**T.Y. B. Tech.**

**CS 303: Software Engineering Laboratory**

Assignment No: 8

**Software Configuration Management**

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| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
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**Approved By:**

**Academic Year: 2017-18 Semester: I**

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# INTRODUCTION

*As identified in the Software Configuration Management (SCM) Plan Standard, the implementation of a formal and structured SCM environment ensures that all Software Development product artifacts are baselined and maintained in a stable environment.*

*This SCM Procedures identifies the procedures that conform to the requirements identified in the SCM Plan Standard. This document is intended to provide a uniform approach to SCM for the software product being developed or modified by projects regardless of location or staffing model. It describes the procedures for managing and controlling the development, delivery, and maintenance of the specific Software Product <Product name>.*

*The SCM Procedures applies to <Product Name> under development or maintenance. It also applies to all documentation products and other project or program initiative documentation that management communicates now or in the future as required to be controlled by SCM procedures. Each project associated with the product will develop work instructions for the implementation of these procedures.*

*The primary audience for this document consists of staff assigned to projects where <Product Name> is within scope are required to implement and apply SCM procedures.*

# ROLES AND RESPONSIBILITIES

*<This section identifies the specific roles and responsibilities as they relate to SCM, each Project will identify the role that will be responsible for the Product. The SCM Manager will create work instruction documents to assist the project team members with the responsibilities within their assigned role. Each Project will identify who is assigned to each role by having one roles and responsibilities table below per project by coping table for each project and pasting directly below the previous table provided.>*

*The table below is a specific list of the personnel who may be members of Project teams and SCM teams along with their assigned roles and responsibilities as they relate to SCM. The Roles defined herein can sometimes be overlapped with other roles and responsibilities depending on the environment. In addition, one person allocated for a specific role as listed below may often have the responsibility of other roles.*

| *<Named Project(s)>* ***Role*** | *<Named Project(s)>* ***Responsibility*** |
| --- | --- |
| *Program Manager/*  *Project Management*  *< Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions for each Product being worked as part of the Program/Project.* * *Ensures proper execution of the SCM Plan Standard.* * *Oversees the SCM process.* * *Assesses and evaluates all other change requests.* * *Establish appropriate Change Control Board (CCB).* * *Submit CCB baseline information.* * *Identify dependent projects.* * *Establish/revise required artifacts.* * *Creation of SCM Procedures and work instructions for each VA product they are assigned.* |
| *Software Configuration Manager*  *<Assignee>* | * *Educates project team members in SCM “best practices.”* * *Develops and maintains SCM Procedures and work instructions for each VA product they are assigned.* * *Establishes, promotes, and releases baselines.* * *Performs or validates interim and final builds.* * *Prepares release package, release archives and Version Description Documents (VDD).* * *Accountable for instituting the established processes and reporting progress statistics based on change requests.* * *Identifies product baselines as necessary of all products within their assigned Projects.* * *Responsible for SCM audits and necessary status accounting related to the product.* * *Conducts audits at scheduled milestones.* |
| *Development Manager/Leads*  *<Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Submits build/release requests.* * *Coordinates development activities and assigns tasks.* * *Ensures all SCM Procedures and work instructions are implemented and followed for all software, documentation, and/or any other components for which they are responsible.* * *Ensures all developers’ work within the specified SCM process and related guidelines as specified in the SCM Procedures and work instructions.* * *Attends the CCB meetings and provide technical details, as required.* |
| *Developers/System Administration/Functional/ Technical Analysts/DBAs/System Administration*  *<Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Maintain accurate, detailed information for all assigned change requests (CRs), in the CR database, related to the applicable development detail of the CRs lifecycle.* * *Provide impact analysis reporting for the CCB approved problems or changes, including documentation of suggested solutions to facilitate CCB disposition activities.* * *Documentation of build, release, and installation instructions.* |
| *Software Change Manager* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Governing body for reviewing and approving change requests under the SCM Procedures and work instructions.* |
| *Technical Writer*  *<Assignee>* | * *Develops technical deliverable documentation to support the software deliverables.* * *Provides editing, formatting, and graphics support for documentation.* * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* |
| *Software Quality Assurance Manager*  *<Assignee>* | * *Develops and maintains artifacts following proper version control procedures defined in the SCM Procedures and work instructions.* * *Ensures all SQA Analysts work within the SCM Procedures and work instructions.* * *Verifies that only SCM-approved deliverables are installed into the test environment(s).* * *Ensures that SQA Analysts are always testing from official SCM deliverables.* * *Attends CCB meetings and provides testing details, as required.* * *Reviews status accounting related to the project.* * *Reviews deliverable artifacts.* |
| *Software Quality Assurance Analysts/ Testing Analyst/*  *<Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Responsible for testing installed releases, as SCM provides releases from development.* * *Update CRs assigned to them according to test activity results.* * *Determines Pass/Fail for each CR scheduled for a release.* * *Opens CRs (defect and or enhancements) for any newly discovered problems during testing.* |
| *Release Manager/ Implementation Team/ EVS/Operations Team/*  *<Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions document.* * *Coordinates the release and deployment of software to the existing sites and the newly activated sites following SCM Procedures and work instructions.* * *Assures products meet all exit criteria prior to release* * *Assures change control and SCM processes have been followed as defined in the SCM Procedures and work instructions.* |
| *Process Engineer*  *< Assignee>* | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Guides the Team members in following the EPG published process maps.* |

# CONFIGURATION IDENTIFICATION

*<This section describes the Configuration Identification of the Software Product and providing a unique identity to the product, it’s components, and associated documentation, including the definition of appropriate level of identification. In order to identify the configuration item(s)(CI)s that are to be placed under SCM control, the SCM Manager must understand that Configuration Identification is the process of selecting the CIs and the development items subject to Change Control for a product, assigning unique identifiers to them, and recording their functional and physical characteristics in technical documentation.*

*The following items are subject to configuration identification for software products as per the SCM Plan Standard and are to be placed under SCM control:*

* *Products that are delivered to the customer*
* *Designated internal work products, including source code used to generate the deliverable*
* *Commercial off the Shelf (COTS) products*
* *Non Developmental Items (NDI) products*
* *Tools*
* *Other items that are used in creating and describing these work products, including documentation describing the function and physical requirements and characteristics of the product*

*These items consist of the set of currently approved or conditionally approved technical documentation, source code, executable images, and object files that identify and describe the functional and physical characteristics of the application.*

***Commercial off the Shelf (COTS) products***

*A COTS item is defined as a commercial item that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and:*

* *Has been sold, leased, or licensed to the general public; or has been offered for sale, lease, or license to the general public*
* *Has been sold or offered for sale in substantial quantities in the commercial marketplace*
* *Has been offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace*

*COTS items shall be identified within the system configuration by the manufacturers name, item identification, and version in sufficient detail to allow re-acquisition of the identical item. If a COTS item is changed in such a manner that it no longer meets the definition of COTS, the item must be reclassified by its new classification.*

***Non Developmental Items (NDI) products***

*An NDI is defined as any COTS item that requires only minor tailoring of a type customarily available in the commercial marketplace, and is within the normal function of the COTS item. This tailoring does not include modification or customization beyond what is normally provided in the commercial marketplace and is outside of the provider’s normal pricing structure.*

*NDI items shall be identified within the system configuration by the manufacturers name, item identification, version, and tailoring in sufficient detail to allow re-acquisition of the identical item. If a NDI item is changed in such a manner that it no longer meets the definition of NDI the item must be reclassified by its new classification*

***Modified Item***

*A modified item is defined as a COTS or GOTS item which is customized for a specific purpose and to meet specific requirements beyond the normal function of the COTS or GOTS item is defined as a Modified item*

***Third Party Item***

*A Third Party Item is defined as a new item or modified item developed by a subcontractor for a specific purpose and to meet specific requirements.*

***Developmental Item***

*A Developmental Item is defined as a new item or modified item developed for a specific purpose and to meet specific requirements.*

|  |  |
| --- | --- |
| COTS USED |  |
| NDI USED |  |
| MODIFIED ITEMS |  |
| THIRD PARTY ITEMS |  |
| DEVELOPMENTAL PRODUCTS |  |

# COMPONENT SPECIFICATION: GOAL-1

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END

# COMPONENT SPECIFICATION: GOAL-2

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END

# COMPONENT SPECIFICATION: GOAL-3

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END

# COMPONENT SPECIFICATION: GOAL-4

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END

# COMPONENT SPECIFICATION: GOAL-5

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END

# COMPONENT SPECIFICATION: GOAL-6

|  |  |
| --- | --- |
| ***Component Name*** | **Indicate Component Name as a Noun** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | State computational abilities here. |
| ***Processing*** |  |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Related to which Module? Related to which Sub-system? |
| ***Resources*** | Files/ Utilities/ Databases |
| ***Interactions*** | Name the other components with which the component interacts |
| ***Interface/Tasks*** | State the functions that the interface performs other than the computation. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Name of the Interface

BEGIN

SEQUENCE

IF-THEN

IF-THEN-ELSE

WHILE-DO

REPEAT-UNTIL

SWITCH CASE

END