Enterprise CM
“Concept To Delivery”

Gaston A. Ray
Crusader software/hardware Configuration Management
Configuration Management
(Concept to Delivery)

Overview

This session will present a “Conception to Delivery” overview of data/product development beginning with establishment of initial systems Engineering Requirements through the final release of the software/hardware/hardware development.
1. PURPOSE

To establish and maintain the integrity of the products - of the software/hardware - throughout the programs software/hardware life cycle.

2. OBJECTIVE

To verify existence, identification, and location of the software/hardware product configuration (i.e., selected software/hardware work products and their descriptions) at any given points in time, systematically controlling changes to the configuration, and maintaining the integrity and traceability of the configuration throughout the developmental life cycle.

3. GOAL

Establish a software/hardware baseline library to ensure that changes to the baselines are systematically controlled via the change control and configuration auditing functions of software/hardware Configuration Management.

- CM activities are PLANNED.
- software/hardware products are IDENTIFIED, CONTROLLED, and AVAILABLE.
- software/hardware changes are CONTROLLED.
- Organization is informed of the STATUS and content of the software/hardware baseline.
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CM Tools needed from the Toolbox:

Tool Needed: Benchmarking

Tool Needed: Brainstorming

Tool Needed: Group Consensus Technique

Tool Needed: Flowcharting
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V-Model

Sprial Model
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**Baseline Events**
- **CF Prototype** (Formal Control)
- **FF Prototype** (Formal Control)
- **Development**
- **CF Allocated** (Formal Control)
- **FF Allocated** (Formal Control)
- **CF Allocated** (Internal Control)
- **FF Allocated** (Internal Control)
- **CF Functional**
- **FF Functional**

**Program Reviews**
- **CF FCA**
- **FF FCA**
- **TRR/DVT**
- **CF CDR**
- **FF CDR**
- **CF PDR**
- **FF PDR**
- **CF SRR**
- **FF SRR**

**Documentation**
- **SDD, Detailed Drawings**
- **Verification & Integration Plan**

**Baseline Phases**
- **Baseline Events**
- **Documentation**
- **Program Reviews**

**Events**
- **CF SRR**
- **FF SRR**
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“Concept to Delivery”

CM Must be involved in “All Areas”

System software/hardware Requirements Analysis Process

Segment software/hardware Integration and Test Process

software/hardware Architecture Process, Plans, and Guidelines

Implementation Process

software/hardware Requirement Specification Development Process

Preliminary Design/Build Process
## Configuration Management
(Concept to Delivery)

<table>
<thead>
<tr>
<th>Lifecycle Phase</th>
<th>(Where)</th>
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<tbody>
<tr>
<td>Referenced Document</td>
<td>(How)</td>
</tr>
<tr>
<td>Change Authority</td>
<td>(Who)</td>
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<tr>
<td>CI Elements Developed</td>
<td>(What)</td>
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<td>Artifact Location</td>
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### Configuration Management (Concept to Delivery)

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<tbody>
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<td>Manager System Engineering</td>
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<td>CI Elements Developed</td>
<td>Rose Model DOORS RTM Requisite Pro Etc…</td>
</tr>
<tr>
<td>Artifact Location</td>
<td>Apex (- ) Use Case Descriptions IDE (-) SSDD, (+) Domain Approach RTM (-) SBE, (-) SSC, (-) SWC, (-) BIF</td>
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# Configuration Management
(Concept to Delivery)

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<td>Apex (-) Behavior Sequences IDE (+) Studies, (-) SRS, (-) IRS RTM (-) BLD, (-) BIS, (-) USE, (-) SW Req</td>
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*(Concept to Delivery)*

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<th>Detailed Design</th>
<th>Code &amp; Unit Test</th>
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<td>CI Elements Developed</td>
<td>Build Plans Concept ADD Ada Spec TIM</td>
<td>Ada Bodies Ada Specs C++ Code Drawings</td>
<td>Test Plan Test Desc. Test Report BOM</td>
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<td>Artifact Location</td>
<td>Apex (+) Ada Spec IDE (-) Build Plan, (+) Concept, etc.</td>
<td>Apex (-) Ada Bodies &amp; Specs, (-) C++ Code IDE (+) Design Artifacts Pro E</td>
<td>Apex (-) Source Code IDE (-) Plan, Desc., (-) Test, (-) BOM</td>
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# Configuration Management

**Concept to Delivery**

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<tr>
<th>Lifecycle Phase</th>
<th>CSCI I&amp;T</th>
<th>Segment I&amp;T</th>
<th>Vehicle I&amp;T</th>
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**Artifact Location**

- Apex (-) Source Code
- IDE (-) Plan, (-) Desc., (-) Test, (-) BOM
- RTM (-) Test Case, (-) Results, (-) Class

**Change Authority**

- S/W – H/W Project Manager
## Configuration Management

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**CSCI Integration & Test Phase**

*Objective: Verify Existence, Identification, and Location.*

### Walkthrough/Peer Review Results

- Are open issues/discrepancies from the Readiness Walkthrough closed?
- Is the Source Code identified in the SDL?
- Are the CSCI Test Artifacts (Harness) identified in the SDL?
- Is the BOM identified in the SDL?
- Is the Anomaly List identified in the SDL?
- Is the CSCI I&T Plan or SITP identified in the SDL?
- Is the CSCI I&T Description or SITD identified in the SDL?
- Is the software/hardware Test Report identified in the SDL?
- Are the Release Notes identified in the SDL?
- Is the software/hardware Test Case identified in RTM?
- Are the software/hardware Test Results identified in RTM?
- Is the software/hardware Test Class identified in RTM?
- Is Walkthrough Info identified in the SDL (Workbook, Checklists, & Supporting Docs)?
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- System RA Baseline:
  SCM Conducts Audit and System Requirements Artifacts are Baseline Controlled.

- CSCI Baseline:
  SCM Conducts Audit and CSCI Artifacts are Baseline Controlled.

- Segment Baseline:
  SCM Conducts Audit and Segment (RSV/SPH) Artifacts are Baseline Controlled.

- Vehicle I&T Baseline:
  SCM Conducts Audit and Vehicle S/W I & T (RSV/SPH) Artifacts are Baseline Controlled.