

**STUDENT FINANCIAL ASSISTANCE (SFA)
Software Configuration Management (SCM)
Key Process Area Job Aid**



SCM: A Key Process Area For The Capability Maturity Model (Level 2): Repeatable

Purpose and scope

This document has two purposes for the Configuration Management (CM) Subgroup:

- Provides an overview of project level SCM
- Often applies to enterprise level SCM

This document is extracted from “The Capability Maturity Model: Guidelines for Improving the Software Process” (pages 180-191). Software configuration management is one of the key process areas for level 2 of CMM. The reader should gain a general overview of this key process area, and the practices used for performing the software configuration management function. It should be used as advanced reading material to prepare for upcoming meetings. If there any questions or concerns with this material contact Bill Hughes at (202) 651-3822.

Goals

- Goal 1 Software configuration management activities are planned.
- Goal 2 Selected software work products are identified, controlled, and available.
- Goal 3 Changes to identified software work products are controlled.
- Goal 4 Affected groups and individuals are informed of the status and content of software baselines.

Commitment to Perform

- Commitment 1 The project follows a written organizational policy for implementing software configuration management (SCM).

Ability to Perform

- Ability 1 A board having the authority for managing the project’s software baselines (i.e., a software configuration control board—SCCB) exists or is established.
- Ability 2 A group that is responsible for coordinating and implementing SCM for the project (i.e., the SCM group) exists.
- Ability 3 Adequate resources and funding are provided for performing the SCM activities.

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- Ability 4 Members of the SCM group are trained in the objectives, procedures, and methods for performing their SCM activities.
- Ability 5 Members of the software engineering group and other software-related groups are trained to perform their SCM activities.

Activities Performed

- Activity 1 A SCM plan is prepared for each software project according to a documented procedure.
- Activity 2 A documented and approved SCM plan is used as the basis for performing the SCM activities.
- Activity 3 A configuration management library system is established as a repository for the software baselines.
- Activity 4 The software work products to be placed under configuration management are identified.
- Activity 5 Change requests and problem reports for all configuration items/units are initiated, recorded, reviewed, approved, and tracked according to a documented procedure.
- Activity 6 Changes to baselines are controlled according to a documented procedure.
- Activity 7 Products from the software baseline library are created and their release is controlled according to a documented procedure.
- Activity 8 The status of configuration items/units is recorded according to a documented procedure.
- Activity 9 Standard reports documenting the SCM activities and the contents of the software baseline are developed and made available to affected groups and individuals.
- Activity 10 Software baseline audits are conducted according to a documented procedure.

Measurement and Analysis

- Measurement 1 Measurements are made and used to determine the status of the SCM activities.

Verifying Implementation

- Verification 1 The SCM activities are reviewed with senior management on a periodic basis.

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- Verification 2 The SCM activities are reviewed with the project manager on both a periodic and event-driven basis.
- Verification 3 The SCM group periodically audits software baselines to verify that they conform to the documentation that defines them.
- Verification 4 The software quality assurance group reviews and/or audits the activities and work products for SCM and reports the results.