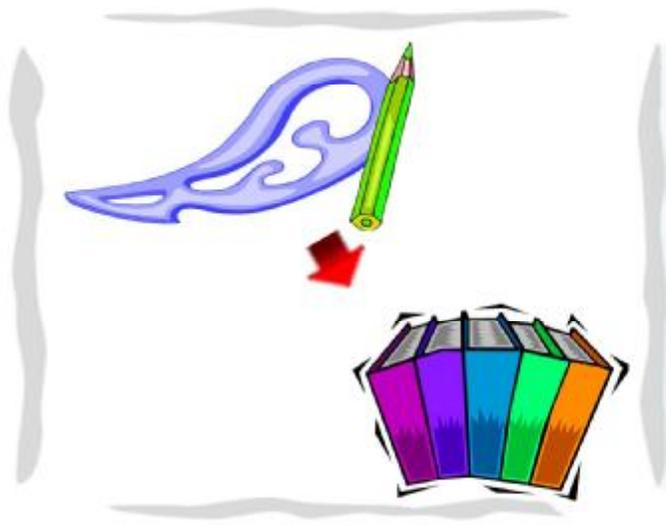


Templates



Templates For Software Configuration Management Documents

Version 5.0

SEPT Product Number 53

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Templates For Software Configuration Management Documents

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Abstract

This document contains a set of templates that enable engineers and managers to implement effective, standards-compliant software configuration management (CM). The templates found in this document conform to the software CM requirements specified in standards ISO/IEC 12207:2008, *Software life cycle processes*, ISO/IEC 15288:2008, *System life cycle processes*, and IEC 62304, *Medical Device Software – Software Life Cycle Processes*. These templates provide generic descriptions and instructions that are compliant with the above standards and provide a structure within which you can include project-specific information. Once tailored, the templates become a complete set of documents that allow implementation of software configuration management compliant with both international and project-specific requirements.

Thirteen templates are provided. They are:

<u>Template #</u>	<u>Template Name</u>
1	Software Configuration Management Policy
2	Software Configuration Management Strategy
3	Software Configuration Management Organization Charts
4	Software Configuration Management Plan
5	Software Configuration Management Process
6	Software Configuration Identification Procedure
7	Software Configuration Change Control Procedure
8	Software Configuration Status Accounting Procedure
9	Software Configuration Item Check-in and Check-out Procedure
10	Software Configuration Audits and Reviews Procedure
11A	Subcontractor Software Configuration Control Procedure
11B	External Interface Configuration Control Procedure
12	Software Product Release and Delivery Procedure

In addition to the templates shown above, this document provides five different aids to help tailor the templates.

What's New in Version 5.0

Version 5.0 CM templates have been reviewed and updated to insure compliance with the Software CM requirements of IEC 62304, *Medical device software – Software life cycle processes*. This includes updates to the Change Control and Software Release templates so that they can be used for the 62304 Problem Resolution and Software Release processes as well. In addition, as part of this update, the traceability section has been updated to show clearly and succinctly how 12207, 15288, and 62304 relate to one another.

Version 5.0 still contains the many illustrative diagrams introduced in Version 3.0. SEPT believes these diagrams will continue to provide added value in the implementation and communication of CM processes.

Version 5.0 Enhancement	Description
Internal audit of this product	SEPT reviewed and updated this document to meet the software CM requirements of IEC 62304 while still satisfying the software CM requirements of the 2008 releases of ISO/IEC 12207 and ISO/IEC 15288.
62304 traceability matrix updated in section 1.4	This diagram illustrates the traceability of our templates to the CM requirements of IEC 62304 as well as two other sections of 62304.
Updated Template 7 (Change Control)	The Change Control template has been updated to align it more closely to the diagram appearing in that section. Text has been added to enable it to serve also as a template for IEC 62304, Problem Resolution.
Updated Template 12 (Software Release)	Text has been added to ensure that this template meets the requirements for IEC 62304, Software Release.

Software Configuration Management Templates - Table of Contents

Table of Contents

1. Introduction.....	6
1.1 About Software Configuration Management.....	6
1.2 How to Use This Document.....	7
1.3 The Software Domain.....	9
1.4 Traceability to 12207, 15288, and 62304	9
Overview	9
12207 and 15288 Traceability	9
62304 Traceability.....	12
1.5 Product Support	13
1.6 Warranties and Liability	13
2. Software Configuration Management Templates.....	14
2.1 Software Configuration Management Policy.....	16
2.2 Software Configuration Management Strategy	21
2.3 Software Configuration Management Organization Charts	29
2.4 Software Configuration Management Plan.....	33
2.5 Software Configuration Management Process.....	44
2.6 Software Configuration Identification Procedure.....	54
2.7 Software Configuration Change Control Procedure.....	60
2.8 Software Configuration Status Accounting Procedure.....	67
2.9 Software Configuration Item Check-in and Check-out Procedure.....	71
2.10 Software Configuration Audits and Reviews Procedure	76
2.11 External Interfaces Procedures	80
2.12 Software Product Release and Delivery Procedure	88
3. Software Configuration Management Aids.....	94
3.1 Aid 1: Acronyms.....	95
3.2 Aid 2: Standards.....	100
3.3 Aid 3: Software Change Request Data Elements	100
3.4 Aid 4: Software Status Accounting Data Elements	101
3.5 Aid 5: Software Documentation Approval Matrix	102
4. About the Author	106

List of Figures

Figure 1: <i>Software CM templates, and aids, and how they relate.</i>	8
Figure 2: <i>Standard's document sections and relationships.</i>	10
Figure 3: <i>12207 Software CM Requirements Clauses.</i>	11
Figure 4: <i>CM Policy provides high-level guidance and control.</i>	16
Figure 5: <i>CM Strategy is guided by policy and focuses plans and procedures.</i>	21
Figure 6: <i>Software CM organization within a typical large company.</i>	30
Figure 7: <i>CM organization within a small company.</i>	31
Figure 8: <i>Organization of a typical software CM group.</i>	31
Figure 9: <i>The configuration management process showing all its inputs and outputs.</i>	45
Figure 10: <i>Controlled objects and their relationships and attributes.</i>	46
Figure 11: <i>Conceptual hierarchy of CM policies, plans, processes, and procedures.</i>	47
Figure 12: <i>Change control process flow.</i>	62
Figure 13: <i>Check-in/Check-out used by CM processes.</i>	71
Figure 14: <i>The check-in/check-out process.</i>	73
Figure 15: <i>Product release and delivery – the final step.</i>	88

Software Configuration Management Templates - Introduction

1. Introduction

In the past decade, the need for establishing effective software configuration management policies and procedures has grown in conjunction with the need for systems that are complex, fast, accurate, secure, and safety-critical. From simple everyday systems that track bank accounts to the complex systems in airplanes, cars, medical devices, and industrial, or military products; there is a demand for highly reliable, error-free software that either supports the development and maintenance of these systems or is an integral part of them.

This document provides a set of templates for implementing a software configuration management process that meets the requirements of ISO/IEC standards 12207:2008, *Software life cycle processes*, 15288:2008, *System life cycle processes*, and IEC 62304, *Medical Device Software – Software Life Cycle Processes*. These templates are easy to use, self-explanatory, and do not require expensive training or extensive experience.

Section 1.4 of this document provides a brief discussion of the ISO/IEC 12207:2008, ISO/IEC 15288:2008, and IEC 62304 standards and provides a mapping between their requirements and the templates that address them. Note that in most cases, this document simply refers to “12207” or “15288” without a version reference. Unless otherwise noted, all references to these standards refer to the 2008 versions of 12207 and 15288. Likewise, this document simply refers to “62304” and does not include a reference to its release date (2006).

1.1 About Software Configuration Management

The inclusion of software configuration management as a top-level process in the software life cycle has proven to be a necessary and cost effective step in producing and delivering quality products on time and within specified time and dollar limitations. Effective configuration management of a system’s software elements is accomplished by:

- Establishing a policy that requires the implementation of software configuration management.
- Defining a software configuration management strategy that drives subsequent plans and procedures.
- Establishing a scheme for software item identification.
- Identifying the controlled items and item types that are designed, developed, and delivered.
- Agreeing to a baseline configuration.
- Enabling the development of and changes to that agreed upon baseline.
- Recording the events of an item’s evolution through status accounting records.

It is imperative for companies that build software to have a clear and concise policy on software configuration management as well as the procedures to implement it. A CM policy should be established by executive level management to provide top-level guidance and constraints to

Software Configuration Management Templates - Introduction

lower level plans and procedures. This guidance and constraint helps insure consistency across lower level procedures including compliance with key corporate objectives.

Because software CM procedures may affect the utilization of resources across company organizations, these procedures should be reviewed and approved by an appropriate level of management in those organizations. These organizations can include Quality Management, Engineering, Testing, Project Management, and the customer (when applicable). The responsibility for defining and executing CM procedures must be clearly assigned down an organization as well as across it.

In large companies or organizations, different groups or projects may have their own unique CM requirements and resultant policies and procedures. In such cases, each organization must insure that their unique software CM plan, strategy, and procedures are aligned with higher-level CM documents.

1.2 How to Use This Document

This document is designed to aid a person, with some knowledge of software configuration management, implement a sound software CM system. Expertise in software configuration management is not required. This document provides templates and aids for software CM that can be applied to manual or automated methods and can be implemented by one or more persons depending on the scope and complexity of the project or organization. These materials are applicable to projects of all sizes, and are applicable for all types of products during their life span.

Figure 1 shows the thirteen software CM templates and five CM aids contained in this document and how they relate to one another. Note, for example, how higher level documents (organization, strategy, policy, plan) provide the overall guidance and direction for the establishment of lower level procedures.

Software Configuration Management Templates - Introduction

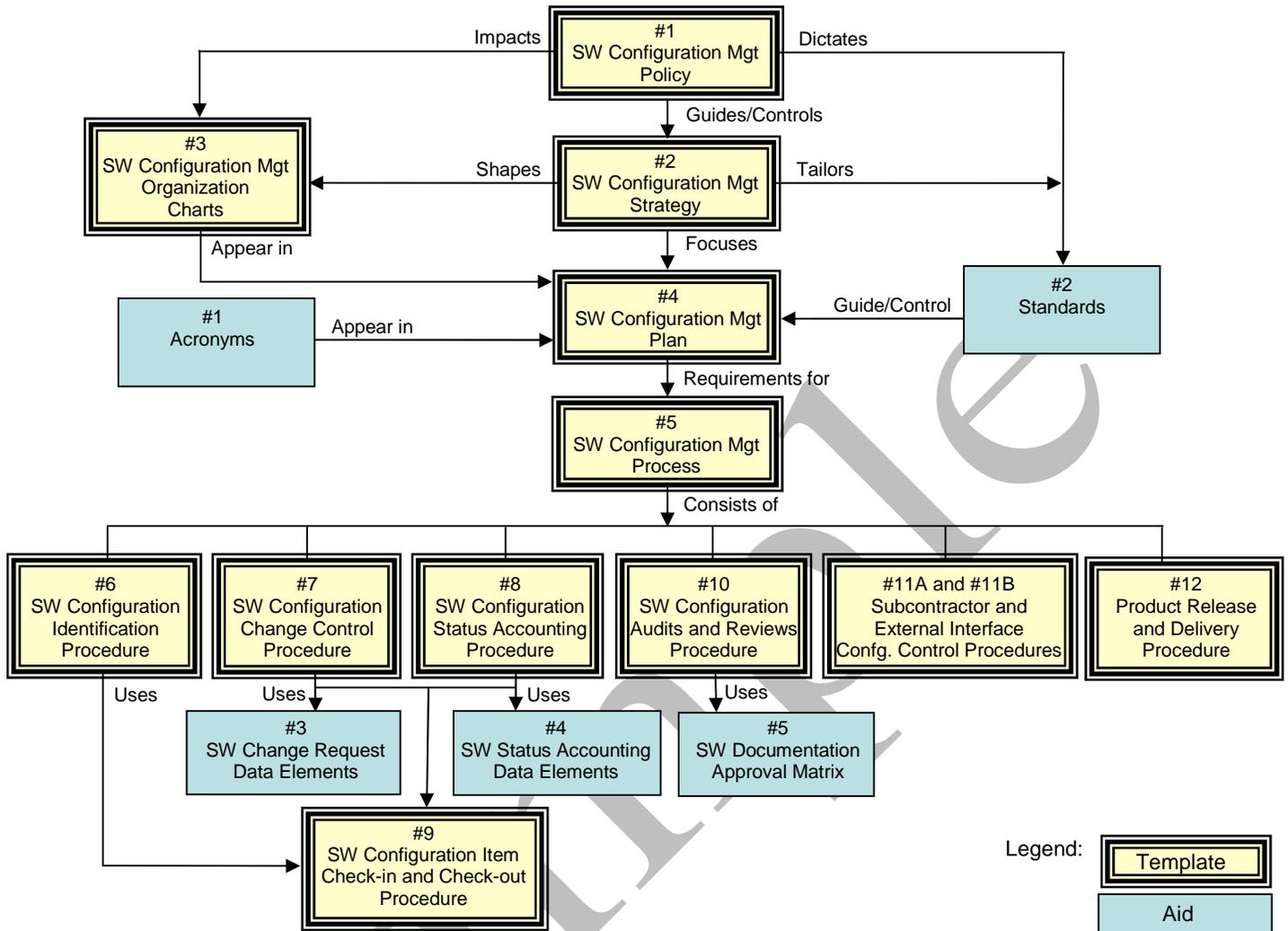


Figure 1: Software CM templates, and aids, and how they relate.

Software CM Templates

Each subsection of Section 2 (2.1, 2.3, etc) is devoted to one of the thirteen templates shown in Figure 1. Preceding each template, which begins with a title page, is a brief overview of the area being addressed by that template. Guidance notations in the templates appear underlined and should be stripped from the implemented template. Template pages can be distinguished from other types of pages in this document by the occurrence of the word “Template” in their page header. Pages that are not part of a template do not have that word in their header.

The template serves as a framework for meeting the unique CM requirements of your organization. Thus, you will have to add text that provides the necessary detail to carry out the activities described in each template. Specific tools, data, and geographic distribution of work products and people will all affect the definition of an activity and will necessitate the tailoring of each template. The size and experience of your software staff will also affect the level of detail required. You may also have to modify text for specific domains and end-item types (embedded software, government software, classified software, etc).