Configuration Management

based on the

National Consensus Standard for Configuration Management
ANSI/EIA-649
**Best Practices**

- **Industry “Best Practices” Reference Material**
  - ANSI/EIA 649; “National Consensus Standard for Configuration Management”
  - IEEE/EIA 12207.0; “Software Life Cycle Processes”
  - MIL-HDBK-61A; “Configuration Management Guidance”
  - MIL-STD-100G; “Engineering Drawing Practices”
  - ASME Y14.100M; “Engineering Drawing Practices”
  - ISO 10007; “Quality Management – Guidelines for Configuration Management”
Purpose of Standard:

This standard describes Configuration Management functions and principles and defines a neutral Configuration Management Terminology for use with any product line. Development began in 1994, with the Electronic Industries Alliance’s (EIA) G-33 Committee on Data and Configuration Management initiated a task to develop an industry Configuration Management standard.
CM Process Benefits:

- When Configuration Management principles are applied using effective practices, return on investment is maximized and product life cycle costs are reduced. (ANSI/EIA 649 Rev A)
Introduction to CM:

- Applies appropriate processes and tools to establish and maintain consistency between the product and the product requirements and attributes defined in product configuration information.
- Ensures that products conform to their requirements and are identified and documented in sufficient detail to support the product life cycle.
- Assures accurate product configuration information and enables product interchangeability and safe product operation and maintenance to be achieved.
- Requires a balanced and consistent implementation of CM functions, principles and practices throughout the product life cycle.
- Facilitates orderly identification of product attributes and provides control of product information and product changes used to improve capabilities; correct deficiencies; improve performance, reliability, or maintainability; extend product life; or reduce cost, risk or liability.
CM Functions and Principles:

The CM process is comprised of five (5) CM functions and their CM principles that together provide a flexible implementation structure. The CM process is used to provide consistency between product requirements, product configuration information and product attributes.

The five CM functions are:

1) Configuration Management Planning and Management
2) Configuration Identification
3) Configuration Change Management
4) Configuration Status Accounting, and
5) Configuration Verification & Audit
CM is a discipline providing

- Assurance that the configuration of a product is known and reflected in product information
- Verification that product change is beneficial and effected without adverse consequences
- Proof that a change is managed from idea inception to incorporation into all affected items

Properly applied, CM:

- Serves both provider (developer, producer, supplier) and user (customer) of a product
- Facilitates product support and product maintenance
- Is a Cost Avoider not a Cost Driver!!!
What does CM do for the Provider?

- Prevents technical anarchy
- Avoids trial and error engineering and program management
- Avoids embarrassment of customer dissatisfaction and complaint
- Captures information needed to make later decisions
- Avoids cost and catastrophe!
What does CM do for the user?

- Provides customer choice on changes affecting customer interests
- Guarantees continued support of a product, or at least notice of obsolescence
- Assures consistency between the product and the information about the product
- Enables user and service person to distinguish between product versions and correlate to related instructions
Change Requests
• Improve design
• Increase reliability
• Enhance Maintainability
• Reduce Cost
• Etc.

Controlling changes from idea inception to incorporation in all affected items
Purpose and Benefits

- Configuration Management process facilitates orderly management of product information and product changes.
- Products are labeled and correlated with their associated requirements and design.
- Product configuration is documented and a known basis for making changes is established.
- Proposed changes are identified and evaluated for impact prior to making change decisions.
Change activity is managed using a defined process

Configuration information captured during the product definition, change management, product build, distribution, operation and disposal processes is organized for retrieval of key product information and relationships, as needed

Actual product configuration is verified against required design attributes

Incorporation of changes to the product is verified and recorded throughout the life of the product
**CONFIGURATION CHANGE MANAGEMENT**
Manage changes

**CM PLANNING & MANAGEMENT**
Selection, tailoring, guidance, oversight

**CONFIGURATION IDENTIFICATION**
Attributes, identifiers, baselines

**CONFIGURATION STATUS ACCOUNTING**
CM information & status

**CONFIGURATION VERIFICATION/AUDIT**
Verify performance & consistency
Summary

The Bridge Work is Complete, When All the Functions are Included
Configuration Management is a management process assuring that:

- Products conform to the design and documentation governing their development and production
- Documentation is controlled and reflects the latest, approved version
- End users will have the capability to maintain and reprocure delivered products

*Configuration Management is like a Cookbook -*

*You “must” know the receipe to be repeatative!*