



SME initiative

Configuration Management Training

Section 12

Preparing a CM Implementation Document

prepared and lectured under ESA contract by

INGENIEURBURO WOLFGANG WEISS

INDUSTRIEBERATUNG

Section 12 - Preparing a CM Implementation Document

- The generic enterprise CM manual
 - Establishes the enterprise-wide CM policy
 - Provides generic CM processes applicable to all projects with no particular requirements imposed by contract
 - Provides template procedures, subject to project modification if so required
 - Establishes functional requirements to a PDM system; or
 - Describes or references the enterprise PDM system
 - Lists all CM / TDM procedures released for unlimited use in the enterprise

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- The project CM plan
 - Contents of the configuration management plan depend on the project environment in which CM is to be performed.
 - Relative to the order of contracting
 - » Customer-to-supplier (describes how it shall be done)
 - » Supplier-to-customer (describes how we will do it)
 - » Project-to-lateral (describes what is needed to know)
 - Relative to the product life-cycle
 - » Entire product life-cycle
 - » Particular phase(s) of the product life-cycle (e.g., conceptual, development, production)

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- The project CM plan (contd)
 - The project configuration management plan
 - should describe briefly CM's place in the project organization
 - should delineate the product structure and its selected Configuration Items
 - should contain CM process diagrams
 - must cover the major CM sub-disciplines (identification, control, status accounting, verification / audit) as a minimum
 - should describe the contractual flow-down of CM requirements
 - has to reflect project / contract requirements
 - should be developed by the CM organization
 - should be approved by higher authority
 - should be maintained under CM control
 - should implement common practices (see "generic enterprise CM manual")
 - should become a contractual document

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- The project CM plan (contd)
 - Outline for a typical project CM plan
 - A cover page, addressing the document (plan) title, document identification, revision / issue index, data requirements source document (e.g., the DRL data item number, or, alternatively, the DRD when taken untailed), contract reference; followed by a revision record page, and page(s) for the table of contents
 - Chapter 1: Introduction
 - » Purpose, scope and applicability of plan
 - » Description of product
 - » Definitions and acronyms
 - Chapter 2: Reference (normative) documents
 - Chapter 3: Organization
 - » CM relationship to other internal organization elements
 - » CM authority and responsibilities
 - » CM organization
 - » Interface with other CM organizations (customer, subcontractor / vendor and other internal CM organizations)

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- The project CM plan (contd)
 - Outline for a typical project CM plan (contd)
 - Chapter 4: CM phasing and milestones for accomplishments
 - » Release and submittal of CM plan for customer approval
 - » Release and submittal of CM procedure documents for internal approval
 - » Release of PDM system requirements document
 - » Establishment of internal developmental and contractual baselines
 - » Start of internal configuration control
 - » Testing of PDM core functionalities
 - » Configuration control / change boards and material review board charter
 - » Configuration verification reviews and CM audits
 - » Start of formal configuration control
 - » PDM buy-off tests

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- The project CM plan (contd)
 - Outline for a typical project CM plan (contd)
 - Chapter 5: Configuration identification
 - » CI / SCI selection
 - » Configuration identifiers (numbering)
 - » Developmental configurations
 - » Formal configuration baselines
 - » Engineering / software release procedures
 - Chapter 6: Configuration interface management
 - » System interfaces
 - » Subsystem interfaces
 - » CI internal interfaces
 - » Hardware-to-software interfaces

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- The project CM plan (contd)
 - Outline for a typical project CM plan (contd)
 - Chapter 7: Configuration control
 - » Change board functions, responsibility, authority
 - » Processing engineering changes
 - » Processing software changes
 - » Processing planned, permanent configuration departures (deviations)
 - » Processing product nonconformances (waivers)
 - Chapter 8: Configuration status accounting and reporting
 - » Collecting, recording, processing and maintaining CSA data
 - » Preparing and issuing CSA reports
 - » CSA data base access
 - » PDM utilization for CSA

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- The project CM plan (contd)
 - Outline for a typical project CM plan (contd)
 - Chapter 9: Configuration verification reviews and CM audits
 - » Plans, procedures, required documentation and schedules for configuration verification reviews and CM audits
 - » Review / audit results: recording, reporting and tracking action items
 - » Documentation concluding the review / audit
 - Chapter 10: Supplier (subcontractor / vendor) CM control
 - » Flow down of CM requirements by contract language and data requirements
 - » Supplier CM program monitoring methods
 - Chapter 11: Technical data management (when part of CM)
 - » Maintenance and access procedures for text and CAD files
 - » Data and software repositories
 - » Implementation of the PDM system

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- Procedures complementing and executing the CM plan
 - The CM plan should be as detailed as necessary to
 - (1) comply with the data requirements stipulated in the contract;
 - (2) provide the amount of information required for convincing the customer that CM is practiced orderly for the project
 - The CM plan should be limited to the procedural approach, yet reserving enough flexibility for amending work procedures without the necessity for contractual action.

(Note: The CM plan (the CM implementation document) is usually a deliverable document as per the Data Requirements List (DRL), part of the contract
 - A set of CM / TDM procedures should be established to complement the CM plan
 - Such procedures may be for general application or may be unique for a particular project

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- A breakdown of typical CM / TDM procedures
 - Identification and status indexing of configuration documentation
 - Product identification and identification marking requirements
 - Preparation requirements for configuration definition data
 - PDM tailoring guidelines to project unique requirements
 - Preparing and processing of engineering deficiency queries
 - Preparing and processing of engineering change requests
 - Preparing and processing of software trouble reports
 - Preparing and processing of software enhancement requests
 - Preparing and processing of engineering / software change proposals and deviation requests

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- A breakdown of typical CM / TDM procedures (contd)
 - Disposition of non-conforming material and processing of according waiver requests
 - Temporary configuration departure authorization
 - Conduct of configuration change and associated boards
 - Configuration status recording and reporting
 - Promotion and control of non-standard parts, materials and manufacturing processes
 - In-process and release control of digital configuration data files
 - Establishing and maintaining software libraries
 - Establishing and maintaining software repositories