State of Michigan

(Insert System or Project Name Here)

Software Configuration Management Plan

# General Information

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| --- | --- | --- | --- |
| System or Project ID/Acronym: |  | Creation Date: |  |
| Client Agency: |  | Modification Date: |  |
| Author(s): |  | DTMB Authorized by: |  |

# Privacy Information

This document may contain information of a sensitive nature. This information should not be given to persons other than those who are involved with this system/project or who will become involved during its lifecycle.

# Change Control

| Revision Date | Author | Section(s) | Summary |
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# 1. Introduction

The Software Configuration Management (SCM) Plan specifically addresses configuration management for software. Configuration management for hardware, telecom, operating systems, and other components managed by Infrastructure Services are addressed by the DTMB Information Technology Infrastructure Library (ITIL) Process and Procedures.

Configuration Management of Project artifacts will be addresses separately.

## 1.1 Purpose

The purpose of Software Configuration Management (SCM), in general, is to establish and maintain the integrity of work products using:

* Configuration Identification
* Configuration Control
* Configuration Status Accounting
* Configuration Audit

A Configuration Item (CI) is an entity designated for configuration management, which may consist of multiple related work products that form a baseline. This logical grouping provides ease of identification and controlled access. The selection of work products for configuration management should be based on criteria established during planning. Section 3 of this SCM Plan contains detailed information about CIs.

**Configuration Identification**

The purpose of Configuration Identification is to define the functional and physical characteristics of a CI in sufficient detail so that it may be developed, tested, evaluated, produced, competitively procured, accepted, operated, maintained, and supported. Configuration Identification is established by baselines plus approved changes. For purposes of this SCM Plan, Configuration Identification includes the selection, creation, and specification of the following:

* Products that are delivered to the client
* SEM documents requiring Structured Walkthroughs (SWT)

**Configuration Control**
Configuration Control is the process of evaluating, approving or disapproving, and managing changes to controlled items. This includes tracking the configuration of each of the CIs, approving a new configuration if necessary, and updating the baseline.

**Configuration Status Accounting**
Configuration Status Accounting is the process of creating and organizing the information necessary for the performance of configuration management. An element of configuration management consisting of the recording and reporting of information needed to manage a configuration effectively. This information includes a listing of the approved configuration identification, the status of proposed changes to the configuration, and the implementation status of approved changes.

**Configuration Audit**
Configuration Audits are conducted to verify that a CI, or a collection of CIs that make up a baseline, conforms to a specified standard or requirement. This includes functional and physical configuration audits.

## 1.2 Objectives

This SCM Plan defines the configuration management policies and procedures required for this project. This plan has been developed early in the lifecycle to ensure the control of changes as soon as the project requirements are approved. This plan addresses activities that are platform independent, such as identifying the items that will be placed under configuration management. As the project progresses through the lifecycle stages, the plan is expanded to reflect platform specific activities.

Changes in this system affecting other SCM plans are identified and explained in Section 2 (Software Configuration Management Resources) and Section 3 (Software Configuration Management Tasks) of this plan.

## 1.3 References

Listed here are policies, procedures and standards used in preparing and setting up this SCM Plan.

* State of Michigan’s System Engineering Methodology (SEM)

# 2. Software Configuration Management (SCM) Resources

This section identifies the roles of individuals and groups that participate in the SCM process. It describes the relationships between individuals and groups.

## 2.1 SCM Roles and Responsibilities

### 2.1.1 Project Manager (PM)

**Responsibilities**

* Establish the overall project schedule for SCM activities with Configuration Management Manager (CMM)
* Validates that team members have been trained in and knowledgeable of SCM concepts and techniques and that they are applied to project activities
* Ensure compliance with the SCM standards and procedures set by the CMM, the Change Control Board (CCB), and any other affected groups as outlined in this plan
* Participate as a member of the Change Control Board

###  Business Owner (aka Product Owner)

**Responsibilities**

* Ensure compliance with the SCM standards and procedures set by the CMM, the Change Control Board (CCB), and any other affected groups as outlined in this plan
* Participate as a member of the Change Control Board

### 2.1.3 Configuration Management Manager (CMM)

**Responsibilities**

* Document the SCM Plan with assistance from the Project Manager
* Create and update the SCM Plan, as well as communicating the contents of the plan to the project team

**SCM Planning**

* Identify the Configuration Items (CIs) to be managed under the SCM processes
* Create, manage and maintain the SCM Plan, standards, and procedures
* Communicate any changes to the SCM Plan, standards, and procedures to all stakeholders
* Validate that all project team members involved in the SCM process receive training on their roles
* Update the SCM Plan, as appropriate
* Communicate updates to the SCM Plan to the appropriate project team members
* Form and lead a SCM Team
* Approve changes to the SCM Plan

**Implementing Changes**

* Participate as a member of the Change Control Board (CCB)
* Create SCM products (baselines, application environments), as authorized by the CCB
* Process and track software request for change (RFC’s)
* Function as the point of contact with Infrastructure Services to analyze proposed changes and to insure interoperability between hardware and software components

**Tracking, Reporting and Audits**

* Validate that configuration item change requests and problem reports for all CIs are initiated, recorded, reviewed, approved, and tracked according to the SCM Plan
* Ensure all Functional and Physical Configuration Audits are performed
* Respond to requests for status regarding SCM activities from managers and auditors

### 2.1.4 Configuration Control Board (CCB)

**Responsibilities**

* Monitor changes and updates to project requirements
* Authorized approvers for the establishment / changes to application baselines and the identification of CIs
* Ensure that all approved changes and updates to CIs are placed under configuration control
* Use the SCM Plan as its primary decision-making resource
* Authorized approvers for the submission of Requests for Change (RFC) and supports and provide input to Local Change Advisory Boards (LCABs) and the Enterprise Change Advisory Board (ECAB) functions related to the DTMB Service Management Center Request for Change (RFC) process
* Attend regularly scheduled meetings of the CCB
* Reviews and discusses new change requests with CCB members and affected stakeholders
* Prioritizes change requests
* Authorizes research on change requests
* Approves the commencement of work on change requests (make active)
* Reviews the status of active change requests
* Create and communicate minutes from the CCB to affected groups

**Change Control Board (CCB) members**

| Members | Roles |
| --- | --- |
| Business Owner (aka Product Owner) | Representative from customer agency and member of the Change Control Board for the application  |
| DTMB System Owner | DTMB System Owner for the application member of the Change Control Board for the application |
| DTMB Project Manager (PM) | Project Manager for the project and member of the Change Control Board for the application |
| DTMB Application Development Functional Manager(s) | Development Manager(s) (applications already in production) and member of the Change Control Board for enhancements to an existing application |
| Configuration Management Manager (CMM) | SCM Plan Owner and member of the Change Control Board for the application |
| <Insert other members of the Change Control (e.g. Test Manager) Board> |  |

### 2.1.4 Local Change Advisory Board (LCAB)

**Responsibilities**

* Reviews Requests for Change(RFC) submitted by Change Control Boards
* Authorizes the execution of the RFC
* Verify that any changes with statewide impact are marked for Enterprise Change Advisory Board (ECB) review and approval

| Members | Roles |
| --- | --- |
| DTMB Agency Services (AS) Client Service Director (CSD) | Stakeholder |
| DTMB System Owner | DTMB Owner of the application |
| DTMB Application Development Functional Manager(s) | Development Manager(s) |
| DTMB Client Support Specialist | Client Support |
| DTMB Infrastructure Specialist | Agency Services Support |
| Configuration Management Manager (CMM) | SCM Plan Owner |

### 2.1.5 Enterprise Change Advisory Board (ECAB)

**Responsibilities**

* Reviews Requests for Change (RFC) referred by Local Change Advisory Boards
* Ensure changes with potential statewide impact do not adversely affect other systems
* Authorizes execution of the RFC’s referred to the ECAB

**Roles**

The ECAB is primarily staffed with DTMB Infrastructure representatives. Attendance at ECAB meetings by the local staff will vary depending on the scope of the change. Typically only one or two of the following will attend.

| Members | Roles |
| --- | --- |
| DTMB Agency Service (AS) Client Service Director (CSD) | Stakeholder |
| DTMB System Owner | DTMB Owner of the application |
| DTMB Application Development Functional Manager(s) | Development Manager(s) |
| DTMB Client Support Specialist | Client Support |
| DTMB Infrastructure Specialist | Agency Services Support |
| Configuration Management Manager (CMM) | Service Provider |
| Subject Matter Expert(s) (SME) | Subject Matter Expert(s) |

## 2.2 Resource Assignments

# 3. Software Configuration Management Tasks

This section consists of the following:

* Identification of Configuration Items
* Configuration Items
* Baseline Identification
* Repository Identification
* Configuration Item Identifier

## 3.1 Identification of Configuration Items

The terms Configuration Identification and Configuration Item are defined in Section 1.1 of this document.

In this SCM Plan, work products are considered for configuration management based on the following criteria. A work product is any tangible item that results from a project function, activity or task.

* May be used by one or more work groups
* Are expected to change over time either because of errors or change of requirements
* Are dependent on each other in that a change in one mandates a change in another/others
* Are critical to the project

Items in the following categories are selected to be placed under configuration management:

* Project Management documentation, including Project Plan and Project Charter
* SEM documentation, including all deliverables, Structured Walkthroughs (SWT), Stage Exit
* Models
* Interfaces
* Process descriptions
* Product/Application data such as lookup tables, system files
* Source code and executable code
* Test scripts
* Test data
* Metrics, status reports, quality review reports, etc.
* Support tools, including compilers, editors, testing tools
* Touch Point documentation including EA solution documents, Infrastructure Services Request (DTMB-0184), and Security Plan and Assessment (DTMB-0170), MiLogin (DTMB-3525)

## 3.2 Configuration Items (CIs)

The following table contains CIs that are included in this SCM Plan.

**Fully Controlled:**  Work products that are “fully controlled” are baselined (usually after signing) and can easily be recovered from backup.   Once baselined, any changes to the work products require an approved change request and a new baseline will be captured.

**Managed and Controlled:**  Work products that are “managed and controlled” are under version control and can easily be recovered from backup.  Changes to the work products will be tracked in a revision log and previous versions of the work product are accessible for reference.  An approved change request is not required to make changes and no baseline is captured.  This is sometimes known as “version control”.

| **Configuration Items** | **Description/Suite Form** | **Responsible for placing item under control** | **When item is put under control** | **Type of Control Needed** |
| --- | --- | --- | --- | --- |
| Project Charter | PMM-0002 | Project Manager | All - Initiation & Planning Stage Exit (signed) | Full Control after signing |
| Project Plan | PMM-0003 | Project Manager | Waterfall - Initiation & Planning Stage Exit (signed)Agile – Sprint 0 complete | Managed and Controlled |
| Security Plan | DTMB-0170 | OES Liaison  | Waterfall - Initiation & Planning Stage Exit (signed)Agile – Last Product Increment Planning for the project | Full Control |
| Software Configuration Management Plan | SEM-0302 | CMM Manager | Waterfall - Initiation & Planning Stage Exit | Managed and Controlled |
| Maintenance Plan | SEM-0301 | DTMB Analyst/CM Manager | Initiation & Planning Stage Exit | Managed and Controlled |
| Requirements Specification | SEM-0402 | Business Owner (aka Product Owner) | Waterfall -Requirements Stage ExitAgile – Backlog snap shot prior to each implementation to production | Waterfall - Full ControlAgile – Managed and Controlled  |
| Requirements Traceability Matrix | SEM-0401 | Project Manager/DTMB Analyst | Waterfall -Requirements Stage ExitAgile – Backlog snap shot prior to each implementation to production if the tool maintains traceability otherwise completed SEM-0401 for the product increment | Waterfall - Full ControlAgile – Managed and Controlled |
| Use Cases | SEM-0502 | Business Owners, Test Manager | Waterfall - Function Design Stage Exit | Waterfall – Full Control |
| User Stories  | Tool based | Product Owners | Agile Deploy to Production | Agile – Full Control once deployed to production |
| EA Solutions Assessment | SEM Touch Point | Project Manager/DTMB Analyst | Waterfall – Requirements Stage Exit (signed)Agile – Last Product Increment Planning for the project | Waterfall - Managed and Controlled until last version before deploy to production then full controlAgile – Managed and Controlled until last Increment Planning complete then Full Control |
| Infrastructure Services Request (ISR) | SEM Touch Point, DTMB-0184 | Project Manager/DTMB Analyst | Waterfall – Requirements Stage Exit (signed)Agile – Last Product Increment Planning for the project | Waterfall - Managed and Controlled until last version deployed to production then full controlAgile – Managed and Controlled until last Product Increment Planning is complete then Full Control |
| Hosting Solution  | SEM Touch Point | Project Manager/DTMB Analyst | Waterfall – Requirements Stage Exit (signed)Agile – Last Product Increment Planning for the project | Full Control |
| Functional Design | SEM-0501 | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | Waterfall -Functional Design Stage ExitAgile – prior to each implementation to production | Waterfall - Managed and Controlled until last version deployed to production then full controlAgile – Managed and Controlled until last Product Increment Planning is complete then Full Control |
| Conversion Plan | SEM-0601 | Project Manager/DTMB Analyst | Waterfall - System Design Stage ExitAgile – prior to each implementation to production | Managed and Controlled |
| Test Plan | SEM-0602 | Business Owner aka Product Owner)/Test Manager | Waterfall - Initiation & Planning Stage ExitAgile – Sprint 0 complete | Full Control |
| Test Type and Report (multiple) |  | Business Owner (aka Product Owner)/Test Manager | Waterfall – Test Phase Stage Exit Agile – each End 2 End Test Phase completion | Managed and Controlled |
| System Design | SEM-0604 | Project Manager/DTMB Analyst | Waterfall - System Design Stage ExitAgile – prior to each implementation to production | Waterfall - Managed and Controlled until last version then full controlAgile – Managed and Controlled until last Product Increment Planning is complete then Full Control |
| System Design Checklist | SEM-0605 | Project Manager/DTMB Analyst | Waterfall - System Design Stage ExitAgile – prior to each implementation to production | Managed and Controlled |
| Test Case (multiple) | SEM-0606 | Project Manager/DTMB Analyst | Waterfall - System Design Stage ExitAgile – prior to each implementation to production maybe tool based | Managed and Controlled |
| Transition Plan  | SEM-0701 | Project Manager/DTMB Analyst | Waterfall - Construction Stage ExitAgile – Prior to the final UAT or the project | Managed and Controlled |
| Installation Plan | SEM-0702 | Project Manager/DTMB Analyst | Waterfall - Construction Stage ExitAgile – Prior to each implementation to production | Managed and Controlled |
| Training Plan | SEM-0703 | Business Owner (aka Product Owner) | Waterfall - Construction Stage ExitAgile – Prior to the FIRST implementation to production | Managed and Controlled |
| Training Plan checklist | SEM-0704 | Business Owner (aka Product Owner) | Waterfall - Construction Stage ExitAgile – Prior to the FIRST implementation to production | Managed and Controlled |
| Release Notes | Word/Excel | Project Manager/DTMB Analyst | Waterfall – Implementation Stage ExitAgile – Prior to the Every implementation to production | Managed and Controlled |
| Post Implementation Evaluation Report | PMM-0016 | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | Waterfall – Implementation Stage ExitAgile – Post - Every implementation to production | Managed and Controlled |
| Request for Change (RFC) | SEM Touchpoint, SMC website | Project Manager/DTMB Analyst  | Waterfall - Construction Stage ExitAgile – Prior to Every implementation to production | Tool maintained - Managed and Controlled |
| Structured Walkthrough Meeting Record | SEM-0187 | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | All Stages  | Managed and Controlled  |
| Defect Tracking Log (or equivalent) | SEM-0186 (or equivalent) | Project Manager/DTMB Analyst | All Stages | Managed and Controlled |
| Stage Exit Approvals | SEM-0189 | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | All Stages | Full Control – once signed |
| Sprint or Release Review and Approval | SEM-0185 | Product Owner | Agile – Optional at Sprint level, Required at Release to production | Full Control once signed |
| Initiation, Requirements and Design Plan | SEM-0001 EXP | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | Waterfall -Construction & Testing Stage ExitAgile Prior to Implementation to production | Full Control once signed |
| Sprint or Release Review and Approval | SEM-0185 | Product Owner | Agile – Optional at Sprint level, Required at Release to production | Full Control once signed |
| Initiation, Requirements and Design Plan | SEM-0001 EXP | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | Waterfall -Construction & Testing Stage ExitAgile Prior to Implementation to production | Full Control once signed |
| Construction and Testing Plan | SEM-0002 EXP | Business Owner (aka Product Owner)/Project Manager/DTMB Analyst | Waterfall -Construction & Testing Stage ExitAgile Prior to Implementation to production | Full Control once signed |
| C/JAVA Code (Example) | Application Source Code | Developer | Initial unit test | Waterfall - Full Control Agile Full Control once released to production |
| Database Stored Procedures  | Database Source Code | DBA | Initial unit test | Waterfall - Full Control Agile Full Control once released to production  |
| Cobol Compiler (Example)File Editor (Example) | Support Tools | Infrastructure | After received from vendor | Full Control (Operations owns configuration management of operating system components) |
| Graphics/Images  | User Interface Elements | Graphic Designer | Initial unit test | Managed and Controlled |

## 3.3 Baseline Identification

In this SCM Plan, a software baseline is created by the identification and labeling of CIs at a specific point in time. A baseline represents the current approved configuration.

## 3.4 Repository Identification

## 3.5 Configuration Item Identifier

Configuration Item Identifiers are used to label all of the CIs that make up a particular grouping such as an application release, a project development phase or documentation changes.

This identification scheme preserves all of the files that are used to create each release and exactly which versions of those files were used. This scheme works for the application installations and then for subsequent upgrades.

Identifiers are used to label the documentation deliverables in a project. For instance, at the end of the system design stage, all of the approved deliverables will be labeled and preserved for future reference. After the completion of the project, many of the deliverables will need to be updated to reflect changes to the application. Those deliverables are assigned identification labels so that their current state can be identified and preserved for future reference.

The following tables show how identifiers are assigned to files and baselines.

Examples 1 and 2 show sample baseline release configuration identification labeling schemes using these abbreviations for baseline (BL), major (mm), minor (nn), and revision (rr).

| Example 1 |
| --- |
| Environment | Identification Scheme |
| Development | N/A |
| Unit Test  | SFSweb.TST.BL.mm.nn.rr |
| User Acceptance Testing (UAT) | SFSweb.UAT.BL.mm.nn.rr |
| Production | SFSweb.PRD.BL.mm.nn.rr |

| Example 2 |
| --- |
| Environment | Identification Scheme |
| Development | DEV.BL.00001 through DEV.BL.99999 |
| Test region  | TST.BL.00001 through TST.BL.99999 |
| UAT | UAT.BL.00001 through UAT.BL.99999 |
| Production | PRD.BL.00001 through PRD.BL.99999 |

Table 1 shows three different schemes for identifying documents. The software change request number, document identifies (see Table 2 below), and a status indicator (Initial (I), Final (F)) are used in combination to form an item scheme.

| Table 1 |
| --- |
| Document Name | Document description |
| S123.PP.I.doc | Change Request S123 Project Plan Initial |
| PP.F.S123.doc | Project Plan Final Change Request S123 |
| F.PP.S123.doc | Final Project Plan Change Request S123 |

| Table 2 |
| --- |
| Document Identifiers | Document CI description |
| PP | Project Plan |
| PMC | Project Management Charter |
| SEC | Security Plan |
| SCM  | Software Configuration Management Plan |
| MAIN | Maintenance Plan |
| REQ | Requirements Specification |
| REQT | Requirements Traceability Matrix |
| INFRA | EA Solutions Assessment |
| INFRAR | Infrastructure Request |
| DESN | Functional Design |
| HOST | Hosting Solution  |
| CONV | Conversion Plan |
| TESTP | Test Plan |
| TTAR | Test Type Approach and Report |
| SYSD | System Design Document |
| SYSCH | System Design Checklist |
| TRAN | Transition Planning  |
| INSTP | Installation Plan |
| TRAIN | Training Plan |
| TRAINCH | Training Plan Checklist |
| IRDEXP | Initiation, Requirements and Design for Express |
| CTEXP | Construction and Testing for Express |
| RELEASE | Release Notes |
| RFC | Request for Change Document |
| PIER | Post Implementation Evaluation Report |

# 4. Software Configuration Control

The term Configuration Control is defined in Section 1.1 of this document. Software Configuration Control includes the following objectives:

* Procedures for changing baselines
* Change requests approvals
* Responsibilities for change control
* Change control process
* Request for Change process
* Level of control
* Management of release documentation
* Configuration control tools and techniques

## 4.1 Procedures for Changing Baselines

Activities performed in the SCM Plan for processing changes include:

* Defining the information needed for approving the requested change
* Identifying the review process and how communication of information is completed

## 4.2 Change Requests and Approvals

This SCM Plan contains documented procedures for originating change requests, enforcing the flow of the change process, capturing CCB decisions, and reporting change process information. Included in this SCM Plan is a prioritization process for software change requests. Only changes requests approved by the project’s Change Control Board (must be listed authorized approves in the SEM-0301) can be acted upon.

The software change request process in this SCM Plan requires the use of supporting tools and procedures. Basic tools used by the project or application are for this SCM Plan are:

<Insert the Tool(s) used here>

## 4.3 Change Control Process

The purpose of the CCB/LCABis to control changes that impact schedule, function, and the configuration of the system as a whole.

The change control processes described in this SCM Plan include the following activities:

* Providing direction of the entire configuration management effort
* Resolving all problems and situations that arise during the effort
* Using the SCM Plan as its primary decision-making resource
* Taking into account organizational management considerations for decision making
* Initiating and controlling all activities from the beginning to the approval of the baselines for SCM establishment
* Making decisions on which products should be baselined or managed, the methods to be used, and the order in which they should be done

## 4.4 Request for Change (RFC) Process

This SCM Plan supports the DTMB RFC process. The Configuration Management Manager (CMM) is responsible for ensuring that all LCAB and ECAB processes are followed. Note: The structured walkthrough (SEM-0187) at the test stage exit, the Sprint Release and Review (SEM-0185) at release to production and the Installation Plan (SEM\_0702) must contain the corresponding RFC number.

## 4.5 Level of Control

Control of CIs varies depending on environment, action, and responsible party. The following tables define appropriate levels of control:

**Development Environment**

| Action | Control |
| --- | --- |
| Check in Source Code | Developers, Librarians |
| Promote Source Code | Installation by Configuration Manager or Developer (maybe automated as part of the build process) |
| Check in Project Documentation | Project Manager, Developers, Librarians |
| Check in Application Documentation | Project Manager, Developers, Librarians |

**System Test Environment** (projects should customize the name of the environment to correspond to the applications environment)

| Action | Control |
| --- | --- |
| Check in Source Code | Check in to system test not allowed |
| Authorize Code Promotion to system test | CCB |
| Promote Source Code to system test | Manual move: Configuration Manager (can’t be the developer)Automated move – submission of the move script by the Configuration Manager (tool used to capture the id of the requestor. No additional signatures needed) |
| Define Release | CCB |
| Authorize Baseline Label | CCB |
| Label Baseline | Librarian |
| Authorize Environment Build | CCB |
| Build Environment | Technical Operations |

**User Acceptance Test (UAT) Environment**

| Action | Control |
| --- | --- |
| Check in Source Code | Check in to UAT not allowed |
| Authorize Code Promotion to UAT | CCB |
| Promote Source Code to UAT | Manual move: Configuration Manager (can’t be the developer)Automated move – submission of the move script by the Configuration Manager (tool used to capture the id of the requestor. No additional signatures needed) |
| Define Release | CCB |
| Authorize Baseline Label | CCB |
| Label Baseline | Librarian |
| Authorize Environment Build | CCB |
| Build Environment | Technical Operations |

**Production Environment**

| Action | Control |
| --- | --- |
| Check in Source Code | Check in to production not allowed |
| Define Release | CCB |
| Authorize Baseline Label | CCB |
| Label Baseline | Librarian |
| Authorize Environment Build | CCB |
| Build Environment | Technical Operations |
| Promote Source Code to Production | Manual move: Configuration Manager (can’t be the developer)Automated move – submission of the move script by the Configuration Manager (tool used to capture the id of the requestor. No additional signatures needed)Moves occur during a scheduled RFC window. |
| Verification of Production Implementation | Business Owner (aka Product Owner) |

## 4.6 Management of Release Documentation

The following documents are required for the release to production:

* Installation Plan (including a backout plan)
* Release notes
* Updated user documentation
* Training materials

## 4.7 Configuration Control Tools and Techniques

These SCM processes use a basic tool set to manage access to the repositories, to process change requests and to report status. The basic tool set includes:

* Basic database management systems
* Report generators
* Means for maintaining separate dynamic and controlled repositories
* File system for managing the check in and check out of units, for controlling compilations, and capturing the resulting products

Specific tools include:

* Infrastructure Configuration Management Build Application
* Remedy
* Issue Tracker
* Oracle Repository
* Serena Version Manager

The tools listed in this SCM Plan provide support to the Configuration Control and Release processes.

# 5. Configuration Status Accounting

The term Configuration Status Accounting is defined in Section 1.1 of this document. Configuration Status Accounting has the following objectives in this SCM Plan:

* Maintain records of the configuration status of all entities that have been placed under configuration control at the project level or higher
* Maintain records for the life of the project
* Produce reports that include the current version, revision, or release status of each CI, a record of changes to the CI since it was placed under configuration control, and the status of problem reports and change requests that affect the CI

# 6. Configuration Audits and Reviews

The term Configuration Audit is defined in Section 1.1 of this document.

This SCM Plan ensures successful completion of functional and physical audits and is used as a prerequisite for the establishment of the product baseline in the initial SCM process. It is used throughout the project for the review of SCM processes and the audit of the configuration repository.

The functional audit determines whether the CI satisfies the functions defined in the specifications. The physical audit determines that all items identified as part of system configuration are present in the product baseline. Sections 6.1 and 6.2 describe how these audits are used.

## 6.1 Functional Configuration Audits

The SUITE Key Terms and Acronyms document defines a **Functional Configuration Audit (FCA)** as, “An inspection to determine whether the (software) configuration item satisfies the functions defined in the specifications. Consists of someone acknowledging having inspected or listed each item to determine it satisfies the functions defined in specifications.”

The Configuration Management Manager (CMM) is responsible for ensuring that a FCA is performed. Results of the completed audit are used by the Configuration Control Board (CCB) to authorize a new baseline.

The Requirements Traceability Matrix (SEM-0401) includes data required to verify and validate changes against CIs.

The Traceability Matrix contains the following columns:

* Requirement Number
* Requirement Type
* Design Specification Reference No(s)
* Program Module
* Test Reference Number(s)
* Status
* Status Date
* Requirement Modification(s)/Comments

## 6.2 Physical Configuration Audits

The SUITE Key Terms and Acronyms document defines a **Physical Configuration Audit (PCA)** as “the formal examination of the ‘as-built’ configuration of a configuration item against its technical documentation to establish or verify the configuration item's product baseline.”

The CMM is responsible for ensuring that a PCA is performed. Results of the completed audit are used by the CCB to authorize a new baseline.

# 7. Archive and Retrieval

This project follows DTMB archive policies as well as the agency’s business and continuity planning requirements. The Configuration Control section of this plan contains information regarding the methods for retention and retrieval.

# 8. Training

The Project Manager is responsible for determining the SCM training needs of the team. Potential training topics include:

* Roles, responsibilities, and authority of configuration management staff
* Configuration management standards, procedures, and methods
* Configuration repository system

# 9. Related Forms

* Requirements Traceability Matrix (SEM-0401)
* Installation Plan (SEM-0702)

# Approval Information

The signatures relay an understanding of the purpose and content of the document by those endorsing it.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Approve |  | Approve with Modifications |  | Reject |

Comments:

**Approval Signatures**

| Role | Name/Title | Signature | Date |
| --- | --- | --- | --- |
| DTMB Sponsor |  |  |  |
| Project Manager, CCB Member |  |  |  |
| Configuration Management Manager |  |  |  |
| Business Owner (aka Product Owner) CCB Member |  |  |  |

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State of Michigan

Software Configuration Management Plan

Instructions

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**Template Revision History**

| Revision Date | Author | Section(s) | Summary |
| --- | --- | --- | --- |
| 01/2017 | SEPG | All | Defined role and responsibilities of the Change Control Board (CCB)Assigned and clarified types of control for each type of asset.Reconciled roles level of control for promoting application artifacts to the test environments. |
|  |  |  |  |

# General Information

**Author(s)**

Record the name of all authors contributing to this document.

**DTMB Authorized by**

Enter the name of the DTMB Client Service Director (CSD) or Information Officer (IO) authorizing DTMB resources to work on the project.

# Privacy Information

# Change Control

This information is to be used to control and track changes made to this system/project document throughout its lifecycle.

Note: A completed plan from the fictitious ACME Interface Project is available to assist in completing this plan. A Software Configuration Management Plan example can be found within the SUITE Best Practice Library, under the SUITE Best Practice Section, on the DTMB > SUITE SharePoint site.

Many of the sections of this form have pre-approved, generic verbiage that can be used without modification. These sections are identified by the following statement: “The generic language in this section applies to most Software Configuration Management (SCM) plans. If needed, modify for your specific plan.”

# 1. Introduction

## 1.1 Purpose

Describe the purpose of the SCM Plan. The generic language in this section applies to most SCM Plans. If needed, modify for your specific plan.

## 1.2 Objectives

Describe the objectives of the SCM Plan. The generic language in this section applies to most SCM plans. If needed, modify for your specific plan.

## 1.3 References

Identify any sources of information used to develop this plan, including other project documents.

# 2. Software Configuration Management Resources

Specify the individuals and groups involved in the SCM process and describe their responsibilities. The generic language in this section applies to most SCM plans. If needed, modify for your specific plan.

## 2.1 Roles and Responsibilities

List organization groups and individuals and identify their tasks. Identify specific roles in this plan using all tasks identified. See sub-sections 2.1.1 – 2.1.5 for examples. Only responsibilities related to SCM should be listed in the sub-sections below. The generic language in this section applies to most SCM plans. If needed, modify for your specific plan.

### 2.1.1 Project Manager (PM)

The generic language in this section applies to most SCM plans. If needed, modify for your specific plan.

### 2.1.2 Configuration Management Manager (CMM)

The generic language in this section applies to most SCM plans. If needed, modify for your specific plan.

### 2.1.3 Configuration Control Board (CCB)

Identify the authorities needed for approving configuration change requests.

Describe the role of authorizing changes to baselines, CIs and components. The purpose of the CCB is to control major issues such as schedule, function, and configuration of the system as a whole.

This SCM Plan establishes a CCB to review and approve all proposed changes. Some organizations may also establish a Technical Review Board (TRB) to review and approve changes of a technical nature only.

Address the interoperability between multiple CCBs and establish the overall hierarchy where necessary.

The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

### 2.1.4 Local Change Board (LCB)

The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

### 2.1.5 Enterprise Change Board (ECB)

The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 2.2 Resource Assignments

Describe the resources required for performing the SCM tasks. Resources may include staff, hardware, software, office space, etc. The table in the Software Configuration Management Plan example, within the SUITE Best Practice Library, under the SUITE Best Practice Section, on the DTMB > SUITE SharePoint site, can be used in this section.

# 3. Software Configuration Management Tasks

This section applies to all SCM plans and must not be removed. Include additional sections, if needed.

## 3.1 Identification of Configuration Items

Define what types of items will be controlled in the project, such as software and documentation. The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 3.2 Configuration Items (CIs)

List each CI when it is put under control and the person or group responsible for placing each CI under control. Modify the table in this section for your specific project, as needed. Include any new SUITE documents and/or remove any obsolete documents since the release of this form.

## 3.3 Baseline Identification

Identify various baselines for the project. The generic language in this section serves as an introductory paragraph. More detail is needed to describe your specific environments.

## 3.4 Repository Identification

A repository is used to store CIs. A repository may be physical or electronic. Describe any tasks associated with using configuration repositories.

This plan will describe specific information about repositories such as:

* Number of repositories and their locations
* Types of repositories under control
* Access control to the repositories
* Methods used to submit, store, delete, review, and back out CIs

## 3.5 Configuration Item Identifier

Define the scheme used to identify the Configuration Items (CIs). The details and complexity of configuration identification scheme(s) vary widely across organizations. Identification schemes may also be applied to document and file naming conventions.

CI groupings that require formal identification include:

* Software Releases
* Baselines

The text and tables in this section are examples of labeling schemes and may be modified to fit your organization.

# 4. Software Configuration Control

Describe how the software configuration control process is managed. Identify the procedures used to process changes to known baselines. An appropriate level of authority for controlling changes must be identified or delegated for each baseline. Procedures for processing the requests for changes and approvals must be defined.

The list of objectives in this section must be included in all SCM plans.

## 4.1 Procedures for Changing Baselines

Develop and describe a process to track, evaluate, and implement change requests into a new version and new release of the software in each baseline. Several processes may need to be developed based on the levels of change management and approval levels defined in the SCM Plan. A diagram depicting flow can be used to show the levels of how each baseline is defined within the process. The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 4.2 Change Requests and Approvals

Describe the process for prioritizing changes as they are received. Software change requests are used to report problems, identify new or changed requirements, and suggestions for improvement. Describe the process for prioritizing changes as they are received. The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 4.3 Change Control Process

Describe the mechanism for systematic evaluation, coordination, and approval or disapproval of proposed changes to the items under SCM. Include details for initiation, recording, review, approval, tracking and closure. This mechanism can be used with a CCB or a LCB. A diagram depicting the approval flow may be necessary to show the process easily.

The generic language in this section applies to all SCM plans. Details for the activities listed must be included in your SCM Plan.

## 4.4 Request for Change (RFC) Process

Describe the process used with the CCB/LCB and/or the Technical Review Board (TRB). This process should include any reference to the interface with the ECB. Identify the roles and the authority included in the process. Insert your organization’s LCB documentation, as appropriate.

## 4.5 Level of Control

Modify the generic tables in this section, as needed, for your organization.

## 4.6 Management of Release Documentation

The SCM Plan identifies documents that are needed for releasing the software to production, such as, Installation Plan (SEM-0702), release notes, and back out plan.

Modify the text in this section, as needed, for your organization.

## 4.7 Configuration Control Tools and Techniques

Describe any tools or techniques required for performing the SCM tasks or that can be used to automate processes. For example, there may be tools to manage access to the repository, to request changes, for status reporting, etc.

The tools, techniques and methods used to implement SCM are usually discussed in terms of a set of repositories and methods and techniques used to capture, store, and promote or release the items of each type of repository in a controlled manner.

Modify the text in this section, as needed, for your organization.

# 5. Configuration Status Accounting

Describe how information will be captured to anticipate common queries and provide that information in an easily accessible manner. Examples of reports you may consider generating are:

* Configuration Items Detailed Status Report
* Configuration Items Change History
* Released Items Report
* Product Baseline Status Report
* Results of Configuration Audits

The generic language in this section applies to most SCM plans but must be customized for your specific SCM Plan.

# 6. Configuration Audits and Reviews

This section describes any audits or reviews of the SCM process or repository that will be conducted during the project (e.g., audit of product baseline, audit of configuration repository, review of SCM Plan). The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 6.1 Functional Configuration Audits

Describe how and when your organization conducts a Functional Configuration Audit (FCA), including team and individual responsibilities. The FCA results should be documented and retained for future audits. The Requirements Traceability Matrix (SEM-0401) is valuable input to this process.

The generic language in this section applies to most SCM plans. If needed, modify for your specific SCM Plan.

## 6.2 Physical Configuration Audits

Describe how and when your organization conducts a Physical Configuration Audit (PCA), including team and individual responsibilities. The description of your organization’s baseline labeling, promotion groups and use of automated tools are valuable inputs to this process. The PCA results should be documented and retained for future audits. The generic language in this section applies to most SCM plans but must be expanded on for your specific SCM Plan.

# 7. Archive and Retrieval

Describe the archive and retrieval processes. Identify items to be archived and determine retention. The generic language in this section applies to most SCM plans but must be expanded on for your specific SCM Plan.

# 8. Training

Describe any training specific to Software Configuration Management. The generic language in this section applies to most SCM plans but must be expanded on for your specific SCM Plan.

# 9. Related Forms

List any forms that are used in the SCM process. Modify the list in this section, as needed, including the addition of agency specific forms.

# Approval Information