</li> <li><input type="checkbox"/> <b>Submitters of the software process improvement proposals</b> receive: <ul style="list-style-type: none"> <li><input type="checkbox"/> Prompt acknowledgment of their proposals.</li> <li><input type="checkbox"/> Notification of the disposition of their proposals.</li> </ul> </li> </ul>	

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## Process Change Management (PCM) Procedures, Continued

### Documented procedures, continued

The table below lists the recommended documented procedures for the process change management process, continued from the previous page.

√	Documented Procedures	References
	<p>When the decision is made to transfer a software process improvement into normal practice, the improvement is implemented according to a documented procedure. (L5-42, A8)</p> <p>This procedure typically specifies that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The resources needed to support major changes to the software process are established and funded.</li> <li><input type="checkbox"/> The strategy for collecting data to measure and track the change in software process performance is documented, reviewed, and agreed to. <ul style="list-style-type: none"> <li><input type="checkbox"/> This strategy is agreed to by the <b>individuals responsible for implementing the software processes affected by the change.</b></li> <li><input type="checkbox"/> The support tools are instrumented, as appropriate, to record the desired data automatically.</li> </ul> </li> <li><input type="checkbox"/> Training courses are updated to reflect the current software process, and training is provided before installing the process change for general use.</li> <li><input type="checkbox"/> Consultation support, appropriate to the expected needs, is established before installing the process change for broad-scale use and is continued as needed.</li> <li><input type="checkbox"/> Appropriate process changes are incorporated into the organization's standard software process.</li> <li><input type="checkbox"/> Appropriate process changes are incorporated into the projects' defined software processes.</li> </ul>	