

**CONFIGURATION MANAGEMENT PROCESS**

**Software Process And Quality Management**

**Team 5 K16T1**



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# INTRODUCTION:

## DOCUMENT PURPOSE:

This document ***is*** Configuration Management (CM) of systems and/or software engineering efforts. CM supports the management and control of project requirements and configurations. CM establishes and maintains the integrity of the products of a project throughout the project life cycle. CM involves identifying the configuration of products developed and delivered to the customer, systematically controlling changes to the configuration, and maintaining the traceability of the configuration

## Scope:

This process supports projects involving systems or software engineering, or technical support services.

## Guidelines

Personnel performing CM may find it necessary or beneficial to tailor the steps defined in this document, depending upon the scope of the project for which CM is being implemented, e.g. where a project involves performing a service versus developing a hardware or software product, certain steps may be tailored or omitted as appropriate.

Project personnel charged with implementing this process shall ensure that completed work products based on this process comply with the process described in this document.

## Document Overview

This document consists of the following sections:

1. Section 1 is an introduction to the Configuration Management Process.
2. Section 2 contains the roles and responsibilities, entrance criteria, inputs, tasks, outputs and exit criteria and process measures for the Configuration Management Process.
3. Section 3:

## Reference Materials

## Abbreviations and Acronyms.

|  |  |
| --- | --- |
| Abbreviations | Acronyms |
| CCB | Configuration Control Board |
| CI | Configuration Item |
| CM | Configuration Management |
| CMP | Configuration Management Plan |
| CMU | Carnegie Mellon University |
| CR | Change Request |
| CSA | Configuration Status Accounting |
| DCR | Document Change Request |
| PM | Project Manager |
| PMP | Project Management Plan |
| QA | Quality Assurance |

# Configuration management process:

# *Process:*



# *Description*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Step name | Description | Input/ Output | Resource |
| 1 | Create and Maintain Project CMP | The CM Group documents CM plans in a PMP and/or in a CMP.  The PM, CCB and other affected groups review and approve the CMP. The PM and CCB provide commitment to the plan.  The PM and CCB use the CMP as the basis for all planned CM activities, schedules, and resource requirements. |  |  |
| 2 | Manage Implementation of CMP | The CM Group develops procedures to implement the CMP and performs CM activities.  The CM Group resolves CM deficiency reports against CM tools, processes, procedures, or reports  The CM Manager oversees implementation of CM tasks and identifies resources, positions, and tools needed to implement the CMP and supporting procedures. |  |  |
| 3 | Provide CM Training | The CM Manager uses the project CMP, and any supporting procedures to determine the specific CM training requirements. Where appropriate, the CM Manager obtains required special training necessary to utilize supporting CM tools.  The CM Group reviews updates to procedures supporting CM that necessitate new or revised training, skills, or supporting tools.  The CM Manager ensures standardized CM training presentations are documented, archived and controlled. The CM Manager ensures that training events are scheduled in the overall project plan and schedule.  The CM Manager coordinates and oversees CM training for members of the CM Group, and project engineering-related groups. The CM Manager reports to the PM the status of CM training activities.  The CM Manager records data on CM training provided in accordance with the project Training Plan.. |  |  |
| 4 | Perform Configuration Identification | The CM Group, in agreement with the PM, identifies the items to be placed under CM.  The CM Group assigns unique identifiers (including the associated baseline) to configuration items and related technical documentation and data.  The CM Group assigns tracking numbers to CRs and maintains a CR database.  The CM Group establishes CM libraries. |  |  |
| 5 | Perform Configuration Control | The CM Group, in agreement with the PM, identifies the items to be placed under CM. The CM Group assigns unique identifiers (including the associated baseline) to configuration items and related technical documentation and data.  The CM Group assigns tracking numbers to CRs and maintains a CR database.  The CM Group establishes CM libraries. |  |  |
| 6 | Perform Configuration Status Accounting | The CM Group maintains a database of information used to produce CSA reports.  The CM Group documents the specifications for this database in the project CMP or PMP.  The CM Manager with the PM determines the appropriate media for archiving and accessing the CSA database.  The CM Group receives change information to configuration items for entry into the database that supports CSA reports.  The CM Group produces CSA reports to provide visibility into the status of baselines.  The CM Group periodically distributes CSA reports to address status and history of controlled products, approved identification numbers, library and baseline contents, CR implementation status, CCB decisions, and deficiencies. |  |  |
| 7 | Perform Configuration Audits and Reviews | QA audits the functional characteristics of the products to verify they have achieved the requirements specified in the functional and allocated configuration documentation.  QA audits the as-built product configurations against the technical documentation to establish or verify the product baseline.  The CM Group documents the procedures for conducting formal audits of configuration items as FCAs and PCAs in accordance with the requirements of the project CMP and using reference (e) as a guideline.  The CM Group supports the functional and physical audits, provides requested data, and performs periodic informal review of CM tasks, procedures, CSA reports, and products.  s  The CM Manager oversees resolution of reported deficiencies against CM activities. |  |  |
| 8 | Monitor and Control the CM Process | The PM and/or CM Manager monitors and controls this process against the CMP or PMP and takes appropriate corrective action to address deviations.  The CM Group documents procedures for conducting periodic reviews, informal audits, and addressing deviations revealed during these activities.  QA reviews these corrective actions to ensure processes are documented and to ensure compliance, and reports the results of these reviews to the PM. |  |  |
| 9 | Objectively Evaluate Adherence | QA provides objective evaluation of this process against its process description, standards and procedures, and reports and addresses noncompliance.  The PM receives these reports of noncompliance and determines appropriate measures to be taken to resolve these discrepancies.  QA maintains records of these reports and the resolution of them. |  |  |
| 10 | Review Status with Higher-Level Management | The PM and/or CM Group reviews and reports to higher-level management the activities, status, and results of this process and resolves issues.  The CM Group reports performance measures to facilitate reviewing the effectiveness of CM activities.  The PM schedules formal reviews and status reports of CM activity in the overall project schedule, and documents the requirement for these reviews in the PMP |  |  |
| 11 | Collect Improvement Information | The CM Group collects work products, measurements and improvement information derived from planning and performing this process to support the future use and improvement of the organization’s CM Process and process assets.  The PM analyzes the results of CM activity performance measures to develop improvement objectives for CM. |  |  |

# *Role and responsibility*

|  |  |
| --- | --- |
| Roles | Responsibility |
| Project Manager | The Project Manager (PM) is responsible for establishing the CM Process.  The PM uses the provisions of the Systems/Software Engineering Management Policy, the Project Management Plan Template to define the expectations for successful implementation of CM.  The PM appoints the members of the project CM organization.  The PM assigns the resources and tasking to the CM Manager and CM Group, tracks the effort expended and progress made, and interacts regularly with the CM Manager regarding the performance of assigned individuals.  The PM obtains objective verification of process compliance and process integrity from Quality Assurance (QA), and takes corrective actions as is determined necessary.  The PM reports process progress to higher-level management. |
| CM Manager | The CM Manager is responsible for the execution of the CM Process.  The CM Manager plans and documents the project CM activities in the Project Management Plan (PMP), supporting project schedule, and CM Plan (CMP).  The CM Manager uses Project Management Plan and the CMP Template, as guidance for preparing the CMP.  The CM Manager leads the CM Group, and directs its activities in coordination with the expectations set forth by the PM.  The CM Manager monitors the performance of the process, collects metrics and reports on the process status to the PM. |
| CM Group | The CM group, which includes the CM Manager, is responsible for executing the CM Process.  CM Group members report their progress through weekly measurements and make recommendations for process improvement to the CM Manager as the need arises.  Each team member attends CM training. The training includes instruction on the tasks to be performed and the measurements that each individual will be expected to report on a weekly basis. |
| Configuration Control Board | The Configuration Control Board (CCB) establishes new product baselines, and oversees and adjudicates all proposed changes to existing configuration baselines in accordance with the project CMP and CCB Charter.  The Project CMP documents board membership requirements.  The PM appoints the membership of the CCB that is charged with implementing the provisions of the CMP. Membership in the CCB includes, as much as possible, representation from all project engineering and technical support areas. Customer representation on the CCB may be included. |
| Quality Assurance | QA monitors CM Process performance for adherence to the standards referenced in this process, documents the results of periodic objective verification of process compliance, reports findings to the CM Manager, PM and Senior Management, and works with the CM Manager and PM to resolve process issues. QA also participates with the CM Group in the conduct of formal CM verification activities (e.g. Functional and Physical Configuration Audits) as prescribed by the project CMP. |