

Software Configuration Management Plan

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1. Introduction

This SCM Plan conforms with the requirements of ANSI/IEEE Std 828-1990, "IEEE Standard for Software Configuration Management Plans".

Provide a simplified overview of the SCM activities so that those approving, those performing, and those interacting with SCM can obtain a clear understanding of the Plan. Describe the four following topics: the Plan's purpose, scope of application, key terms, and references.

The purpose shall briefly address why the plan exists and who the intended audience is.

The scope shall address SCM applicability, limitations, and assumptions on which the Plan is based. The following items shall be included:

- 1. Overview description of the software development project*
- 2. Identification of the software CI(s) to which SCM will be applied*
- 3. Identification of other software to be included as part of the Plan (i.e., support or test software)*
- 4. Relationship of SCM to the hardware or system configuration management activities of the project*
- 5. The degree of formality, depth of control, and portion of the software life cycle for applying SCM on this project*
- 6. Limitations, such as time constraints, that apply to the Plan*
- 7. Assumptions that might have an impact on the cost, schedule, or ability to perform defined SCM activities (e.g., assumptions of the degree of customer participation in SCM activities or the availability of automated aids)*

Key terms shall be defined as they apply to the Plan in order to establish a common terminology among all users of the Plan.

All references in the Plan to policies, directives, procedures, standards, terminology, and related documents shall be uniquely identified to enable retrieval by users of the Plan.

2. SCM Management

SCM management information describes the allocation of responsibilities and authorities for SCM activities to organizations and individuals within the project structure.

SCM management information shall include three topics: the project organization(s) within which SCM is to apply; the SCM responsibilities of these organizations; and references to the SCM policies and directives that apply to this project.

Identify the responsibilities and authorities for accomplishing the planned activities.

2.1 Organization

The organizational context, both technical and managerial, within which the planned SCM activities are to be implemented shall be described. The Plan shall identify the following:

- 8. All organizational units that participate in or are responsible for any SCM activity in the project*
- 9. The functional roles of these organizational units within the project structure*
- 10. Relationships between organizational units*

Organizational units may consist of a vendor and customer, a prime contractor and

subcontractors, or different groups within one organization. Organization charts, supplemented by statements of function and relationships, can be an effective way of presenting this information.

2.2 SCM Responsibilities

*The allocation of SCM activities to organizational units shall be specified. For each activity listed within **SCM Activities** (below), the name of the organizational unit or job title to perform this activity shall be provided. A matrix that relates the organizations defined above to the SCM functions, activities, and tasks can be useful for documenting the SCM responsibilities.*

For any review board or special organization established for performing SCM activities on this project, the Plan shall describe the:

- 11. Purpose and objectives*
- 12. Membership and affiliations*
- 13. Period of effectivity*
- 14. Scope of authority*
- 15. Operational procedures*

2.3 Applicable Policies, Directives, and Procedures

Identify any external constraints placed on the Plan by other policies, directives, and procedures. For each, state its impact and effect on the Plan.

3. SCM Activities

Identify all activities to be performed in applying SCM to the project. All activities defined here shall be assigned to an organizational unit.

SCM activities information identifies all functions and tasks required to manage the configuration of the software system as specified in the scope of the Plan. Both technical and managerial SCM activities shall be identified. General project activities that have SCM implications shall be described from the SCM perspective.

SCM activities are traditionally grouped into four functions: configuration identification, configuration control, status accounting, and configuration audits and reviews. The information requirements for each are identified below in sections 3.1 through 3.4. Due to their high risk nature, the requirements for interface control and subcontractor/vendor control activities are identified separately in sections 3.5 and 3.6.

3.1 Configuration Identification

Configuration identification activities shall identify, name, and describe the documented physical and functional characteristics of the code, specifications, design, and data elements to be controlled for the project. The documents are acquired for configuration control. Controlled items may be intermediate and final outputs (such as executable code, source code, user documentation, program listings, data bases, test cases, test plans, specifications, and management plans) and elements of the support environment (such as compilers, operating systems, programming tools and test beds).

The Plan shall identify the project configuration items (CI) and their structures at each

project control point. The Plan states how each CI and its versions are to be uniquely named and describes the activities performed to define, track, store, and retrieve CIs. The following sections specify information required for configuration identification.

3.1.1 Identifying Configuration Items

The Plan shall record the items to be controlled, the project CIs, and their definitions as they evolve or are selected. The Plan shall also describe how the list of items and the structures are to be maintained for the project.

As a minimum, all CIs that are to be delivered shall be listed.

Appropriate baselines shall be defined at control points within the projects life cycle in terms of the following:

- (1) The event that create the baseline.*
- (2) The items that are to be controlled in the baseline*
- (3) The procedures used to establish and change the baseline*
- (4) The authority required to approve baselined documents*

A means of identifying changes and associating them with the affected CIs and the related baseline shall be specified.

3.1.2 Naming Configuration Items

The Plan shall specify an identification system for assigning unique identifiers to each item to be controlled. It shall also specify how different versions of each are to be uniquely identified. Identification methods could include naming conventions and version numbers and letters.

The Plan shall describe the methods for naming controlled items for purposes of storage, retrieval, tracking, reproduction and distribution. Activities

3.1.3 Acquiring Configuration Items

3.2 Configuration Control

All CIs identified in the Plan shall have defined processes for baseline establishment and change control.

3.2.1 Requesting Changes

3.2.2 Evaluating Changes

3.2.3 Approving or Disapproving Changes

3.2.4 Implementing Changes

3.3 Configuration Status Accounting

3.4 Configuration Audits and Reviews

3.5 Interface Control

3.6 Subcontractor/Vendor Control

4. SCM Schedules

Identify the required coordination of SCM activities with other activities in the project.

5. SCM Resources

Identify tools and physical and human resources required for execution of the Plan. All defined activities shall have resources identified to accomplish the activities.

6. SCM Plan Maintenance

Identify how the Plan will be kept current while in effect.