

CHAPTER 3. SOFTWARE CONFIGURATION MANAGEMENT POLICY

The purpose of Software Configuration Management (SCM) Policies at HUD is to establish and maintain the integrity of software work products throughout the project's software life cycle.

3-1 Components

SCM involves identifying the configuration of the software (i.e., selected software work products and their descriptions) at given points in time, systematically controlling changes to the configuration through the use of version control and check-in/check out processes, and maintaining the integrity and trace ability of the configuration throughout the software life cycle. The work products placed under SCM include the software products that are delivered to the customer (e.g., the Software Development Methodology (SDM) documentation and the software code) and the items that are identified with or required to create these software products (e.g., the compiler).

3-2 HUD Software Configuration Management Policies

Each of HUD's software projects will abide by the same policies. The following are HUD's configuration policies.

Each Configuration Project Shall:

- A. Plan software Configuration Management activities for all of HUD's software products (i.e. SDM documentation, code, libraries, compiler, etc.)
- B. Prepare a SCM plan for each software project according to the documented procedure for managing the configuration to the software, review it annually, and update it when changes occur. The plan shall comply with HUD SDM Software Configuration Plan template.
- C. Use a documented and approved SCM plan as the basis for performing the SCM activities.
- D. Identify, control, and make available selected software work products.
- E. Control changes to identified software work products.
- F. Inform affected groups and individuals of the status and content of software baselines.
- G. Establish a board that has the authority for managing the project's software baselines (i.e., Software Configuration Control Board - SCCB). Guidelines for the SCCB are provided in the SCM Procedures document at HUD website <http://hudweb.hud.gov/po/i/it/security/cmb/procedures.pdf>
- H. Appoint a group to be responsible for coordinating and implementing SCM for the project (i.e., the SCM group)
- I. Provide adequate resources and funding for performing the SCM activities.
- J. Train members of the software development group and other software-related groups to perform their SCM activities.

- K. Train members of the SCM group in the objectives, procedures, and methods for performing their SCM activities.
- L. Establish a Software Configuration Management library system as a repository for the software baselines.
- M. Identify the software work products to be placed under configuration management.
- N. Place all HUD's software development and production work products under an approved SCM tool enforcing version control and check-in/check out controls.
- O. Initiate, record, review, approve, and track change requests and problem reports for all configuration items/units according to a documented procedure.
- P. Control changes to baselines according to a documented procedure.
- Q. Create products from the software baseline library and control their release according to a documented procedure.
- R. Record the status of configuration items/units according to a documented procedure.
- S. Develop standard reports documenting the SCM activities and the contents of the software baseline and make available to affected groups and individuals.
- T. Conduct software baseline audits according to a documented procedure. (Refer to the SEI SW-CMM CM Activity 10)
- U. Make and use measurements to determine the status of the SCM activities.
- V. Review the SCM activities with senior management on a periodic basis.
- W. Review the SCM activities with the project manager on both a periodic and event-driven basis.
- X. Have the SCM group periodically audit software baselines to verify that they conform to the documentation that defines them. (Refer to the SEI SW-CMM CM Verification 3)
- Y. Conduct reviews or audits by the software quality assurance group on the activities and work products for SCM and reports the results.
- Z. Comply with HUD SDM standards and procedures for the following items:
 1. Names of the Configuration Baseline documents by SDM phase
 2. Use of Uniform Labeling Conventions for all configuration Artifacts
 3. Use of a hierarchy promotion model for all milestones in a development cycle
 4. Use of a uniform project database structure for storing checked-in code
 5. Use of a Structured Release process for various types of releases: Unscheduled as well as scheduled releases of different effort, such as: Complex, Moderate, Simple, Maintenance, or Emergency.

3-3 Waiver Requests

A. Deviations and Waivers

Deviations and the handling of deviations such as Commercial-Off-The-Shelf (COTS) systems require submitting waivers to exclude them from compliance with the SCM program.

To be considered for a waiver, a system must fall within these categories:

1. SCM Alternative Tools, where HUD standard CM tools either cannot be used, or do not provide the best SCM solution thus requiring CM alternative Tools
2. Commercial-Off-The-Shelf (COTS) software forms the basis of the system
3. Government Off-The-Shelf (GOTS) software forms the basis of the system
4. The system has no funds available for support, yet remains in production. SCM waivers for unfenced system will be terminated if funding becomes available for system support. If inadequate funding becomes available to provide both system support in response to an urgent requirement and SCM, a new or revised waiver must be submitted and approved.
5. The system has been deactivated and removed from production. If the system is reactivated it must be brought into compliance with applicable HUD SCM policies at that time.

B. Commercial Off the Shelf (COTS) Acquired Software/ Government GOTS Acquired Software

1. Requirements for Software Vendors

Current documentation, matching the revision and release number of the software, will be provided with new and re-engineered software. Documentation is to include installation procedures and user documentation. The number of copies of documentation delivered will conform to contractual specifications.

2. Change Approval

The addition of a new system/support software package or an upgrade of an existing package will be approved via the SCM Software Configuration Control Board (SCCB) change control process.

3. Release Requests

The SCCB Systems Software or Client Server staff as applicable shall prepare formal release requests before the software is placed into production. A release request is prepared using the Request for Technology Change (RTC) system. The RTC system will reference the plans and procedures to be utilized and the associated SCCB change package number.

4. Testing

All new or modified system/support software packages will undergo system level testing before they are placed in Production. When

available, standard test procedures developed for the package are to be used. Testing will be performed in a test environment that is logically isolated from the production environment. The systems software or client server staff will perform initial testing. The HUD system Test team will perform final testing when applicable.

5. Other SCM Tools

Systems that utilize COOL:GEN, LINC, Mapper, CA-Panvalet, Peoplesoft or other SCM tools will be evaluated on a case-by-case basis.