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06 March 2013

DEPARTMENT OF DEFENSE
INTERIM STANDARD PRACTICE

CONFIGURATION MANAGEMENT

AMSC 9275 AREA SESS

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FOREWORD

1. This standard is approved for interim use by the US Army. The Defense Standardization Council approved this interim standard until a suitable non-government standard is developed or until two years from the date of this standard, at which time, this standard will be canceled.

2. Comments, suggestions, or questions for this document should be addressed to Commander, U S Army ARDEC, ATTN: RDAR-QES-E, Picatinny Arsenal, NJ 07806-5000 or emailed to usarmy.picatinny.ardec.list.ardec-stdzn-branch@mail.mil. Since contact information can change, the user of the document should verify the currency of this address information using the ASSIST online database at https://assist.dla.mil.

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1. SCOPE

1.1 Scope. This standard defines Configuration Management (CM) requirements for US Army acquisition programs which apply throughout the lifecycle of systems and their Configuration Items (CIs) and provides the principles to acquire CM processes and products consistently across the Army. This standard implements the principles of *ANSI/EIA-649* (Rev B) *Configuration Management Standard* and the requirements of DOD Instruction 5000.02 for CM practices.

1.2 Selective application. The ANSI/EIA-649 CM functions and the requirements in this standard are performed throughout the lifecycle of a given system as tailored based on the lifecycle phase, acquisition strategy, systems engineering plan, and lifecycle support plan. Army activities and organizations will give maximum latitude to supplying activity's processes and procedures, provided those processes and procedures are compliant with the principles of ANSI/EIA-649 and meet the acquiring activities requirements. The principles of ANSI/EIA-649 are identified throughout this document for reference.

1.3 Tailoring implementation. Tailoring of this standard consists of selecting the necessary configuration management requirements based on the product's/item's lifecycle phase, complexity, size, intended use, mission criticality, and logistic support requirements. All requirements herein are subject to tailoring as prescribed by the tasking directive, purchase order, performance work statements or contract statement of work (hereafter collectively referred to as the contract). In case of conflict between the contract and this standard, the contract takes precedence.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in Sections 3, 4, and 5 of this standard. This section does not include documents listed in other sections or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned they must meet all specified requirements of documents cited in Sections 3, 4, or 5 of this standard, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-961	Defense and Program-Unique Specifications Format and Content
MIL-STD-31000	Technical Data Packages

DEPARTMENT OF DEFENSE HANDBOOKS

MIL-HDBK-61	Configuration Management Guidance

(Copies of these documents are available online at https://assist.dla.mil).

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this standard to the extent specified herein. Unless otherwise specified, the issues of the documents are those cited in the solicitation or contract.

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DEPARTMENT OF DEFENSE POLICIES AND DIRECTIVES

DoD Directive 5000.01	The Defense Acquisition System
DoD Instruction 5000.02	Operation of the Defense Acquisition System

OTHER DEPARTMENT OF DEFENSE DOCUMENTS

Cataloging Handbook H4/H8	Handbook for Commercial and Government Entity Codes

(Copies of the Cataloging Handbook H4/H8 are available from the Commander, Defense Logistics Services Center, and Battle Creek, MI 49017-3084, or alternately http://www.dlis.dla.mil/cage_welcome.asp) .

2.3 Non-Government publications. The following documents form a part of this standard to the extent specified herein. Unless otherwise specified, the issues of the documents are those cited in the solicitation or contract.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS STANDARDS

ASME Y14.35M	Revision of Engineering Drawings and Associated Documents

(Copies of this document are available from www.asme.org or American Society of Mechanical Engineers, 22 Law Dr., Fairfield NJ 07907.)

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 10007	Quality Management Systems — Guidelines for Configuration Management

(Copies of this document are available online at http://www.iso.org/iso/home/standards.htm.)

TECHAMERICA STANDARDS

ANSI/EIA-649	Configuration Management Standard
GEIA-HB-649	Configuration Management Guidance

(Copies of this document are available online at www.techamerica.org/ or from TechAmerica, 601 Pennsylvania Ave., NW, North Building, Ste 600, Washington DC 20004-2650.

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. (IEEE)

IEEE 12207	Systems and Software Engineering - Software Life Cycle Processes
IEEE 828	Standard for Configuration Management in Systems and Software Engineering

(Copies of this document are available online at www.ieee.org or from IEEE Service Center, 445 Hoes Lane, Piscataway NJ 08855- 1331.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes

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precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. DEFINITIONS. This section establishes the definitions for terms used throughout this document and are considered the preferred terminology for Army use. Use of other equivalent terminology as stated in ANSI/EIA-649 Terms, Definitions, Alias, and Related Terms table are acceptable, provided the intent of this standard and ANSI/EIA-649 are met.

3.1 Acquiring Activity. The Government, contractor or any other organization which establishes the requirements for an item, service or set of data, and is responsible for the issuance of a contract or solicitation for these goods or services.

3.2 Allocated Configuration Documentation (ACD). The written requirements for a product, subsystem or component, describing the functional, performance, interoperability, interface and verification requirements, that are allocated from higher-level requirements. Once approved, serves as the official record of the allocated baseline.

3.3 Baseline. The configuration of an item established at a specific point in time and documented in the configuration documentation (e.g., specifications, drawings, Technical Data Packages (TDPs), etc.). The baseline is a formal, controlled, and maintained set of data that can serve as a point of departure for defining change. When used as a verb, baseline is the act of establishing and approving a set of configuration documentation, typically for purposes of implementing formal configuration change control. A baseline can be established at any time for many different purposes. For purposes of this standard, there are three major baselines (also known as technical baselines) established throughout a product's life defined as follows:

a. Functional Baseline (FBL). The approved functional requirements for a product or system, describing the functional, performance, interoperability, interface, and verification requirements, established at a specific point in time and documented in the functional configuration documentation.

b. Allocated Baseline (ABL). The approved requirements for a product, subsystem or component, describing the functional, performance, interoperability, interface and verification requirements, that are allocated from higher-level requirements, as established at a specific point in time and documented in the allocated configuration documentation.

c. Product Baseline (PBL). The approved detailed design requirements for a product or system established at a specific point in time and documented in the product configuration documentation.

3.4 Block change concept. An engineering change implementation concept that groups a number of ECPs for simultaneous implementation into product instances. Concept designates that a number (i.e., a block) of consecutive production units of the configuration item have identical configuration on delivery and in operation. (Using this concept, the production run is divided into "blocks" of units. The production line incorporation point for a proposed Engineering Change Proposal (ECP) is delayed to coincide with the first unit of the next block, or retrofit is required at least for all already delivered units of the current block.) The concept may require the accumulation and the simultaneous implementation of a number of routine changes (hardware or software) to minimize the number of interim versions and related documentation.

3.5 Commercial and Government Entity (CAGE) Code. A five character, alphanumeric code listed in Cataloging Handbook H4/H8, *Commercial and Government Entity Code*, which is assigned to

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commercial and government activities that manufacture or develop items, or provide services or supplies for the government.

3.6 Component. A part, subassembly, or assembly that comprises a composite part of a higher level CI. Components are identified in the product hierarchy, assigned nomenclature and identifiers, and are defined via drawings, Model Based Definitions (MBD) datasets, detailed specifications, performance specifications, commercial item definitions, or other means.

3.7 Computer Software Configuration Item (CSCI). A configuration item that is computer software.

3.8 Computer software documentation. Technical data or information, including computer listings, regardless of media, which documents the requirements, design, or details of computer software; explains the capabilities and limitations of the software; or provides operating instructions for using or supporting computer software during the software's operational lifecycle.

3.9 Configuration. The functional and physical characteristics of existing or planned hardware, firmware, software or a combination thereof, as detailed in requirements and technical documentation and ultimately achieved in a product.

3.10 Configuration Audit. See "Functional Configuration Audit (FCA)" and "Physical Configuration Audit (PCA)".

3.11 Configuration Change Approval Authority (Configuration Change Authority (CCA)). The organization or individual authorized to approve changes to, or variances from, an approved configuration baseline.

3.12 Configuration Change Management. The configuration management function that provides for the systematic proposal, justification, evaluation, coordination, approval or disapproval of proposed changes and variances, and the implementation of approved changes to a configuration item and its corresponding configuration baseline documentation; also known as configuration control.

3.13 Configuration Control Board (CCB). An official forum composed of technical, logistics, acquisition, management, and administrative personnel who recommend to the Configuration Change Authority approval or disapproval of proposed changes to, and variances from, an item’s approved configuration documentation.

3.14 Configuration Control Board Directive (CCBD). The document that records the rationale and decision of the CCB and Configuration Change Authority with respect to a configuration change action.

3.15 Configuration Identification. The configuration management function that establishes the configuration items which are to be managed, organizes configuration items into a hierarchical structure, assigns nomenclature and product identifiers to those configuration items and related components, determines the documents and document identifiers which define the items, and establishes baselines for the configuration items.

3.16 Configuration Item (CI). A product or an aggregation of products that accomplishes an end-use function and requires separate identification. An item is designated as a CI for purposes of additional configuration management focus due to its complexity, logistic support requirements, acquisition strategy, or because it is intended to undergo configuration status accounting or verification and audit separately from other items. Configuration items are end items or major components of end items, which

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typically have performance requirements allocated to them and documented in their own specification.

3.17 Configuration Management (CM). An engineering and management process which ensures the configuration of an item is known and documented and changes to an item are controlled and tracked for purposes of establishing and maintaining consistency of a product's performance, functional, and physical attributes with its requirements, design, and operational information.

3.18 Configuration Management Officer (CMO) The individual assigned to review and coordinate proposed changes and variances, consolidate input, and document the CCB recommendation to the Configuration Change Authority; also referred to as Configuration Management Specialist.

3.19 Configuration Management Plan (CMP). A document, typically prepared by the supplying activity, defining in detail how configuration management will be implemented for a particular acquisition or program.

3.20 Configuration Management Strategy. A document, typically prepared by the acquiring activity, defining the overarching lifecycle requirements for configuration management for a particular acquisition or program.

3.21 Configuration Status Accounting (CSA). The configuration management function that captures, records and reports information needed to effectively manage configuration items, including maintaining a listing of the approved configuration identification, the status of proposed changes to the configuration and the processing and implementation status of approved changes.

3.22 Contract Data Requirements List (CDRL). A list of contract data requirements that are authorized for a specific acquisition and made a part of the contract. CDRLs are specified by DD form 1423-1. Subcontractor Data Requirement List (SDRL) is the subcontractor's version of a CDRL. The CDRL identifies the data items, establishes the delivery schedules, specifies the recipients and their respective quantity requirements and (by reference to Data Item Descriptions (DIDs)) prescribes the content and format of the deliverable data items.

3.23 Contractor. An individual, partnership, company, corporation, association, or Government agency having a contract for the design, development, manufacture, maintenance, modification, or supply of items under the terms of a contract. For purposes of this standard, the terms contractor and supplying activity are used interchangeably.

3.24 Current Design Activity (CDA). The activity with current design responsibility for an item and is responsible for maintenance of configuration documentation for the item.

3.25 Detail Specification. A specification that specifies design requirements, such as materials to be used, how a requirement is to be achieved, or how an item is to be fabricated or constructed. (Source: MIL-STD-961)

3.26 Design Release Configuration. The set of design information incrementally released by the developing activity for a product during a product's definition (development) phase.

3.27 Document. A self-contained set of information or data that can be stored, maintained, and delivered on a single medium. The medium may be paper, digital files, electronic storage, etc. Examples: drawings, specifications, plans, databases, computer models, software source code, reports, analyses, change proposals, etc.

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3.28 Engineering Change. An approved alteration to a product and/or its configuration information.

3.29 Engineering Change Priorities. The priority (emergency, urgent, routine) assigned to ECPs which determines the specified time period during which the change is to be reviewed, evaluated, and, if approved, ordered and implemented.

3.30 Engineering Change Proposal (ECP). A document used to describe, justify, and (if approved), implement a proposed engineering change.

3.31 Engineering Release Record (ERR). A record of the official release of configuration documentation.

3.32 Firmware. The combination of a hardware device and computer instructions or computer data that reside as read-only software on the hardware device.

3.33 Fit. The ability of an item to physically interface or interconnect with or become an integral part of another item.

3.34 Form. The shape, size, dimensions, mass, weight, material and visual parameters which uniquely characterize an item. For software, form denotes the language and media.

3.35 Function. The action or actions that an item is designed to perform.

3.36 Functional Configuration Audit (FCA). A formal examination to verify that a configuration item has achieved the functional and performance characteristics specified in its functional and allocated configuration documentation. The FCA verifies the configuration item fulfills the functional and allocated requirements. The system level FCA is similar to the System Verification Review.

3.37 Functional Configuration Documentation (FCD). The written requirements for an end item or system, describing the functional, performance, interoperability, interface and verification requirements. Once approved, serves as the official record of the functional baseline.

3.38 Identifier. A unique numeric or alphanumeric code applied to documents and products, for the purpose of identification, control, and status accounting. Identifier types include the following:

a. Enterprise Identifier. Uniquely identifies a design or manufacturing organization responsible for a particular product. Example: CAGE CODE, Data Universal Numbering System (DUNS) Number.

b. Group Identifier. Uniquely identifies a group of like units of the same product manufactured under uniform conditions. Examples: lot number/batch number

c. Product Identifier. Unique to the issuing organization, used to designate products of the same configuration, and to differentiate them from other products. Examples: part number, Universal Product Code (UPC), Stock-Keeping Unit (SKU).

d. Document Identifier. Unique to the issuing organization, used to identify configuration documentation. Examples: drawing number, specification number, document control number.

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e. Type Identifier. An alphanumeric identifier, unique within the issuing organization, which is used to designate a line of products. Examples: M16 Rifle, MK48 Torpedo, F119 Engine.

f. Unit Identifier. A sequentially issued identifier used to designate a specific instance of a product among like products. Examples: Item Unique IDentification (IUID), serial number, Vehicle Identification Number (VIN).

g. Revision Identifier. A sequentially issued identifier that distinguishes a change to a design or document in order to differentiate one closely related design or document iteration from another.

3.39 Interface. The characteristics required to exist at a common boundary. Interface characteristics may include, but are not limited to, functional, physical, mechanical, visual, thermodynamic, magnetic, electrical, electronic, electromagnetic, software or a combination of these.

3.40 Interface control. The process of identifying, documenting, and controlling product attributes at the common boundary of two or more products provided by one or more organizations.

3.41 Interface Control Document/Drawing (ICD). A document which depicts product attributes at a common boundary of two or more products for purposes of defining and controlling those attributes.

3.42 Interface Control Working Group (ICWG). A group established to control interface activity among the acquiring activity(s), supplying activity(s), or other agencies, including resolution of interface problems, documentation of interface agreements, and evaluation of ECPs affecting interface.

3.43 Model Based Definition (MBD). A dataset containing the exact solid representation, its associated 3-Dimensional (3D) geometry and 3D annotation of the product's dimensions, tolerances, materials, finishes and other notes to specify a complete product definition.

3.44 Notice of Revision (NOR). A document, submitted as part of an ECP, used to describe changes to drawings, specifications, MBD datasets, associated lists, or other referenced documents.

3.45 Performance Specification. A specification that states requirements in terms of the required results with criteria for verifying compliance, but without stating the methods for achieving the required results. A performance specification defines the functional requirements for the item, the environment in which it must operate, and interface and interchangeability characteristics. (MIL-STD-961)

3.46 Physical Configuration Audit (PCA). A formal examination of the actual (as-built) configuration of an item compared to its product configuration documentation. The PCA verifies the product configuration documentation is a clear, complete, and accurate representation of the configuration item and is necessary to establish the product baseline.

3.47 Problem/Issue/Improvement Report (PIR). A document or procedure used to record, investigate and resolve problems, issues or proposed changes/improvements to a product or process; also referred to as a Problem Report, Trouble Report, Incident Report, Deficiency Report, or Feature Change Request.

3.48 Product. An item or component which is the result of a development process. The result may be hardware, software, firmware, or any combination thereof.

3.49 Product Associated Information. Information generated as part of the product development and lifecycle management process, but isn't clearly definable as either product definition or operation information. Examples: Test Reports, System Evaluation Report, Configuration Control Information,

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CCB Decisions and Product Configuration Management Status.

3.50 Product Configuration Documentation (PCD). The written performance and detailed design documentation which define an item. The PCD incorporates performance, interoperability, and interface requirements and the verifications required to confirm the achievement of those specified requirements. The PCD also includes detailed design documentation, ranging from form, fit, and interface information to a complete detailed design disclosure package. Once approved, serves as the official record of the product baseline. (For example, a production level (3) TDP per MIL-STD-31000 would constitute the PCD for an item.)

3.51 Product Definition Information. Information that defines the product's requirements, documents the product's attributes, and is the authoritative source for configuration definition and control. It is the sum total of all information necessary to define the Functional, Allocated, and Product Configuration baselines. Examples: System Requirements Specification (SRS), Integrated Architecture, System Interface Specification, Software Performance Specification, Drawings, MBD datasets, Associated Lists, Software documentation, Interface Control Documents (ICDs), Engineering Product Structure, etc.

3.52 Product Instance Configuration. The configuration of a given item as it transitions throughout its life cycle. For purpose of this standard, the product instance configurations are defined as follows:

a. As-Designed Configuration. The configuration of an item as documented by the design activity in the product definition information.

b. As-Built Configuration. The configuration of an item as actually manufactured. The as-built configuration consists of the as-designed configuration at the time of manufacture as modified by approved variances. In addition, if the as-designed configuration consists of design alternatives, the as-built configuration is the specific configuration chosen from the available alternatives.

c. As-Maintained Configuration. The configuration of an item as currently in-service. The as-maintained configuration consists of the as-built configuration, plus any approved changes, retrofits, maintenance, or modifications implemented after the item is put into service; also referred to as the as-supported, as-installed, or in-service configuration.

3.53 Product Operational Information. Information used to operate, maintain and dispose of the product. Examples: maintenance planning documents, technical manuals and publications, support and test equipment information, and supply support information.

3.54 Product Structure. A hierarchical view of the relationship of products and components. Examples: bill of materials, indentured drawing list, top-down breakdown product tree.

3.55 Retrofit. The incorporation of new configuration parts or software code, resulting from an approved engineering change, into products previously accepted by the customer, i.e. the update of an existing as-built or as-maintained configuration to the current as-designed configuration.

3.56 Revision. A change to a document’s contents or a modification to an item such that it remains interchangeable with its previous iterations. See also version. (Ref ASME Y14.35M.)

3.57 Specification. A document prepared specifically to support acquisition which accurately describes the essential technical requirements for purchasing a product or materiel, and provides the procedures necessary to determine that the product’s performance meets the defined requirements/attributes. (Source: MIL-STD-961)

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3.58 Supplying Activity. The contractor, government agency or other organization responsible for developing or manufacturing an end item, service, or set of data per the requirements of an acquiring activity as established in a contract or solicitation.

3.59 Technical Data Package (TDP). A technical description of an item adequate for supporting an acquisition strategy, production, and engineering and logistics support. The description defines the required design configuration or performance requirements, and procedures required to ensure adequacy of item performance. It consists of applicable technical data such as models, drawings, associated lists, specifications, standards, patterns, performance requirements, Quality Assurance (QA) provisions, software documentation, and packaging details. (Source MIL-STD-31000)

3.60 Value Engineering Change Proposals (VECPs). The VECP is a subcategory of ECP which proposes to reduce cost to manufacture, test, inspect, maintain, or operate the item. The purpose of the VECP is to provide an incentive to propose engineering changes which reduce cost without reducing product performance. Savings resulting from approved VECPs are shared between the supplying and acquiring activities as stipulated by the contract.

3.61 Variance. A written authorization to temporarily depart from one or more requirements of an item's approved configuration documentation for a specific number of units or period of time. Formerly known as waiver or deviation.

3.62 Verification. All examinations, tests and inspections necessary to verify an item meets the physical and functional requirements for which it was designed, to verify a component, part or subassembly will perform satisfactorily in its intended application, or an item conforms to specified requirements.

3.63 Version. An identified and documented body of software. A version identifier is used to distinguish a changed body or set of computer-based data (software) from the previous configuration with the same primary identifier. (NOTE: The term version, revision and iteration are used interchangeably in some contexts and have specific meanings in other contexts. In some cases, two identifiers may be used, for example version may refer to a major modification of software/hardware and revision or iteration may refer to minor modification of the same version.)

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4. GENERAL REQUIREMENTS

ANSI/EIA-649B Principle CM-1

4.1 Configuration Management. The planning and execution of configuration management is an essential part of the product development and lifecycle management process. Configuration management's overarching goal is to ensure there is documentation which completely and accurately describes the intended design, the actual product matches the documentation, and there are processes in place so this continues throughout the product's life. To achieve this purpose, configuration management consists of the following actions:

a. Identifying the functional requirements and physical attributes of an item;
b. Documenting these requirements and attributes;
c. Verifying configuration of the item and its documentation; and
d. Managing changes to an item and its documentation.

4.2 Responsibility of Acquiring and Supplying Activities. Both the acquiring and supplying activities have configuration management responsibilities in the product development lifecycle. The acquiring activity establishes and controls the system's functional requirements, and has oversight responsibility during the product development, fielding, operation and disposal. The supplying activity is the organization tasked to develop, manufacture, and/or support the item and to implement the configuration management processes per the requirements of this standard and the acquiring activity.

4.3 Functions of Configuration Management**.** The configuration management process consists of five (5) functions:

1. Configuration Planning and Management
2. Configuration Identification.
3. Configuration Change Management.
4. Configuration Status Accounting.
5. Configuration Verification and Audit.

ANSI/EIA-649B Principle CMP-1

4.3.1 Configuration Planning and Management. The acquiring and supplying activities shall plan and execute a configuration management program as required by this standard, tailored appropriately for the particular CI(s), their scope and complexity, and the phase(s) of the lifecycle. The configuration management plan shall be prepared and updated as required by the solicitation or contract.

ANSI/EIA-649B Principle CI-1

4.3.2 Configuration Identification. The acquiring and supplying activity shall perform configuration identification activities as required by this standard. For configuration items and subordinate components, the configuration identification process shall select the items, establish structure to the items, issue identifiers and nomenclatures, and determine the types of configuration documentation required for each item.

ANSI/EIA-649B Principle CCM-1

4.3.3 Configuration Change Management. The acquiring and supplying activity shall apply configuration change management to each configuration item and related components and its associated product definition information as required by this standard. The configuration change management process shall ensure effective release and control procedures for CI(s)/components, shall provide an effective means for proposing engineering changes and variances to such items, provide for thorough and timely evaluation of all proposed engineering changes and variances by the appropriate Configuration

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Change Authority. It shall ensure implementation and tracking of approved changes to the configuration documentation and to the product.

ANSI/EIA-649B Principle CSA-1

4.3.4 Configuration Status Accounting (CSA). The acquiring and supplying activity shall apply CSA to each configuration item and its related components and the associated product definition information as required by this standard. The CSA system shall ensure information about the product and product configuration is captured, correlated, stored, and maintained as the product evolves through the lifecycle and provides an accurate, timely information base concerning the product.

ANSI/EIA-649B Principle CVA-1

4.3.5 Configuration Verification and Audits. The acquiring and supplying activities shall ensure configuration verification and audits are performed as necessary and required by this standard. Verifications and audits ensure the item meets the requirements of the functional/allocated configuration documentation and the product configuration documentation is a clear, complete and accurate representation of the intended design. Verification and audit are performed in order to establish a validated product baseline for each configuration item. Configuration verifications are performed by the supplying activity. Configuration audits are performed by the acquiring activity, or as a joint effort between the acquiring and supplying activity. Configuration audits consist of the Functional Configuration Audit (FCA) and the Physical Configuration Audit (PCA).

5. DETAILED REQUIREMENTS

5.1 Purpose. The purpose of this section is to identify detailed requirements that are to be selectively applied to a configuration management program.

ANSI/EIA-649B Principle CMP-2 through 8

5.2 Configuration Planning and Management. Configuration planning and management shall ensure the configuration management program results in defined and effective CM functions. Comprehensive CM planning and management shall include:

a. Application of the appropriate level of CM functions throughout the product lifecycle;

b. Assignment of CM functional responsibilities to various organizational elements;

c. Determination and application of adequate resources (including CM software tools) and facilities for implementation of CM functions;

d. Identification of metrics which shall be maintained as an indicator of performance and a basis for continuous improvement;

e. Performance of CM by suppliers and sub-contractors as necessary; and

f. Integration of the organization's product configuration information processes;

5.2.1 Acquiring Activity's Lifecycle CM Planning and Strategy. The acquiring activity will conduct planning to establish and tailor the configuration management program to meet the lifecycle requirements in accordance with the overarching acquisition strategy and DoD Directive 5000.01 and DoD Instruction 5000.02 (See figure 1 as a guide). The acquiring activity will document and update these requirements in the lifecycle CM Strategy in accordance with appendix A as necessary.

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5.2.2 Supplying Activity's CM Plan. The supplying activity shall conduct planning to establish the program specific configuration management requirements in accordance with the contract and CM Strategy as applicable. The supplying activity shall document these requirements in the Configuration Management Plan (CMP). The supplying activity shall:

a. Prepare the CMP as required by the contract, using Appendix A (or IEEE 828 for software) as required;

b. Submit the CMP and changes to the CMP IAW the contract;

c. Implement the activities required by this standard and the approved CMP.

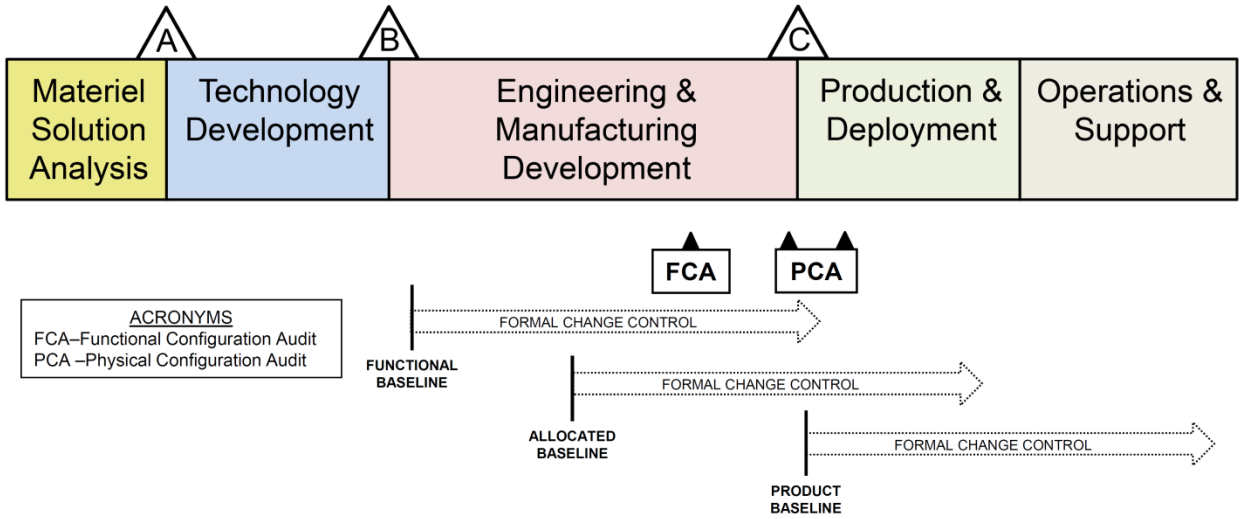

FIGURE 1.
Relationship of Key CM (Notional).

ANSI/EIA-649B Principle CI-13

5.2.3 Interface Management. The interfaces with other configuration items, both external and internal, shall be identified during the system engineering process. Those interface requirements which must be controlled by the acquiring activity shall be incorporated into the Functional Configuration Documentation (FCD) and Allocated Configuration Documentation (ACD) or through the creation of Interface Control Documents (ICDs) as applicable. Such interface requirements shall be subject to the configuration control requirements of this standard. Prior to establishing the product baseline, the supplying activity shall be responsible for defining and controlling all interfaces below the ACD level. The supplying activity shall ensure compatibility and interoperability among hardware and software components through creation of ICDs and ICWGs as necessary.

5.2.3.1 Requirements for an Interface Control Working Group (ICWG). An ICWG will be established to control interface characteristics as required. The ICWG shall include members of all activities sharing an interface. The supplying activity shall be responsible for providing a representative to the ICWG empowered to commit to specific interface actions and agreements to create, update, release, and control interface control documentation that reflect the ICWG decisions.

5.2.4 Product Data Management (PDM). In order to effectively accomplish the requirements of configuration identification and status accounting, the supplying activity shall establish a PDM system to

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store, manage and control documents, drawings and MBD datasets, which define the CIs and components. The supplying activity shall provide access to the data products from this PDM system as required by the contract.

5.3 Configuration Identification. Configuration identification is an iterative process which shall be conducted to identify the configuration items to be managed; establish a structure and hierarchy of the configuration items and related components; establish nomenclature and identifiers for those items; and determine the documents and document identifiers which define the items.

ANSI/EIA-649B Principle CI-10

5.3.1 Initial Configuration Identification Activities. Configuration identification shall begin during the requirements definition phase to determine the significant parts of a system that requirements must be allocated against and which must be documented, managed and controlled. During this process, the selection of CIs are addressed (see Figure 2) and the requirements for the allocated baseline are established (e.g. the specification tree is established). The supplying activity shall recommend potential CIs to the acquiring activity if required by the contract. Items shall undergo review as potential CIs if they require logistical support, are designated for separate procurement, require separate qualification, are significantly complex or costly, or for any other reason additional configuration management focus is deemed necessary.

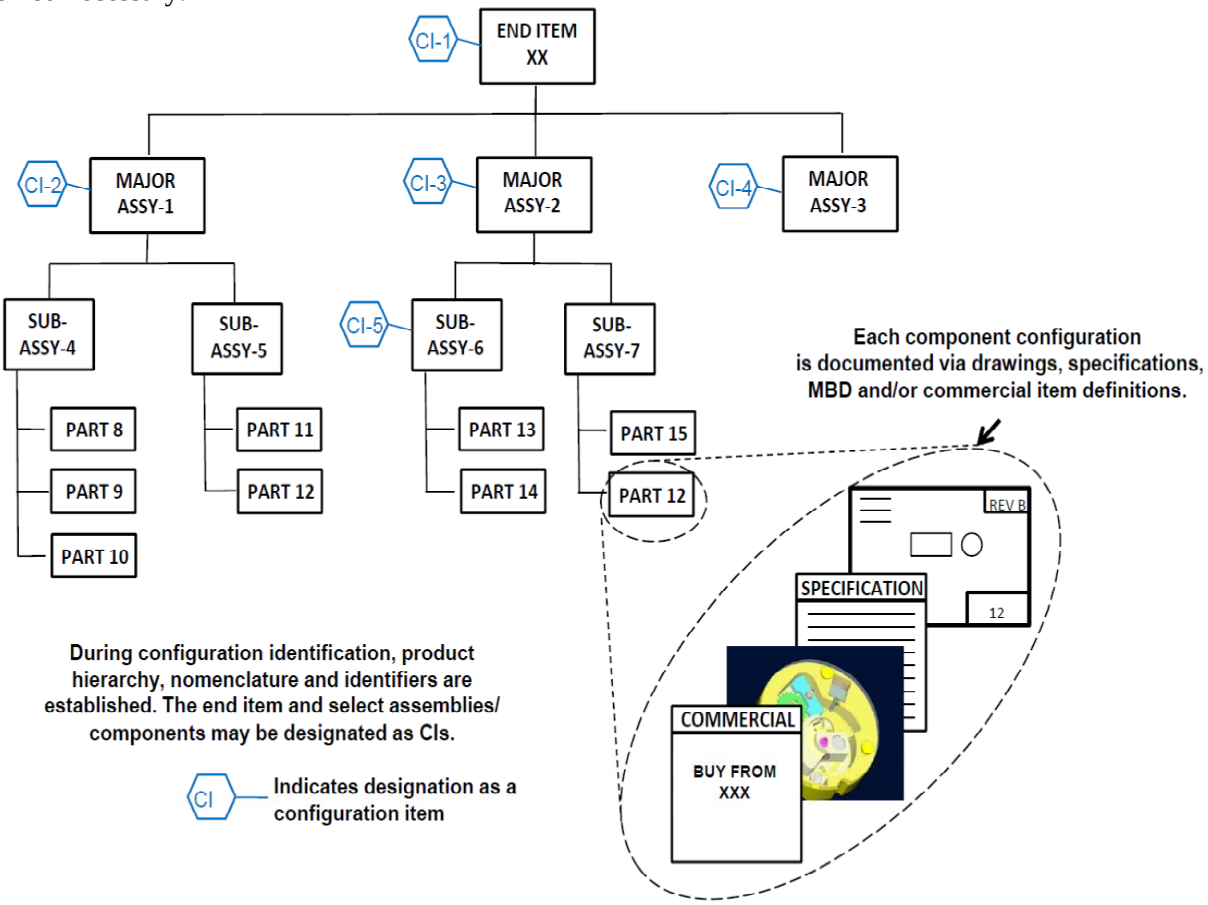

FIGURE 2. Relationship of configuration items and components.

ANSI/EIA-649B Principle CI-2

5.3.2 Detailed Configuration Identification Activities. Configuration identification shall continue

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during the detailed design definition phase to identify components of the product from the end item, through assemblies and subassemblies, down to each piece part as necessary. Configuration identification shall establish the product structure (top down breakdown structure and BOM), establish nomenclatures and identifiers, and determine the document type and format necessary to define the item (i.e. fully defined drawings, MBD, specifications, performance requirements, commercial item definitions, etc). The product structure shall be created in a logical, consistent manner and shall take into consideration both the manufacturing and logistics supportability aspects of the product, to include ensuring spare or repair parts are adequately identified.

5.3.2.1 Software Configuration Identification Activities. Software configuration identification shall ensure all necessary artifacts of the software development environment are properly identified. The source code, binary/executable, compiler, linker and library settings and any other aspect of the development environment shall be identified for subsequent control, status accounting, verification/audit and archival purposes.

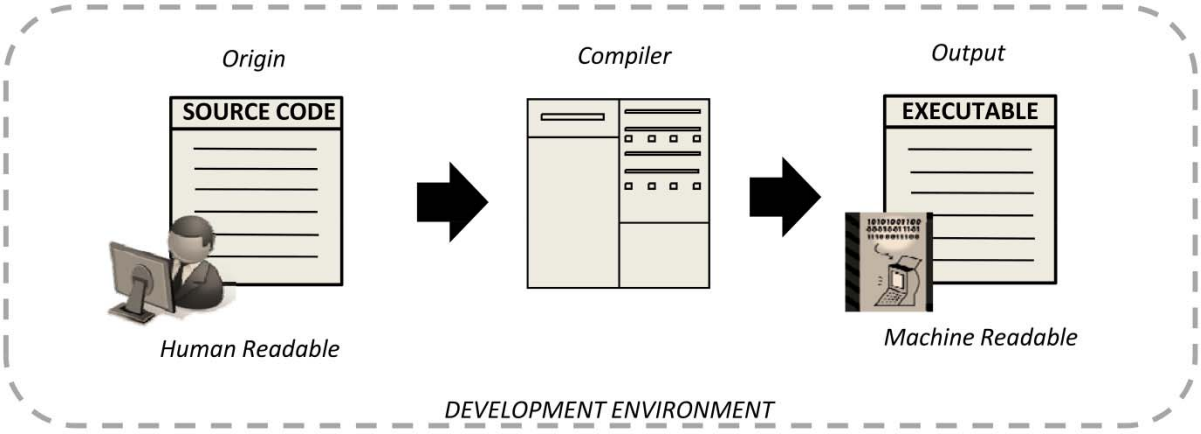

FIGURE 2. Identification of Software Development Artifacts.

5.3.3 Configuration Identification Requirements. As part of the configuration identification process, unless otherwise specified by the contract, the supplying activity shall:

a. Select (or recommend to the acquiring activity) the CIs;

b. Assign enterprise and product identifiers (e.g. CAGE Code and part numbers) and nomenclature to CIs/components and their associated documentation;

c. Establish the structure and hierarchy of the CIs/components;

d. Identify those CIs/components which require unit and group identifiers (e.g. serial and lot numbers) to establish the effectivity of each configuration;

e. Identify type and format of documentation to define each CI/component;

f. Establish a release system and approval process for configuration documentation;

g. Enter each item of configuration documentation into a configuration status accounting system.

h. With acquiring activity approval, establish the functional, allocated, and product baselines at the appropriate points in the system/CI lifecycle;

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i. Define and document interfaces; and

j. Ensure applicable identifiers are embedded in the software source and object code, and where contractually specified, electronically embedded in alterable firmware.

5.3.4 Configuration Nomenclature and Identifiers. CIs/components and associated documents shall be assigned nomenclatures and unique identifiers as described below.

ANSI/EIA-649B Principle CI-3

5.3.4.1 Enterprise Identifier. An enterprise identifier shall be assigned to each CI/component and affixed to its configuration documentation to designate the organization with design responsibility over the item. The enterprise identifier shall consist of a CAGE Code, or other mutually agreed upon enterprise identifier. When applicable and required by the contract, the enterprise identifier shall be affixed to physical CIs and components, their packaging and software media and products. If the design responsibility for an item changes during its lifecycle, the configuration documentation shall retain the original design activity's CAGE Code and shall be marked with the new design activity's CAGE Code identified as the Current Design Activity (CDA) such that traceability of design ownership is maintained.

5.3.4.2 Type Identifier and Nomenclature. A type identifier shall be assigned to each CI as required by the acquiring activity for control, tracking, procurement or logistics purposes. The type identifier shall be re-assigned (e.g. M16A1 to M16A2) when major modifications are implemented, new requirements are imposed on the item, or when such type identification would aid in the management, control and monitoring of the item.

ANSI/EIA-649B Principle CI-8

5.3.4.3 Document Identifier. A document identifier shall be assigned and applied to all documents including but not limited to specifications, engineering drawings, MBD datasets, associated lists and ancillary documents. The document identifier, in conjunction with the enterprise identifier, shall uniquely identify a document from other documents.

ANSI/EIA-649B Principle CI-4

5.3.4.4 Product Identifier. A product identifier shall be assigned to each CI/component and its related configuration documentation. The product identifier, in conjunction with enterprise identifier, shall uniquely identify an item from all dissimilar items. The product identifier shall be changed whenever a non-interchangeable condition is created. When applicable and required by the contract, CIs/components and their packaging shall be marked with their product identifier.

5.3.4.5 Software Identifiers. For each CSCI, the supplying activity shall identify its corresponding software units. For each CSCI and associated software units the supplying activity shall issue/obtain a software identifier, which shall consist of a name or number, and a version identifier, and shall relate the software to its associated software design documentation; revision; and release date. The supplying activity shall embed the software and version identifiers within the source code, and provide a method for display of the software and version identifier data to the user upon command for all end item software.

ANSI/EIA-649B Principle CI-7

5.3.4.6 Group Identifiers. The supplying activity shall assign group identifiers to groups or lots of like items as required by the contract. A group identifier shall uniquely identify a group of items produced under similar conditions from all other groups. Configuration control, identification and status accounting shall be required for each group if required by the contract. When applicable and required by the contract, the group identifiers shall be affixed to physical CIs/components and their packaging.

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ANSI/EIA-649B Principle CI-5

5.3.4.7 Unit Identifiers. The supplying activity shall assign unit identifiers (e.g. serial numbers) as required. The unit identifier shall uniquely identify an item from all other like (e.g. same part number) items. Configuration control, identification, and status accounting shall be required for each serialized unit if required by the contract. When applicable, the unit identifier shall be affixed to physical CIs/components and their packaging.

ANSI/EIA-649B Principle CI-6

5.3.4.7.1 Modification of Unit Identifiers. The original unit identifier (e.g. serial number) of an item shall not be changed. This applies even when the item is modified to the extent that interchangeability is affected. Once assigned, unit identifiers shall not be reused for a different unit of the same item.

5.3.4.8 Revision Identifiers. A document's revision identifier shall be advanced by one increment whenever the document is modified (e.g. per ASME Y14.35M).

5.3.5 Software Marking and Labeling. The marking and labeling of software shall be as follows:

a. Software identifier and version and Computer Program Identification Number (CPIN), where applicable, shall be embedded in the source code header.

b. Each software medium (e.g., magnetic tape, disk) containing copies of tested and verified software entities shall be marked with a label containing, or providing cross-reference to, a listing of the applicable software identifiers of the entities it contains.

c. Media for deliverable CSCIs shall be labeled with the acquiring activity Contract number, CSCI Number, CPIN or other acquiring activity identifier (if applicable), Design activity CAGE Code, Media Number (e.g., 1 of 2, 2 of 2) if there are multiple units per set and copy number of the medium or media set (if there is more than one copy being delivered).

d. Media copy numbers shall distinguish each copy of the software media from its identical copies. Each time a new version of software is issued, new copy numbers, starting from 1, shall be assigned.

5.3.6 Firmware Labeling. Firmware shall be labeled on the device or, if the device is too small, on the next higher assembly, as follows:

a. Where both the hardware device and the embedded code are controlled via a single drawing, the part number representing the device with the code embedded shall comprise the label.

b. Where the PCD for the source code consists of a software product specification, both the unloaded device part number and the software identifier of the embedded code, including version number, shall be listed on the label. In addition, the software identification(s) shall be labeled on an identification plate or decal located adjacent to the nameplate on the equipment containing the firmware.

5.3.7 Software Development Library. The supplying activity shall establish a Software Development Library (SDL) as necessary and implement procedures for managing the software and documentation within the SDL including the process for creating and verifying software builds.

5.3.8 Classified Data and Other Restrictive Markings. Each item of configuration documentation (drawings, specifications, software media, etc.) shall have classification markings (e.g.

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secret/confidential), distribution statements, export control, destruction notices or other restrictive markings IAW the contract and applicable security requirements.

ANSI/EIA-649B Principle CI-11

5.4 Configuration Baselines. Baselines shall be established, controlled and maintained to an extent necessary to ensure the status of the design can be determined at any point in the lifecycle.

5.4.1 Configuration Baseline Types. There are three major baseline types established during the lifecycle of a product: Functional, Allocated and Product. The functional and allocated baselines constitute inputs to the design process and shall be maintained and configuration controlled by the acquiring activity or supplying activity as required by the contract. The product baseline constitutes the output of the design process and shall be maintained by the supplying activity or as required by the contract. Figure 3 shows the relationship between the Functional, Allocated and Product baselines.

5.4.1.1 Functional Baseline. The functional baseline shall establish the functional and performance attributes as defined and approved by the acquiring activity. Establishment of the functional baseline is required before design activities can begin. The functional baseline shall be documented on the Functional Baseline Documentation (FCD) and changes to the FCD shall require approval of the acquiring activity.

5.4.1.2 Allocated Baseline. The allocated baseline(s) shall establish the requirements for lower level CIs which have been delegated from the functional requirements of higher level CIs/end item. Less complex systems with a limited number of CIs may forgo use of an allocated baseline and combine all requirements in the functional baseline. The allocated baseline shall be documented on the Allocated Configuration Documentation (ACD) and changes to the ACD require approval of the acquiring activity, Interface Control Working Group, or as required by the contract.

5.4.1.3 Product Baseline. The product baseline shall establish the approved detailed design requirements. The product baseline may evolve over time after it is established as approved changes are incorporated. The supplying activity shall establish and maintain the product baseline as required by the contract to ensure effective management of the product configuration. The product baseline shall be documented on the Product Configuration Documentation (PCD) and changes to the ACD shall be as required by the contract.

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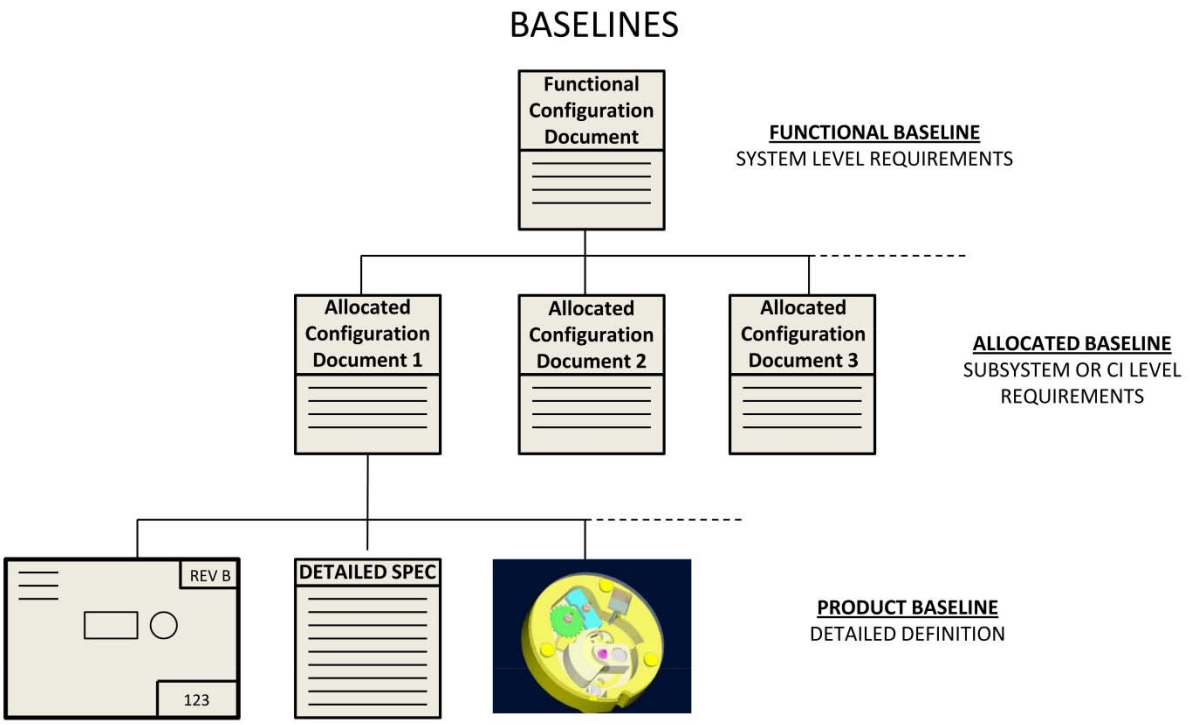

FIGURE 3. Baselines.

ANSI/EIA-649B Principle CI-12

5.4.1.3.1 Product Instance Configuration. A given instance of a product exists in the as-designed, as-built and as-maintained configuration throughout its lifecycle. The acquiring activity will identify the product instance configurations which are to be identified, controlled and accounted for. The supplying activity shall maintain the product instance configuration information (as-designed, as-built, and/or as-maintained) as identified by the acquiring activity as required by the contract. Other product instance configurations may be identified by the acquiring activity as necessary for proper control (e.g. as-tested, as-delivered, etc).

ANSI/EIA-649B Principle CI-9

5.4.2.1 Configuration Documentation. The FCD, ACD, and PCD defining the configuration baselines shall be mutually consistent and compatible. Each succeeding level of configuration documentation shall implement the requirements of, and be traceable to, its predecessor. If a conflict arises between levels of documentation, the order of precedence shall be (l) FCD, (2) ACD, and (3) PCD. Unless otherwise specified in the contract, the supplying activity shall recommend to the acquiring activity the types of specifications, drawings, MBD datasets, and associated documentation used to document each CI.

5.4.2.1.1 Functional Configuration Documentation (FCD). The acquiring activity is responsible for the creation of the documentation required for the functional baseline. The FCD will be in the form of a system specification, plus other applicable documentation (e.g. Interface Requirements Specifications). The FCD will also identify the configuration documentation for items that are to be integrated or interfaced with the end item, such as items separately developed or currently in service.

5.4.2.1.2 Allocated Configuration Documentation (ACD). The ACD shall be used to delegate

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functional requirements to lower level CIs. The acquiring or supplying activity shall generate the documentation required for the allocated baseline for each CI as required by the contract. The ACD for each CI shall be in the form of a system, item, or software requirements specification, and other referenced documentation (examples: Interface Control Documents, Interface Requirements Specifications, and item/software requirements specifications for lower-level CI(s) as applicable).

5.4.2.1.3 Product Configuration Documentation (PCD). The PCD shall prescribe the necessary physical and functional characteristics of the CI/components and the verifications required to demonstrate required performance to include form, fit, function and interface. The supplying activity shall generate the documentation required for the product baseline IAW the requirements of the contract. The determination of the appropriate format of the PCD for each CI/component shall include but is not limited to logistics supportability factors, cost, potential for technological insertion, military uniqueness of the item, availability of commercial sources and need for competitive procurements of the item. The format shall be in one or more of the following:

a. Detailed Design TDP: A production TDP consisting of drawings, associated lists, MBD datasets, detailed specifications and other documentation needed to describe the detailed design configuration (reference MIL-STD-31000 Para 4.2 Level (3) Production TDP).

b. Performance Based TDP: A product performance specification defining an item by its required performance characteristics without detail design information (ref. MIL-STD-31000 and MIL-STD-961).

c. Commercial Item Definition/Commercial Off the Shelf (COTS): A commercial item definition defining the item by enterprise identifier and/or commercial vendor name, product identifier and nomenclature (e.g. a source control drawing with a designated commercial source and part number).

5.4.3 Engineering Release Process. The supplying activity shall establish/maintain an engineering release process to authorize the use and issue of configuration documentation. The supplying activity shall ensure each released document contains the approvals of both the supplying and acquiring activities as required. The initial approval and release of baseline documents shall be done in a controlled manner to ensure all necessary functional activities (e.g. engineering, manufacturing, quality assurance, logistics, packaging, training, and procurement) are included in the review of the documents prior to approval and release. The revision of existing released documents shall be IAW the configuration change management requirements of this standard and the contract.

5.5 Configuration Change Management. This section establishes the requirements for configuration change management (also referred to as configuration control).

5.5.1 Configuration Control Status. Control of configurations will migrate through the following status levels during the lifecycle:

a. Working Status. This status level occurs during the initial development of the information which will ultimately form the baseline. At this status level, the originator maintains control and autonomy over creation and modification of the information.

b. Internal Release Status. After initial creation, the supplying activity shall perform internal review and release of the baseline information, and maintain control of the baseline information (i.e. design release configuration). Use of change procedures described below shall be used if required by the contract.

c. Formal Release Status. At this status level (i.e. formal baseline), the baseline information (e.g.

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product configuration documentation) shall be under formal configuration control and the preparing activity shall ensure the following:

1) Document identifiers are assigned.
2) Revision identifiers are established (e.g. per ASME Y14.35M).
3) The information is released in the master repository.
4) Formal change procedures described below are implemented.

d. Archived Status. At this status level, information no longer necessary or authorized for use (i.e. obsolete information) shall be retained for historical purposes. Information archived or obsolete shall be clearly marked or identified as such.

5.5.2 Requirements of Configuration Control. The supplying activity shall implement a configuration control system that ensures regulation and justification of proposed changes, documentation of the complete impact of the proposed changes, and release of only approved configuration changes into CIs/components and their related configuration documentation. Configuration control shall begin with the creation of the functional baseline and continues as the allocated and product baselines are established and documented using the FCD, ACDs, and PCDs. Configuration control shall continue throughout the lifecycle of the product.

5.5.2.1 Configuration Control of Commercial Items. In general, the acquiring activity does not maintain configuration control over commercial items. However, if required by the contract and agreed to by the supplying activity, the acquiring activity may require notification and/or approval of configuration change activity for commercial items when necessary to ensure product performance. Such notification and approval will generally be limited to changes that affect the following:

a. Form, fit or function.

b. Interface with other CIs/components.

c. Changes which may affect functional or allocated requirements.

d. Changes which may require re-qualification of the item.

ANSI/EIA-649B Principle CCM-2

5.5.3 Engineering Change Proposals (ECPs). An approved ECP shall be required for any permanent changes to approved configuration documentation. An ECP shall only be approved through the configuration control process by the Configuration Change Authority (CCA). The following steps shall be performed for ECPs in the configuration control process:

a. Identification, justification and documentation of the need for the ECP.

b. Submission of the ECP to the Configuration Change Authority.

c. Review and evaluation of the ECP by the CCB.

d. Identification of resources necessary to review, evaluate and (if approved) implement the ECP.

e. Disposition of the ECP by the Configuration Change Authority.

f. Incorporation of the approved ECP in the configuration documentation (i.e. as-designed

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configuration).

g. Incorporation of the approved ECP into the product configuration (i.e. as-built configuration).

h. Incorporation of the approved ECP via retrofit into existing products (i.e. as-maintained configuration) when required.

i. Incorporation of the approved ECP into sub-contractor configurations when required.

j. Incorporation of the approved ECP into product operational information (e.g. technical and operational manuals, training documentation, etc.) when required.

k. Archival of the ECP to include disposition and implementing actions in the configuration status accounting system.

5.5.3.1 ECP Requirements

ANSI/EIA-649B Principle CCM-4

5.5.3.1.1 Classification of Engineering Changes. An engineering change classification shall be assigned to each ECP based on the degree of significance of the change. The acquiring activity may require a different configuration control process based on the change classification. An engineering change shall be classified as one of three classes, Major, Minor and Administrative, as defined below. Classification disagreements shall be referred to the acquiring activity for final decision.

a. Major. An ECP which affects safety, significantly alters end use form, fit, function, or interface, or significantly impacts any following requirements:

(1) Performance.
(2) Reliability, maintainability, durability or survivability.
(3) Weight, balance, moment of inertia.
(4) Electromagnetic characteristics.
(5) Other technical requirements in the specifications.
(6) Impact to logistical support requirements, such as training, technical or operational manuals, spares, maintenance procedures or equipment, etc.
(7) Cost.
(8) Re-qualification of the item.
(9) Need to retrofit existing items.

Major changes are generally changes that are significant to the degree that the end user of the product will likely perceive changes in performance, operational characteristics, or operational documentation or the maintainer of the product will perceive changes to maintenance procedures or maintenance documentation.

b. Minor. An ECP which does not meet the definition of Major; and which affects or potentially affects form, fit or function, interface, producibility, material, visual characteristics, marking, packaging, etc. Minor ECPs are generally minor additions, deletions or changes to physical features; minor changes to requirements which do not impact end use functionality; and changes to dimensions, tolerances, materials, quality assurance requirements, packaging, marking, etc.

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c. Administrative. An ECP which does not meet the definition of a Major or Minor. Administrative ECPs affect the configuration documentation only, not the configuration of the item, and therefore do not affect, or have the potential to affect, end item use, form, fit or function, interface or any other performance characteristics. Administrative ECPs are generally changes such as correction of typographical errors, addition of information for clarification, changes to title block information or distribution legends, changes to MBD datasets which do not affect the design, minor format changes, changes to reference documents, etc.

5.5.3.1.2 Engineering Changes. ECPs shall be submitted in accordance with Appendix B or as required by the contract. A separate ECP shall be required for each engineering change which has its own distinct objective.

5.5.3.1.3 Re-Type Identification. Use of the ECP process or block change process shall not be used to modify an item to an extent that re-type identification is otherwise necessary for management, control and monitoring of the item.

ANSI/EIA-649B Principle CCM-3

5.5.3.1.4 Numbering and Revisions of ECPs. Each ECP shall have a unique ECP number. An ECP shall be revised when, after it has been formally submitted, requires significant alterations or changes. The first revision shall be identified by the addition of "R1" in the Procuring Activity Number (PAN) and/or ECP number block of the ECP. Further revisions of the same ECP shall be identified by the entry of "R2", "R3", etc. The date of the ECP shall be the submission date of the revision.

ANSI/EIA-649B Principle CCM-6

5.5.3.1.5 Supporting Data. Formal ECPs shall be supported by necessary test and analysis data, detailed cost data, modeling and simulation, logistics analysis data, drawings and other data necessary to describe and justify the change and to determine its total impact.

5.5.3.1.6 Classified Data. When practical, the ECP should be unclassified (not confidential, secret or top secret). Classified data essential to the evaluation and disposition of an ECP shall be submitted separately IAW the approved security procedures and referenced in the unclassified portion of the ECP. The contractual DD Form 254, Security Classification Guide, or DoD Contract Security Classification Specification applies.

5.5.3.1.7 ECP Submittals. ECPs may be proposed by the supplying or acquiring activity, or any other third party. All ECPs shall be reviewed and a disposition made by the configuration control process as required by this standard and the contract.

5.5.3.1.8 Disposition of ECPs. The originator shall be notified of the disposition of the ECP in writing within 15 calendar days (or as required by the contract) from the date of final disposition. If the decision was disapproval, the originator will be provided rationale for the disapproval.

5.5.3.1.9 ECP Types. There are two types of ECPs, preliminary and formal. The type of ECP appropriate to the circumstances shall be selected IAW the following guidelines.

a. Preliminary ECP (Type P). A preliminary ECP may be submitted to for review prior to the availability of the information necessary to support a formal ECP. It shall include a summary of the proposed change, its impact on related areas, and a justification. A preliminary ECP may be submitted to furnish the acquiring activity with information to permit the preliminary evaluation of:

(1) the merits of the proposed change (e.g. installation of a proposed change for the purpose

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of evaluation and testing prior to making a final decision to proceed with a proposed change); or

(2) the desirability of continuing expenditures required to further develop the proposal; or

(3) competing alternative proposals; or

(4) a software change prior to the development of the actual coding changes and to obtain approval to proceed with software engineering development.

b. Formal ECP (Type F). A formal ECP is the type which provides engineering information and other data in sufficient detail to support formal change approval and contractual implementation.

5.5.3.1.10 ECP Priorities. A priority shall be assigned to each ECP which establishes guidelines for the time the ECP is to be reviewed, evaluated and disposition determined. Emergency and urgent priorities shall be used only when necessary and adequately justified in writing within 48 hours of submittal. The processing time will be based upon the targets below unless otherwise agreed to between the acquiring and supplying activities.

a. Routine	45 calendar days
b. Urgent	15 calendar days
c. Emergency	3 calendar days

5.5.3.1.10.1 Routine. A routine priority shall be assigned to a proposed engineering change when emergency or urgent is not applicable.

5.5.3.1.10.2 Urgent. An urgent priority shall be assigned to an engineering change proposed for any of the following reasons:

a. To effect a change which, if not accomplished expeditiously, may seriously compromise the mission effectiveness of deployed equipment, software, or forces;

b. To correct a potentially hazardous condition, the uncorrected existence of which could result in injury to personnel or damage to equipment;

c. To meet significant contractual requirements (e.g., when lead time will necessitate slipping approved production or deployment schedules if the change was not incorporated);

d. To effect an interface change which, if delayed, would cause a schedule slippage or increase cost; or

e. To correct unusable output critical to mission accomplishment.

5.5.3.1.10.3 Emergency. An emergency priority shall be assigned to an engineering change proposed for any of the following reasons:

a. To effect a change in operational characteristics which, if not accomplished without delay, may seriously compromise national security;

b. To correct a hazardous condition which may result in fatal or serious injury to personnel or in extensive damage or destruction of equipment; or

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c. To correct a system halt (abnormal termination) in the production environment such that CSCI mission accomplishment is prohibited.

5.5.3.1.11 Expediting Changes with Priority of Emergency or Urgent. Any action which may result in an ECP with a priority of emergency or urgent shall be reported to the acquiring activity as soon as the change action is identified as potentially necessary. A formal ECP shall be submitted immediately upon available data to support the ECP is obtained.

5.5.3.1.12 ECP Justification Codes. Justification codes indicating the need for the engineering change shall be assigned as listed below. If more than one code is applicable, the code which is most descriptive or significant shall be assigned to the ECP.

TABLE I. ECP Justification Codes

CODE	TITLE	CRITERIA FOR ASSIGNMENT
B	Interface	Proposed to eliminate a deficiency due to an incompatibility between CIs.
C	Compatibility	To correct a deficiency discovered during system or item functional checks or during installation and checkout and the proposed change is necessary to make the system/item work.
D	Correction of Deficiency	To eliminate a deficiency. Code D is used if a more descriptive code (such as S, B, or C) does not apply.
L	Logistic Support	To make a significant changes or improvements in logistic supportability.
O	Operational or Product Improvements	To make a significant effectiveness or performance changes in operational capability or product improvement.
P	Production Stoppage	To prevent slippage in an approved production schedule, where delivery to current configuration documentation is impractical or cannot be accomplished without delay.
R	Cost Reduction	To provide net total lifecycle cost savings to the Government and not pursuant to a contract VE clause. Code R ECPs include cost and price of the current contract(s), plus costs resulting from associated changes in delivered items (retrofit), and lifecycle logistic support.
S	Safety	Correction of a deficiency that is a hazardous condition.
V	Value Engineering	To effect a net lifecycle cost reduction, and the VECP is being submitted pursuant to the Value Engineering (VE) clause of the contract.

5.5.3.1.13 Value Engineering Change Proposals. The requirements for VECPs shall be as stated in contract. The requirements for VECPs shall be the same as for ECPs and shall include analysis of cost savings from current and future contracts, and any collateral savings resulting from the VECP.

5.5.4 Requirements for Notices of Revision (NORs). The submitter of a formal ECP shall include all necessary changes to each affected document on the NOR form IAW Appendix C. The NOR shall clearly and completely describe the change to each drawing, MBD dataset, specification, associated list, or other affected document and shall describe both the current state of each document and the proposed modification (i.e. change from/change to). A minimum of one NOR shall be provided for each affected document (except as stated in paragraph 5.5.4.1 –Tabulated NORs). Use of alternates to the NOR form (for example, alternate format forms, electronic data transfer, etc.) are acceptable provided both acquiring and supplying activities agree and the alternate method clearly and completely communicates the recommended change to each document.

5.5.4.1 Tabulated NOR. When an identical change is required for multiple affected documents, a

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single NOR tabulating all affected documents and the change required may be submitted.

5.5.5 Requirements for Engineering Release Records (ERR). ERRs, or other approved processes, shall be used to incorporate approved ECPs into configuration documentation and to release new or revised configuration documents. An ERR, when required, shall be generated containing the information required by Appendix D or as required by the contract. The supplying activity shall also ensure that information about the newly released and approved configuration documentation is incorporated into the CSA system.

5.5.6 Requirements for Approved, Unincorporated Changes. Changes to the configuration baseline occur upon the approval of the ECP/NOR by the CCA. The time period from ECP approval until the change is incorporated into the configuration documentation and released as a new revision (the time period the change is hanging as an approved unincorporated ECP), shall be 90 days or less or as specified by the contract.

5.5.7 Consolidation of ECPS and ERRs. In general the preference shall be for a single ERR to be prepared for each approved ECP (i.e., a one-to-one relationship between the ECP and ERR). However, unrelated ECPs may be combined into a single ERR if they are incorporated as a single revision to a document. Conversely, multiple ERRs may be used to implement the requirements of a single ECP unless otherwise specified in the contract.

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5.5.8 Requests for Variance (RFV). Authorized variances are a temporary departure from requirements and do not constitute a permanent change to the FCD, ACD, or PCD. Prior to or after manufacture of an item, the supplying activity may request a variance. The supplying activity shall not build items, or present items for acceptance, that incorporate a known departure from requirements, unless a request for a variance has been approved. Where it is determined that a change should be permanent, an ECP must be processed IAW this standard. The following steps shall be performed for RFVs in the configuration control process:

a. Identification, justification and documentation of the need for the RFV.

b. Submission of the RFV to the Configuration Change Authority.

c. Review and evaluation of the RFV by the CCB.

d. Identification of resources necessary to review, evaluate and (if approved) implement the RFV.

e. Disposition of the RFV by the Configuration Change Authority.

f. Incorporation of the approved RFV into the product configuration (i.e. as-built configuration) as applicable.

g. Incorporation of the approved RFV into sub-contractor configurations when required.

k. Archival of the RFV, to include disposition and implementing actions, in the configuration status accounting system.

5.5.8.1 Classification of Variances. Each request for variance shall be classified as critical, major, or minor by the originator IAW this standard. Classification disagreements shall be referred to the acquiring activity for decision.

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a. Critical. A variance shall be designated as critical when it consists of a departure involving safety or when the configuration documentation defining the requirements for the item classifies the departure from the requirement as critical.

b. Major. A variance shall be designated as major when it consists of a departure involving: health; performance; interchangeability; reliability; survivability; maintainability; durability; effective use or operation; weight/moment/center of gravity; appearance (when a factor) or when the configuration documentation defining the requirements for the item classifies the departure from the requirement as major.

c. Minor. A variance shall be designated as minor when it consists of a departure which does not involve any of the factors listed for critical or major or when the configuration documentation defining the requirements for the item classifies the departure from the requirement as minor. Departures from the requirements that do not meet the definition of critical or major and are not classified in any configuration documentation (i.e. unlisted characteristic) shall be treated as minor.

5.5.8.2 Restrictions on Variances. Unless unusual circumstances exist, critical variances and variances which would affect service operation, logistic interoperability, or maintenance (e.g., repair parts, operation or maintenance procedures, or compatibility with trainers or test sets) shall not be requested or approved. Submittal of recurring variances is discouraged. If it is necessary for a supplying activity to request a variance for the same condition multiple times, the need for a permanent engineering change, rather than a variance, will be addressed between the acquiring activity and the supplying activity. Approval of variances applies to the contract(s) identified in the variance and shall not be applied to other contracts without approval of the contracting officer.

5.5.8.3 Supporting Data for RFVs. RFVs shall be supported by analysis data, test data, modeling, simulation, logistics analysis data, drawings, photographs, and/or other data as necessary to describe and justify the RFV and to determine its total impact.

5.5.8.4 Priority of RFVs. RFVs shall be given a priority of emergency, urgent or routine IAW the requirements for ECPs in paragraph 5.5.3.1.9. RFVs with a priority of emergency or urgent shall be reported to the acquiring activity as soon as the action is identified as necessary and the priority shall be justified in writing within 48 hours of submittal. An RFV shall be submitted immediately upon available data to support the RFV is obtained.

5.5.8.5 Disposition of RFVs. The Configuration Change Authority (or designated representative) shall notify the originator of the RFV in writing of the disposition within 15 calendar days (or as required by the contract) from the date of final disposition. If the decision was disapproval, the originator will be provided rationale for the disapproval.

5.5.8.6 Revision of RFVs. Revision requirements of RFVs are the same as for ECPs as stated in paragraph 5.5.3.1.3.

5.5.8.7 Format. The RFV shall be prepared IAW Appendix E or as agreed to by the acquiring and supplying activities.

5.5.9 Configuration Control Board (CCB) Requirements. All ECPs and RFVs are to be evaluated by the CCB as required by the contract prior to a decision by the Configuration Change Authority. Any potential stakeholder in the proposed ECP or RFV shall be given an opportunity to provide input to CCB. The CCB shall provide to the Configuration Change Authority the impact on each functional area of the

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proposed action, a recommendation on approval or disapproval, and implementation instructions on approved actions.

5.5.10 Configuration Management Officer (CMO) Requirements. The CMO or other designated person shall ensure the following are accomplished:

a. All configuration actions are logged into the CSA system and reviewed in a timely manner.

b. All potential stakeholders are notified of the pending change action and given the opportunity to participate in the CCB evaluation.

ANSI/EIA-649B Principle CCM-5

c. All impacts are assessed to include cost, schedule, performance and logistics.

ANSI/EIA-649B Principle CCM-8

d. For approved actions, any implementation requirements are identified and completed.

e. The analysis and decision of the CCB evaluation are clearly, completely and accurately documented on the Configuration Control Board Directive (CCBD) and recorded in the CSA system.

ANSI/EIA-649B Principle CCM-7

5.5.11 Configuration Change Authority Requirements. The Configuration Change Authority shall assess the recommendation of the CCB representatives and provide a disposition based on the total lifecycle impact of the action to include cost, schedule, performance and logistics impact. The disposition of ECPs and RFVs will be one of the following categories:

a. Approved: The action is approved as submitted by the originator.

b. Approved as Modified: The action is approved with modification with rationale for the modification provided.

c. Disapproved: The action is disapproved with rationale for the disapproval provided.

d. Withdrawn: The action has been determined to be unnecessary, duplicative, submitted without adequate documentation or has been requested to be withdrawn by the submitter of the action.

e. Replaced by Revision: The action has been superseded in total by a revised (e.g. –R1) action.

5.5.12 Alternate Configuration Change Process. In lieu of the above standard configuration change process, an alternate process may be used as described below if agreed to by the acquiring and supplying activities. When using the alternate change process, the proposed revision to a document shall be prepared prior to, and submitted concurrently with, the ECP form. The document revision submitted with the ECP shall be complete with all necessary changes and be in a format suitable for immediate release upon approval (i.e. native CAD, Acrobat PDF, or other format agreed upon by the acquiring and supplying activities). The proposed revision to the document shall be clearly identified as such (either by having the statement “PROPOSED REVISION” or “DRAFT” affixed to the document, or through other means to prevent the document from being mistaken for an approved revision). The changes from the previous revision to the proposed revision shall be clearly delineated through highlighting, layers, attached documents or other means which show the “from-to” state of the revision. Use of the NOR and ERR forms under the alternate process are not required. (See figure 4 for comparison of standard and alternate change processes).

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5.5.12.1 Approval and Release of Changes. The approval of the ECP under the alternate change process constitutes both the approval of the change and the approval to release the new revision.

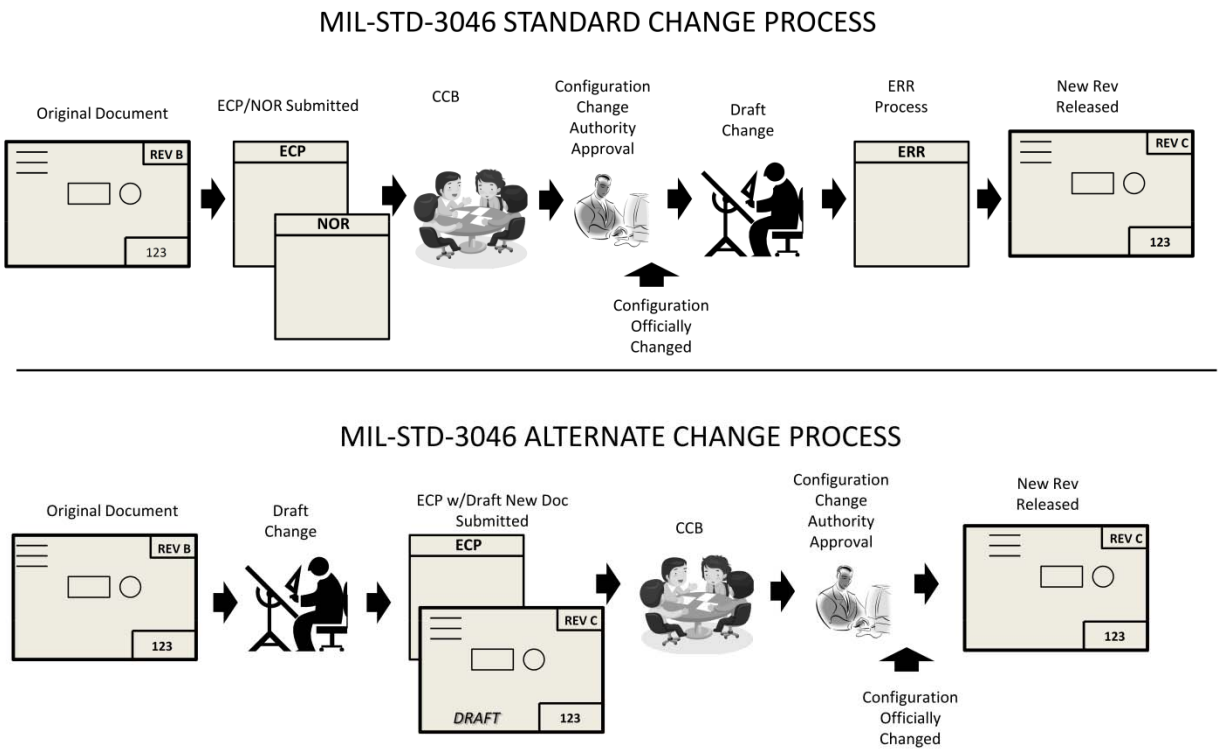

FIGURE 4. Change process comparison.

ANSI/EIA-649B Principle CSA-2

5.6 Configuration Status Accounting (CSA). The supplying activity shall implement a CSA system per the requirement of this standard unless otherwise specified by the contract. The CSA system shall maintain a record of all functional, allocated and product configuration documentation and baselines. The CSA system shall meet the requirements below and Appendix F, unless otherwise specified by the contract:

a. Identify the approved configuration documentation and identifier(s) associated with each CI/component.

b. Record the structure and hierarchy of each CI/component and its documentation.

c. Record and report the status of proposed engineering changes and variances from initiation to final approval/contractual implementation.

d. Record and report the results of configuration audits to include the status and final disposition of identified discrepancies or comments.

e. Record and report implementation status of authorized changes and variances.

f. Provide the traceability of all changes from the original baseline configuration documentation to

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the current approved baseline information.

g. Provide configuration status of the as-design configuration, and if necessary and required by the contract, the as-built and/or as-maintained configurations.

ANSI/EIA-649B Principle CSA-3

h. Maintain necessary metrics to ensure an effective and timely change management process is occurring.

5.6.1 Retention of Historical Database. The CSA system shall retain a complete historical record of the information defining the CI and associated components and shall be capable of generating historical configuration baseline information at major points in the lifecycle of the product.

5.6.2 Maintenance of Configuration Documentation. The supplying activity shall control and maintain the master of the approved configuration documentation which establishes the baseline unless otherwise specified in the contract. All approved changes to the baseline shall be provided to the maintaining activity of the documents for update and timely release of subsequent revisions via the engineering release process. This documentation shall be maintained until such time that it is transitioned to another activity. Upon transition to another activity, all baseline documentation, revision history, and any ongoing configuration change activity, shall transition to the succeeding activity.

5.6.3 Duplicates of Controlled Documents. Configuration documents shall be stored and maintained in their respective master repository. Duplicates of such documents shall not be stored or maintained in other repositories except when procedures are established to ensure such documents in-sync with the master repository, or when such documents are clearly identified as uncontrolled copies.

5.6.4 Reporting Accomplishment of Retrofit Changes. When required by the contract, the supplying activity shall document in the CSA system, the incorporation of all retrofit changes to those units identified as having retrofit accomplished (i.e. as-maintained configuration).

5.6.5 Problem/Issue/Improvement Report (PIR). A problem/issue/improvement reporting process shall be implemented if required by the contract or if necessary to ensure adequate identification and control of issues related to the configuration baseline. The PIR process shall ensure that detected problems, issues or requested feature changes/improvements are promptly reported, action is initiated, resolution is achieved, status is tracked and records maintained as necessary. After formal baseline, a PIR may be a precursor to an ECP, RFV or rework procedure preparation and submittal. The PIR process may be part of a quality assurance, engineering, manufacturing or other functional area process, provided those PIRs which result in configuration change activity have traceability between the PIR and configuration change action.

ANSI/EIA-649B Principle CVA-2

5.7 Configuration Verification and Audit. Configuration verification and audit shall be performed to assure the product has achieved specified requirements and the design of the product is adequately and accurately documented in configuration documentation. Verifying the documentation shall determine if it is adequate for its intended purposes and accurately reflects a design compliant with the product's functional and physical requirements. Verification and audit shall ensure the product can be produced from its product configuration documentation and meet all requirements without further design effort. Verification and audit shall also ensure approved changes to a configuration baseline are incorporated and verified as appropriate.

5.7.1 Supplying Activity Participation and Responsibilities. The supplying activity shall be

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responsible for the conduct of verifications to ensure the product design meets the functional and allocated requirements as stated in the FCD and ACD. In addition, the supplying activity is responsible for verifying the PCD is a clear, complete and accurate representation of the product and the design intent. The supplying activity shall participate in and support, acquiring activity conducted configuration audits IAW the following requirements and as stated in the contract.

5.7.1.1 Sub-contractors and Suppliers. The supplying activity shall ensure sub-contractors, vendors, and suppliers conduct verifications as necessary and participate in acquiring activity configuration audits, as appropriate.

5.7.1.2 Supplying Activity Requirements. The supplying activity shall be responsible for establishing the schedule for each configuration audit in consonance with the program milestone schedule as required by the contract. In addition, the supplying activity shall:

a. Ensure that each configuration audit schedule is compatible with the availability of the necessary information and contract articles, e.g., system engineering data, trade study results, producibility analysis results, risk analysis results, specifications, manuals, drawings, reports, hardware, software, or mockups.

b. Record and track all discrepancies and action items identified by the audit team until closed out or resolved (See Appendix G for a sample Audit Action Item List).

ANSI/EIA-649B Principle CVA-3

5.7.2 Types of Audits. Two types of configuration audits are required depending on the phase of the lifecycle and contract requirements as described below.

5.7.2.1 Functional Configuration Audit (FCA). A Functional Configuration Audit shall be conducted for each CI and for the overall system, as required by the contract. The objective of the FCA is to verify the CI's performance against its approved functional and allocated configuration documentation. Test data for the FCA shall be from test of the configuration of the prototype or preproduction article. If a prototype or preproduction article is not produced, the test data shall be that collected from test of the first production article. Subject to prior acquiring activity approval, the FCA for complex items may be conducted in increments. In such cases, a final FCA may be conducted to ensure that all requirements of the FCA have been satisfied.

5.7.2.1.1 Supplying Activity Responsibility During FCA. Prior to the audit date, the supplying activity shall provide the following information to the acquiring activity:

a. Identification of items to be audited to include: 1) Nomenclature; 2) Specification identification number; 3) CI identification, 4) Source responsible for item (i.e. prime contractor or sub-contractor).

b. Current functional and allocated configuration documentation including approved, unincorporated ECPs and RFVs.

c. A matrix for each CI that identifies the requirements of the FCD and ACD; a cross reference to the test procedures, reports, results of demonstrations, inspections, and analyses for each requirement that proves whether the requirement was met or not met; and identifies any deficiency in meeting those requirements and the planned corrective action.

d. Copies of any test procedure, report, demonstration, inspection and analysis referenced in subparagraph c above.

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5.7.2.1.2 Post-audit Actions. After the FCA is completed, the supplying activity shall record the results and residual tasks of the FCA for each CI audited. An FCA certification shall be prepared and submitted if required by the contract. A sample FCA certification package is shown in Appendix G. The supplying activity will be notified by the acquiring activity of acceptance of the FCA, of FCA status and discrepancies to be corrected, or rejection of the FCA and requirements for re-accomplishment.

5.7.2.2 Physical Configuration Audit (PCA). A Physical Configuration Audit shall be conducted for each CI and related component as required by the contract. The PCA shall verify the design documentation is a clear, complete and accurate representation of the product. Satisfactory completion of a PCA is required to establish the formal product baseline. The PCA shall include a detailed audit of engineering drawings, MBD datasets, specifications, technical data, design documentation, and associated listings which define each CI/component. The PCA shall also determine that the quality assurance testing and acceptance requirements of the product configuration documentation are adequate to ensure end item performance. The PCA shall not be started unless the FCA for the item has already been accomplished or is being accomplished concurrent with the PCA. Subject to prior acquiring activity approval, the PCA for complex items may be conducted in increments. After successful completion of the audit and the establishment of a product baseline, all subsequent changes to the product configuration documentation shall be done by formal change control only. Additional PCAs may be performed during subsequent production if required (e.g. if there has been a long gap in production or if a new manufacturer for the product is established). For software, the product specification, Interface Design Document, and Version Description Document (VDD) shall be a part of the PCA.

5.7.2.2.1 Supplying Activity Responsibility. Prior to the audit date, the supplying activity shall provide the following information to the acquiring activity:

a. Identification of items to be audited by nomenclature and identifiers (CAGE Code, part number, document number, specification number, serial numbers (if applicable), etc.)

b. Current product configuration documentation (including unincorporated ECPs and approved variances) and other documentation which shall consist of:

(1) CI product specification.

(2) Product breakdown structure.

(3) All product design documents.

(4) A matrix for each CI that identifies any deficiency identified in the supplying activity verification activities.

(5) Copies of any test procedure, report, demonstration, inspection and analysis as supporting documentation for subparagraph 4 above.

c. A PCA Checklist (Appendix G).

5.7.2.2.2 PCA Requirements. The following actions shall be performed as part of each PCA unless otherwise stated in the contract:

a. Review the FCA results to ensure requirements are met and residual tasks from the FCA were accomplished.

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b. Review of records of baseline configuration for the CI by direct comparison with the supplying activity's engineering release system and change control procedures to verify that the released engineering data accurately defines the configuration produced.

c. Review of drawings, MBD datasets, specifications, associated lists or other documents which comprise the PCD to ensure they are a clear, complete and accurate representation of the configuration item’s design.

Review of all drawings, MBD datasets, specifications, associated lists or other documents which comprise the PCD to ensure they are a clear, complete and accurate representation of the configuration item's design.

d. Audit the software library, or similar internal support activity, to assure that it accurately identifies, controls, and tracks changes to the software and documentation. Audit the supplying activity's engineering release and change control system against the requirements in Appendix H to ascertain that the system is adequate to properly control the processing and formal release of engineering changes. The supplying activity's system shall meet the information and capabilities requirements of Appendix H as a minimum. The supplying activity's formats, systems, and procedures will be used.

e. CI acceptance test data and procedures shall comply with product specifications. The PCA team shall determine any acceptance tests to be re-accomplished, and reserves the right to have representatives of the acquiring activity witness any portion of the required audits, inspections, or tests.

f. As a minimum, the following actions shall be performed by the PCA team on each CSCI being audited:

(1) Review all documents which comprise the product specification for format and completeness.

(2) Review FCA minutes for recorded discrepancies and actions taken.

(3) Review the design descriptions for proper entries, symbols, labels, tags, references, and data descriptions.

(4) Compare detailed design descriptions with the software listings for accuracy and completeness.

(5) Examine actual CSCI delivery media (disks, tapes, etc.) to ensure conformance with the software requirements specifications.

(6) Review the annotated listings for compliance with approved coding standards.

(7) Review all required operation and support documents for completeness, correctness, incorporation of comments made at Test Readiness Review (TRR), and adequacy to operate and support the CSCI(s).

(8) Examine the related documentation to ensure that the relationship of the CSCI to the parts, components, or assemblies that store the executable forms of the CSCI is properly described. For firmware, ensure that the information completely describes the requirements for installation of the CSCI into the programmable parts or assemblies and that this information describes the requirements for verification that the installation has been properly implemented. Where follow-on acquisition of the

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firmware items is intended, ensure that the documentation has been accomplished to the level of detail necessary for the intended re-procurement.

(9) Demonstrate, using deliverable or acquiring activity owned support software, that each CSCI can be regenerated. The regenerated CSCI shall be compared to the actual CSCI delivery media to ensure they are identical.

5.7.2.2.3 Post-audit Actions. After the PCA is completed, the supplying activity shall record the results and residual tasks of the PCA for each CI audited. A PCA certification shall be prepared and submitted if required by the contract. The supplying activity will be notified in writing by the acquiring activity of acceptance or rejection of the PCA, of PCA status and discrepancies to be corrected, or rejection of the PCA and requirements for re-accomplishment.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended Use. The requirements of this standard should be tailored for application to programs involving items of various levels of complexity, phases of their lifecycle, and acquisition strategy

6.2 Acquisition Requirements. Acquisition documents should tailor and specify the specific CM functions, tasks, and requirements and the following:

a. Title, number, and date of this standard.

b. If required, the specific issue of individual documents referenced. (See 2.0)

c. A Statement of Work describing and tailoring the specific Configuration Management functions, tasks, and requirements.

d. A Contract Data Requirements List (CDRL) specifying the specific DIDs to be used, and the time, place, and frequency of data deliverables.

6.3 Data Requirements. This standard has been assigned an Acquisition Management Systems Control number authorizing it as the source document for the following Data Item Descriptions (DIDs). When it is necessary to obtain the data, the applicable DIDs should be listed on the Contract Data Requirements List (DD Form 1423).

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TABLE II. Data Item Descriptions.

CM Element	DID Number	DID Title
Plan/Mgt	DI-SESS-81875	Configuration Management Plan
	DI-SESS-81876	Interface Control Document (ICD)
Identification	DI-IPSC-81442	Software Version Description Document
	DI-SESS-81877	Baseline Description Document
	DI-SESS-81878	Product Baseline Index (PBLI)
	DI-CMAN-81254	Request for Nomenclature
	DI-SESS-81879	Configuration Item Documentation Recommendation
Control	DI-SESS-81880	Engineering Change Proposal (ECP)
	DI-SESS-81881	Notice Of Revision (NOR)
	DI-SESS-81882	Engineering Release Record (ERR)
	DI-SESS-81883	Request For Variance (RFV)
	DI-MISC-80508	CCB Minutes
Status Acct	DI-SESS-81884	Configuration Status Accounting Information
	DI-CMAN-81245	Engineering Change Installation Completion Notification (ICN)
	DI-SESS-81885	As-Built Configuration List
Ver/Audit	DI-SESS-81886	Configuration Audit Plan
	DI-SESS-81887	Configuration Audit Summary Report and Certification

The above DID's were current as of the date of this standard. The ASSIST database should be researched at https://assist.dla.mil to ensure that only current and approved DID's are cited on DD Form 1423.

6.4 Supersession History. Not Applicable.

6.5 Subject Term (keyword) Listing.

Baseline
Configuration Audit
Configuration Control
Configuration control board
Configuration documentation
Configuration identification
Configuration item
Configuration management plan
Configuration status accounting
Computer software configuration item
Engineering Change Proposal
ECP
Engineering release
Engineering release record
Functional Configuration Audit
Interface Control
Interface control working group
Notice of revision
Physical Configuration Audit
Request for Variance

6.6 Further Guidance. For further guidance refer to MIL-HDBK-61, ANSI/EIA-649, EIA-HNBK-649, IEEE 828, ISO 10007, and IEEE 12207.

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REQUIREMENTS FOR THE CONFIGURATION MANAGEMENT STRATEGY AND CONFIGURATION MANAGEMENT PLAN

A.1 GENERAL

A.1.1 Scope. This Appendix contains recommendations for the format and content preparation for the CM Strategy as described in paragraph 5.2.1 and the CM Plan as described in Paragraph 5.2.

A.1.2 Applicability. The provisions of this Appendix apply whenever the acquiring activity is required to develop a CM Strategy or the supplying activity is required to prepare a CM plan.

A.2 RECOMMENDED FORMAT FOR A CONFIGURATION MANAGEMENT STRATEGY

A.2.1 Cover Page. This page contains the document control number and revision identifier in the upper right-hand corner. In the center of the page, these words appear in the following format:

CM STRATEGY

FOR THE

[Project Name]

[Date of document - day month year]

Prepared for:
[Procuring Agency Name, Department Code]

Prepared by:
[Activity preparing the Strategy]

A.2.1.2 Record of Review and History page. This page includes the review and approval dates of all changes to the strategy.

A.2.1.3 Table of Contents. The Table of contents lists the title and page number of all titled paragraphs and subparagraphs. The Table of contents then list the title and page number of all Figures, Tables, and Appendices, in that order.

A.2.1.4 Section 1. Introduction. This section includes the project description and purpose of the CM strategy.

A.2.1.5 Section 2. Milestone Schedule. This section describes and graphically portrays the events and milestones for implementation of CM in phase with major program milestones and events throughout the lifecycle of the program.

A.2.1.6 Section 3. Configuration identification. This section describes the procuring activities' procedures and requirements for configuration identification.

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A.2.1.7 Section 4. Interface management. This section describes the significant interface requirements, to include interface with existing equipment, software, logistics support equipment, or other interface requirements.

A.2.1.8 Section 5. Configuration change management. This section describes the procuring activities' procedures and requirements for configuration change management.

A.2.1.9 Section 6. Configuration status accounting. This section describes the procuring activities' procedures and requirements for configuration status accounting.

A.2.1.10 Section 7. Configuration audits. This section describes the procuring activities' procedures and requirements for configuration audits.

A.2.1.11 Section 8. Data Management and Deliverables. This section describes the procuring activities' requirements for data management and data deliverables as required.

A.3 REQUIREMENTS FOR A CONFIGURATION MANAGEMENT PLAN

A.3.1 Content and format. The configuration management plan shall address the content described in this Appendix as applicable. The format of the plan is at the discretion of the supplying activity or as required by the contract.

A.3.2 Cover Page. This page contains the document control number and revision identifier in the upper right-hand corner. In the center of the page, these words appear in the following format:

CM PLAN
FOR THE
[Project Name or CI nomenclature and number]

CONTRACT NO. [contract number]

CDRL SEQUENCE NO. [CDRL number]

[Date of document - day month year]

Prepared for:
[Contracting Agency Name, Department Code]

Prepared by:
[Contractor name and address]
[CAGE code]

A.3.2.1 Record of Review and History page. This page includes the review and approval dates of all changes to the plan.

A.3.2.2 Table of Contents. The Table of contents lists the title and page number of all titled paragraphs and subparagraphs. The Table of contents then list the title and page number of all Figures, Tables, and Appendices, in that order.

A.3.2.3 Section 1. Introduction. This section includes the project description, purpose of CM Plan, scope and specific contractual applicability of the CM Plan to the project.

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A.3.2.4 Section 2. Reference Documents. This section describes any related or reference documents.

A.3.2.5 Section 3. Organization. This section describes the configuration management organization, authority, and the relationship between organizations.

A.3.2.6 Section 4. Configuration Management Phasing and Milestones. This section describes and graphically portray the events and milestones for implementation of CM in phase with major program milestones and events.

A.3.2.7 Section 5. Data Management. This section describes the methods for meeting the configuration management technical data requirements under the requirements of the contract.

A.3.2.8 Section 6. Configuration Identification. This section describes the supplying activities' procedures for meeting the requirements of section 5.3.

A.3.2.9 Section 7. Interface Management. This section describes the procedures for identification of interface requirements, establishment of interface control documents (ICDs) and participation in interface control working groups (ICWG).

A.3.2.10 Section 8. Configuration Change Management. This section describes the supplying activities' procedures for meeting the requirements of 5.5, including:

a. Designation and responsibility of the Configuration Change Authority;

b. Functions, responsibility, and authority of configuration control boards;

c. Classification and priority of changes, and the level of authority for change approval/concurrence;

d. Processing of Requests for Variances; Engineering Change Proposals, Value Engineering Change Proposals and Notices of Revisions.

e. Engineering Release Process.

A.3.2.11 Section 9. Configuration status accounting. This section describes the supplying activities' procedures for meeting the requirements of Section 5.6 and Appendix H, including:

a. The supplying activities' methods for collecting, recording, processing and maintaining data necessary to provide contractual status accounting information via reports and/or database access;

b. Description of reports/information system content related to, as applicable:

(1) Identification of current approved configuration documentation and configuration identifiers associated with each CI;

(2) Status of proposed engineering changes from initiation to implementation;

(3) Results of configuration audits; status and disposition of discrepancies;

(4) Status of requests for critical and major variances;

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(5) Traceability of changes from baselined documentation of each CI; and

(6) Effectivity and installation status of configuration changes to all CIs at all locations.

c. Identifying methods of access to information in status accounting information systems and/or frequency of reporting and distribution.

A.3.2.12 Section 10. Configuration Verification and Audits. This section describes the supplying activities' approach to meeting the requirements of Section 5.7, including plans, procedures, documentation, and schedules for functional and physical configuration audits; and format for reporting results of in-process configuration audits.

A.3.2.13 Section 11. Subcontractor control. This section describes the methods used by the supplying activity' to ensure subcontractor compliance with configuration management requirements.

A.3.2.14 Section 12. Other requirements. The following requirements shall also be addressed:

a. Personnel: Number and skills of configuration management staff.

b. Facilities: Administrative space, records storage and office equipment.

c. Information Systems: File servers and communication bandwidth to support internal and external users, internet/intranet access and control, back-up systems.

d. CM Related Tools: Project Data Management applications, software development tools and authoring software for drawings, MBD datasets, specifications and manuals.

e. Data Deliverables: Specifications, standards, MBD datasets, drawings, reports, and TDPs required as deliverables.

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INSTRUCTIONS FOR THE PREPARATION OF ENGINEERING CHANGE PROPOSALS UTILIZING DD FORM 1692

B.1 GENERAL

B.1.l SCOPE. This Appendix establishes uniform requirements for the preparation of the DD Form 1692, "Engineering Change Proposal". This Appendix is a mandatory part of the standard.

B.1.2 APPLICATION. The provisions of this Appendix apply whenever DD Form 1692 is utilized. The activity submitting the request for change shall prepare and submit DD Form 1692 together with one or more DD Form(s) 1695 (Notice of Revision) for each affected document. An authorized alternative to these forms is allowable if approved by both the supplying and acquiring activities. Copies of the DD forms shown in this standard are obtained from the DOD Forms Management Program at http://www.dtic.mil/whs/directives/infomgt/forms/.

B.2 PARAGRAPH NOT USED.

B.3 PARAGRAPH NOT USED.

B.4 PARAGRAPH NOT USED.

B.5 DETAILED REQUIREMENTS. Detailed instructions for completion of the DD Form 1692. Page 1 is required for all ECP submittals. Continuation Pages 2-7 are generally required for ECPs classified as Major and when necessary to fully describe the change and change impacts.

Block 1. Date submitted. Enter the submittal or preparation date of the ECP (e.g. 15 Apr 2010). Revised ECPs shall have the date of the revision entered.

Block 2. Procuring Activity Number (PAN). To be used by the procuring activity for entry of internal processing number if required.

Block 3. ECP No. Enter the originator internal ECP or tracking number if used.

Block 4. Title of Change. Enter a title of the recommended change.

Block 5. Class of ECP. Enter the ECP class.

Block 6. Priority. Enter the ECP Priority.

Block 7. ECP Type. Enter the ECP Type.

Block 8. Justification Code. Enter the Justification Code.

Block 9. Description of Change. Enter a description of the proposed change.

Block 10. Need for Change. Describe the need for change.

Block 11. Model/Type. Enter the model or type designation, e.g. M16, Mk48, F22, etc.

Block 12. System Designation. Enter the system designation, e.g. Rifle, Torpedo, Fighter, etc.

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Block 13. Affected Item Nomenclature. Enter the nomenclature of the specific item affected by the change, i.e. bracket assembly.

Block 14.a. Other External System Affected. If the proposed change impacts another system (e.g., interfacing system, training device, and test sets), check yes in this field.

Block 14.b. List other Systems Affected. If block 14a is checked yes, list other systems affected.

Block 15.a-c. All Lower or Higher Items Affected. If the change to the item affects a higher or lower level component or assembly, list the item nomenclature, part number, and NSN (if a stocked item) here.

Block 16a-f. Documents Affected. Enter the Document CAGE Code, Document No., Nomenclature, Current Rev, and NOR No. (BLK 16e.) of the affected document(s), i.e. specifications, drawings, MBD datasets, parts list, packaging data, quality assurance provisions, or other document being modified. If the Alternate Change Process is used, indicate the location of attachments of proposed documents in a format suitable for immediate release upon approval (BLK 16f).

Block 17. Baseline Affected. Enter the baseline affected.

Block 18. In Production. Check whether the item is in production.

Block 19. Effectivity. If necessary, enter the lot number, serial number, or date at which the change is to take effect.

Block 20. Effect on Production Delivery Schedule. Enter the effect on production delivery schedule as a result of approval or non-approval of the change.

Block 21.a. Recommend Retrofit to Existing Assets. Check YES if retrofit of existing assets (as-built or as maintained configurations) is recommended. Check NO otherwise.

Block 21.b. Describe Retrofit Requirements. If Block 21.a. is YES, describe retrofit requirements. Use continuation page if necessary.

Block 21.c. Cost Impact. Check YES if there is a cost impact to the ECP. Cost impact is any increase or decrease in cost as a result of the ECP. Impact may be on an instant, future, or concurrent contract; cost impact on a related or interfacing component; cost impact on life cycle logistics or acquisition; or any other life cycle cost impact.

Block 21.d. Describe Cost Impact. If Block 21.c. is YES, describe cost impacts. Use either pages 2-7 of ECP form, or additional attachment to ECP to describe cost impact.

Block 22.a-b. Contract Information. Enter the contractor name and contract no./line item.

Block 23.a-c. Contracting Officer: Enter the name, phone no. and email of procuring contracting officer.

Block 24.a-e. Originator. Enter originator name, address, phone no., email, and CAGE Code of the originator.

Block 24.f-h. Submitting Activity. Enter the submitting activity and the signature, name and title of the individual authorized to submit the change.

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Block 25.a-d. Recommendations. Enter the recommended disposition, name, title, signature, and date signed.

Block 26.a-d. Disposition. The Configuration Change Approval Authority shall enter the final disposition, name, title, signature, and date signed.

Block 27.a-c. Activity Accomplishing Revision Upon New Revision Release. Once new revision(s) have been prepared in accordance with the approved change and released via ERR or other means, the activity accomplishing new revision release(s) shall sign and date here.

Instructions associated with Page 2 of ECP continuation form, Effects on Functional/Allocated Configuration Documentation. The information for these Blocks is to be completed only if the proposed change affects the system specification or the item development specification(s). If a separate product function specification is used, effects on such specification of changes proposed after the product baseline has been established shall be described as required by Block Number 37 through 50.

PAN and ECP numbers for all continuation pages. Enter the same PAN number in Block 2 and ECP number as in Block 12 of DD Form 1692 (Page 1).

Block 28. Other systems affected. Insert data when Block 14a of DD Form 1692 is checked "yes".

Block 29. Other contractors/activities affected. Identify the other contractors or Government activities which will be affected by this engineering change.

Block 30. Configuration items affected. Enter the names and numbers of all CIs, maintenance and operator training equipment, and support equipment affected.

Block 31. Effects on performance allocations and interfaces in system specification. Describe the changes in performance allocations and in the functional/physical interfaces defined in the system specification.

Block 32. Effects on employment, integrated logistic support, training, operational effectiveness, or software.

a. Hardware: Describe the effects of the proposed change on employment, deployment, logistics, and/or personnel and training requirements which have been specified in the approved system and/or CI specifications, including any changes or effects on the operability of the system. In particular, there shall be an entry detailing any effect on interoperability.

b. CSCIs: Enter the following information as applicable to the degree of design development of the CSCI at the time of ECP submission:

(1) Identify any required changes to the database parameters or values, or to database management procedures;

(2) Identify and explain any anticipated effects of the proposed change on acceptable computer operating time and cycle-time utilization;

(3) Provide an estimate of the net effect on computer software storage; and,

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(4) Identify and explain any other relevant impact of the proposed change on utilization of the system.

Block 33. Effects on configuration item specifications. The effect(s) of the proposed change on performance shall be described in quantitative terms as it relates to the parameters contained in the CI development specifications. (See MIL-STD-961)

Block 34. Developmental requirements and status.

a. Hardware: When the proposed engineering change requires a major revision of the development program (e.g., new prototypes, additional design review activity, tests to be re-accomplished), the nature of the revised or modified development program shall be described in detail, including the status of programs already begun.

b. CSCIs: The contractor shall identify the scheduled sequence of computer software design and test activities which will be required. ECPs initiated after preliminary design which affects the FBL and/or the ABL shall identify, as appropriate, significant requirements for computer software redesign, recoding, repetition of testing, changes to the software engineering/test environments, special installation, adaptation, checkout, and live environment testing. In addition, the specific impact of these factors on approved schedules shall be identified. The impact of the software change on the hardware design and input/ output cabling shall also be detailed.

Block 35. Trade-offs and alternative solutions. A summary of the various solutions considered shall be included with an analysis showing the reasons for adopting the solution proposed by the ECP.

Block 36. Date by which contractual authority is needed. Enter the date contractual authority will be required in order to maintain the established schedule. Instructions associated with ECP Continuation page 3, Effects on product configuration documentation, logistics and operations. Certain information required for these blocks may have been required in Blocks 1 through 36 or does not apply to computer software. When this information has already been supplied, a cross-reference to such information will be adequate.

a. Hardware: If any specific logistic interoperability factors are affected, the contractor shall provide information detailing the possible impact on the operational configuration on an attached page.

b. CSCIs: The software engineering and test environments are usually not affected by changes in the product configuration of a CSCI. In Block 42, the contractor shall provide information about the status of the software redesign and retesting effort. There shall also be a review of the intent of Blocks 40, 41, 45, 46, 47 and 49, to document CSCI impacts in these areas.

Block 37. Effect on product configuration documentation or contract. The effects on the approved CI product specifications shall be described by reference to the NORs or other enclosure(s) which cover such proposed text changes in detail. The effects on elements such as performance, weight and moment which are covered in the enclosure(s), shall be indexed by proper identification adjacent to the factor affected. The effects on drawings, when not completely covered on Page 1, shall be described in general terms by means of a referenced enclosure. Such enclosure may consist of a list of enclosed NORs if submittal of an NOR for each drawing affected is a requirement of the contract. Indicate any technical data submittal which is not provided for in the CDRL by means of a referenced enclosure. Address nomenclature change when applicable.

Block 38. Effect on Integrated Logistics Support (ILS) elements. The effects of the engineering change

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on logistic support of the item shall be indicated by checking the appropriate boxes. These effects shall be explained in detail on an enclosure indexed by appropriate identification adjacent to the subject under discussion. The information required shall indicate the method to be used to determine the integrated logistic support plans and items which will be required for the support of the new configuration as well as retrofitting previously delivered items to the same configuration. The following shall be covered as applicable:

a. Effect(s) on schedule and content of the ILS Plan.

b. Effect(s) on maintenance concept and plans for the levels of maintenance and procedures.

c. System and/or CI Logistics Support Analysis (LSA) tasks to be accomplished and LSA data requiring update wherever it exists in the contract.

d. Extension/revision of the interim support plan.

e. Spares and repair parts that are changed, modified, obsolete or added, including detailed supply data for interim support spares.

f. Revised or new technical manuals.

g. Revised or new facilities requirements and site activation plan.

h. New, revised, obsoleted or additional Support Equipment (SE), test procedures and software. For items of SE and trainers which require change, furnish a cross reference to the related ECPs, and for any related ECP not furnished with the basic ECP, furnish a brief description of the proposed change(s) in SE and trainers.

i. Qualitative and quantitative personnel requirements data which identify additions or deletions to operator manpower in terms of personnel skill levels, knowledge and numbers required to support the CI as modified by the change.

j. New operator training requirements in terms of training equipment, trainers, and training software for operator courses. This information should include identification of specific courses, equipment, technical manuals, personnel, etc. required to set up the course at either the contractor or Government facility.

k. Qualitative and quantitative personnel requirements data which identify additions or deletions to maintenance manpower in terms of personnel skill levels, knowledge and numbers required to support the CI as modified by the change.

l. New maintenance training requirements in terms of training equipment, trainers and training software for maintenance courses. This information should include identification of specific courses, equipment, technical manuals, personnel, etc. required to set up the course at either the contractor or Government facility.

m. Any effect on contract maintenance that increases the scope or dollar limitation established in the contract.

n. Effects on packaging, handling, storage, and transportability resulting from changes in materials, dimensions, fragility, inherent environmental or operating conditions.

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o. Any effect on provisioning data such as part number or NSN changes, etc.

Block 39. Effect on operational employment. The effects of the engineering change of CI utilization shall be indicated by checking the appropriate factors and providing details by enclosures. Quantitative values shall be used whenever practicable but are required when reliability and service life are impacted. Survivability includes nuclear survivability.

Block 40. Other considerations. The effects of the proposed engineering change on the following shall be identified on an enclosure indexed by appropriate identification adjacent to the factor affected:

a. Interfaces having an affect on related items, (output, input, size, mating connections, etc.).

b. Other affected Equipment, Government Furnished Equipment (GFE) or Government Furnished Data (GFD) changed, modified or made obsolete.

c. Physical constraints. Removal or repositioning of items, structural rework, increase or decrease in overall dimensions.

d. Software (other than operational, maintenance, and training software) requiring a change to existing code and/or, resources or addition of new software.

e. Rework required on other equipment not included previously which will affect the existing operational configuration.

f. Additional or modified system test procedures required.

g. Any new or additional changes having an affect on existing warranties or guarantees.

h. Changes or updates to the parts control program.

i. Effects on lifecycle cost projections for the configuration item or program, including projections of operation and support costs/savings for the item(s) affected over the contractually defined life and projections of the costs/savings to be realized in planned future production and spares buys of the item(s) affected.

Block 41. Alternate solutions. A summary of the various alternative solutions considered, including the use of revised operation or maintenance procedures, revised inspection or servicing requirements, and revised part replacement schedules shall be included. The contractor shall provide an analysis of the alternatives, identify the advantages and disadvantages inherent in each feasible alternative approach, and show the reasons for adopting the alternative solution proposed by the ECP. When the contractor's analysis addresses new concepts or new technology, supporting data (to include LSA if contractually required) should be presented with the proposal to authenticate the trade-off analysis.

Block 42. Developmental status. When applicable, the contractor shall make recommendations as to the additional tests, trials, installations, prototypes, fit checks, etc., which will be required to substantiate the proposed engineering change. These recommendations shall include the test objective and test vehicle(s) to be used. The contractor shall indicate the development status of the major items of GFE which will be used in conjunction with the change and the availability of the equipment in terms of the estimated production incorporation point.

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Block 43. Recommendations for retrofit. When applicable, the contractor shall make recommendations for retrofit of the engineering change into accepted items with substantiating data, any impacts, and a brief description of the action required. Where retrofit is not recommended, an explanation of this determination shall be provided. Reference shall be made to any enclosure required to state recommended retrofit effectivity (See Block 23a).

Block 44. Work-hours per unit to install retrofit kits. Complete Blocks 44a through 44d to show the amount of work which must be programmed for various activities to install retrofit kits. Estimate work-hours to install retrofit kits.

Block 45. Work-hours to conduct system tests after retrofit. Enter the work-hours required to test the system or the item following installation of the retrofit kit.

Block 46. This change must be accomplished before, with or after the following changes. Where engineering changes must be incorporated in a specific sequence in relation to the proposed change, such sequence should be specified.

Block 47. Is contractor field service engineering required? Check applicable box. If "yes" attach proposed program for contractor participation.

Block 48. Out of service time. Estimate the total time period from removal of the equipment from operational service until equipment will be returned to operational status after being retrofitted.

Block 49. Effect of this ECP and previously approved ECPs on item. The contractor shall summarize the cumulative effect upon performance, weight, electrical load, etc., of this ECP and previously approved ECPs when design limitations are being approached or exceeded.

Block 50. Date contractual authority needed. The contractor shall provide the date by which contractual authority to proceed is needed to maintain the estimated effectiveness specified in the ECP and provide concurrent ILS and logistics support item deliveries.

Instructions associated with Page 4, estimated net total cost impact. Block 51 is intended as the summary of the estimated net total cost/savings impact of a single ECP. In Blocks 51a through d, each cost factor associated with the ECP shall be considered as to whether such cost or portion thereof under the subject contract is recurring or nonrecurring. Enter cost savings in columns (a) and (d) as applicable, using entries in the "unit" and "quantity" columns when appropriate. Savings shall be enclosed with parentheses. Other costs/savings to the acquiring activity resulting from approval of this ECP shall be entered in column (f) to the extent these costs can be determined by the contractor. This estimate of cost impact will be used for planning purposes and for a cost reduction or VECP analysis as to the net saving that would result.

Block 51. Estimated Costs/Savings Summary, Related ECPs.

Block 51a. Production costs/savings. Enter the estimate of costs/savings applicable to production of the CI resulting from incorporation of the change. Show redesign costs for the CI in the block titled "engineering, engineering data revisions" when the item is in production. Enter the projected lifecycle costs/savings applicable to the planned production and spares buys of the item that are not yet on contract on the CONFIGURATION ITEM/CSCI line in Column (f). Enter the subtotal of production costs (both nonrecurring and recurring) in the fifth column.

Block 51b. Retrofit costs. Enter the estimate of costs applicable to retrofit of the item, including

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installation and testing costs. When Government personnel accomplish, or are involved in, the installation and/or testing activities, the estimated costs shall be entered in column (f) on the affected lines. Show design costs of the retrofit kit and data revision costs strictly related to retrofit when the CI is in production; show all redesign and data revision costs when the item is not in production. Costs of modifications required to existing GFE and subsequent testing also shall be shown. Enter the subtotal of retrofit costs in the fifth column. If some or all of the retrofit activities and costs will have to be deferred and placed on contract at a future date, show that deferred portion of the cost applicable to each line of Block 51b in column (f).

Block 51c. Integrated logistic support costs/ savings. Enter the estimated cost of the various elements of ILS applicable to the item covered by the ECP. On the line titled "interim support," estimated costs shall be entered based upon the period of time between initial installation/operation of the item (e.g., aircraft and tank) as modified by the ECP and Government attainment of support capability. Such "interim support" costs shall include costs estimates of contractor recommended/provided spares and repair parts, special support equipment, training equipment and personnel training program. On the line titled "maintenance manpower" shall be entered the estimated costs/ savings for the contracted maintenance support for the remainder of existing maintenance contracts. Other ILS costs/savings associated with ILS elements for which appropriate titles do not appear in Block 51c may be entered in place of a factor not used unless such costs are covered on DD Form 1692/4 (Page 5) or in related ECPs. Enter the subtotal of ILS costs/savings in column (e). Enter the operation and support portion of the lifecycle cost/savings on the subtotal line in column (f).

Block 51d. Other costs/savings. If there are other costs under the contract which do not fall under the production, retrofit or ILS headings, enter the total of such costs in Block 51d, column (e). If there are other additional costs to the Government which do not fall under the production, retrofit or ILS headings or under Block 51g, "coordination changes by Government, enter the total of such costs in Block 51d, column (f).

Block 51e. Subtotal costs/savings. Enter the subtotals of columns (a), (d), (e), and (f) on this line. The subtotal in column (e) shall be the sum of columns (a) and (d). This subtotal under the contract then shall be entered on the line so titled in column (f) and on DD Form 1692 (Page 1), Block 24.

Block 51f. Coordination of changes with other contractors. This term applies to interface changes to items other than GFE, and changes to GFE being covered under 51b. If such coordination changes are covered by related ECPs and summarized on DD Form 1692/4 (Page 5), the estimated costs thereof shall not be entered in Block 51f. However, if Page 5 is not required, or if costs of certain coordination changes are not tabulated on Page 5, an estimate of such costs shall be entered in Block 51f, when available.

Block 51g. Coordination changes by Government. Enter in this block an estimate of the cost to the Government of interface changes which must be accomplished in delivered items (e.g., aircraft, ships, and facilities) to the extent such costs are not covered in Block 51b or on DD Form 1692/4 (Page 5).

Block 51h. Estimated net total costs/savings. Enter the sum of all cost savings on column (f) and on DD Form 1692 (Page 1), Block 25.

Instructions associated with Page 5, Estimated costs/savings summary, related ECPs. Block 52 is intended as the summary of the estimated net total cost impact of both the package of related ECPs and other associated new requirements which are needed to support the modified items. A few revised requirements for ILS, such as ILS plans and maintenance concepts do not appear as headings in Block 51. When only a single ECP is involved, these additional costs for revision of ILS plans, etc. should be shown

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in Block 51 under the ILS heading, and Block 52 may be omitted.

a. Responsibility for preparation:

(1) Prime contractor. The prime contractor shall summarize the costs/savings of all related ECPs for which the contractor is responsible in Block 52. If there is no system integrating contractor, the prime contractor submitting the basic ECP shall include the costs of related ECPs being submitted by other affected contractors to the extent such information is available.

(2) System integrating contractor. When a system integrating contractor (or coordinating contractor) has contractual responsibility for ECP coordination, the contractor shall summarize the costs of related ECPs of the several primes involved in an interface or interrelated ECP on DD in Block 52 and shall attach it to the ECP package.

b. Summarization techniques. The costs of certain related ECPs are entirely ILS costs. Thus costs of ECPs for trainers, other training equipment and SE shall be listed in total under the "ILS costs" heading. Other ECPs (applicable to weapons, aircraft, tanks, subsystems thereof) shall be split into the four subtotals of "production," "retrofit," "ILS," and "other costs" for entry in Block 52. The sum of the four subtotals attributed in Block 52, column (c), to an individual ECP should agree with the subtotal of costs/savings under contract, line e, column (e) of Block 51 of that ECP. Cost breakdowns should be arranged in such manner that costs/savings are neither included more than once on the summary nor omitted. The purpose of the grouping on the cost summary is to arrive at a total ILS cost, and a net total cost of all actions for the complete group of related ECPs.

c. Software changes only. Block 52 shall not apply in the case where all related ECPs being summarized refer to software changes only. However, Block 52 shall be provided with the ECP detailing the summary of the individual CSCI costs/savings for each of the related ECPs, grouped by the cost areas, and providing the total costs/savings for all of the related software ECPs.

Block 52a. Production costs/savings. Enter the ECP number in column (b). Enter the production subtotals from columns (e) and (f) of Block 51a of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. in columns (c) and (d) respectively. (NOTE: Total costs of ECPs on trainers, training equipment, and SE are entered in Block 52c.)

Block 52b. Retrofit costs. Retrofit costs may be charged by the Government to production funds or maintenance funds or may be split between the two. The type of funds used depends upon the phase in the item's lifecycle. If the practice of the Government in this regard is known to the originator of Page 5, retrofit costs shall be entered in, or split between, Blocks 52b and 52.c.1, as appropriate. If such practice is unknown, enter in Block 52b the ECP number and the retrofit subtotals from the columns (e) and (f) of Block 51b for each applicable ECP.

Block 52c. ILS costs/savings. Enter retrofit costs in Block 52.c.1, if appropriate. Enter in Block 52.c.2 the ILS subtotals from columns (e) and (f) of Block 51c of each ECP applicable to weapons, aircraft, tanks, subsystems thereof, etc. Enter costs of ECPs for ILS items in Blocks 52.c.3, 4, 5 and 6. Enter costs of revision or preparation of ILS plans and LSA records for the CI or complete system in Block 52.c.7. Enter in Block 52.c.9 costs of revision of the interim support plan to the extent such costs have not already been covered under Block 51c of DD Form 1692/3 (Page 4) of the applicable ECPs. Enter in Blocks 52.c.10 through 52.c.18 the costs of all new requirements for ILS not covered by ECPs, such costs being broken down into nonrecurring and recurring costs, as appropriate, and totaled in column (c).

Block 52d. Other costs/savings. Enter in Block 52d the sum of the "other costs" totals from column (e)

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and (f) of Block 51d of each ECP applicable to weapons aircraft, tanks, subsystems thereof, etc. Enter the subtotals of columns (c) and (d) on this line. The subtotal under contract(s) shall then be entered on the line so titled in column (d).

Block 52e. Estimated net total costs/savings. Enter the sum of the preceding two lines of column (d).

Block 53. CAGE code. Enter the CAGE code for the activity originating the ECP.

Block 54. Configuration item nomenclature. Enter the information from Block 13.

Block 55. Title of change. Enter the information from Block 4.

Block 56. Milestone chart. Enter the symbols (see legend on form), as appropriate for the activity, to show the time phasing of the various deliveries of items, support equipment, training equipment, and documentation incorporating the basic and related ECPs. Enter other symbols and notations to show the initiation or termination of significant actions. All dates based upon months after contractual approval of the basic ECPs.

Instructions associated with Page 6 and 7, "Engineering Change Proposal (Hardware) and (Software). See 5.4.2.3.5 for information as to when Blocks 56 and 60 are required. (An equivalent format may be substituted, when appropriate.) Block 56 (for hardware-only ECPs) and Block 60 (for software-only ECPs) shall be used instead to summarize the detailed events schedule. If the ECP impacts both hardware and software, both Blocks 56 and 60 shall be included, as appropriate.

Block 57. CAGE Code. Enter the CAGE code for the activity originating the ECP.

Block 58. CSCI nomenclature. Enter the CSCI name and identification number if applicable, or authorized name and number of the CI(s) affected by the ECP.

Block 59. Title of change. Enter the information from Block 4.

Block 60. Milestone chart. Enter the symbols (See legend on form.), as appropriate for the activity, to show the time phasing of the various deliveries of items, training equipment and documentation incorporating the basic and related ECPs. Enter other symbols and notations to show the initiation or termination of significant actions. All dates are based upon months after contractual approval of the basic ECP.

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ENGINEERING CHANGE PROPOSAL (ECP)

1. DATE PREPARED (DD-MMM-YYYY)	2. PROCURING ACTIVITY NO. (PAN):	OMB No. 0704-0188
	3. ECP NUMBER:	

The public reporting burden for this collection of information is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Executive Services Directorate, Information Management Division, 4800 Mark Center Drive, Alexandria, VA 22350-3100 (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.**

4. TITLE OF CHANGE:

5. CLASS OF ECP: ☐ Major ☐ Minor ☐ Administrative

6. PRIORITY: ☐ E - Emergency ☐ U - Urgent ☐ R - Routine

7. ECP TYPE: ☐ P - Preliminary ☐ F - Formal

8. JUSTIFICATION CODE: ☐ B - Interface ☐ C - Compatibility ☐ D - Correction of Deficiency ☐ L - Logistics Support ☐ O - Operational or Product Improvement ☐ P - Production Stoppage ☐ R - Cost Reduction ☐ S - Safety ☐ V - Value Engineering

9. DESCRIPTION OF CHANGE:

10. NEED FOR CHANGE:

SAMPLE

11. MODEL/TYPE DESIGNATION *(e.g., M16)* :

12. SYSTEM/CONFIGURATION ITEM NOMENCLATURE *(e.g., Rifle)*:

13. AFFECTED ITEM NOMENCLATURE *(e.g., Bracket)*:

14.a. OTHER EXTERNAL SYSTEM AFFECTED? ☐ Yes ☐ No

b. IF BLOCK 14.a. IS YES, LIST OTHER SYSTEMS OR CONFIGURATION ITEMS AFFECTED:

15. ALL LOWER OR HIGHER ITEMS AFFECTED | **a. NOMENCLATURE:** | **b. PART NO.:** | **c. NSN:**

16. DOCUMENTS AFFECTED *(Continue on back if necessary)*

a. CAGE	b. DOCUMENT NO.	c. NOMENCLATURE	d. CURRENT REVISION	e. NOR NO.	f. REVISED DOCUMENT ATTACHED

17. BASELINE AFFECTED: ☐ Functional ☐ Allocated ☐ Product

18. IN PRODUCTION: ☐ Yes ☐ No

19. EFFECTIVITY *(Lot No., Serial No., Date)*:

20. EFFECT ON DELIVERY SCHEDULE:

21.a. RECOMMEND RETROFIT TO EXISTING ASSETS? ☐ Yes ☐ No

b. IF BLOCK 21.a. IS YES, DESCRIBE RETROFIT REQUIREMENTS:

c. COST IMPACT FROM ECP? ☐ Yes ☐ No

d. IF 21.c. IS YES, DESCRIBE:

22. CONTRACT | **a. CONTRACTOR:** | **b. CONTRACT NO./LINE ITEM:**

23. CONTRACTING OFFICER | **a. NAME:** | **b. TELEPHONE:** | **c. E-MAIL:**

24. ORIGINATOR | **a. NAME** *(Submitter)*: | **b. ADDRESS** *(Street, City, State, Zip Code)*:

e. ECP ORIGINATOR CAGE CODE: | **c. TELEPHONE:** | **d. E-MAIL:**

f. SUBMITTING ACTIVITY: | **g. AUTHORIZED SIGNATURE:** | **h. NAME AND TITLE** *(Authorizing Official)*:

25. BELOW TO BE COMPLETED BY THE APPROVING ACTIVITY

a. RECOMMENDATIONS: ☐ Approval ☐ Disapproval ☐ Approval with Modification

b. NAME and TITLE: | **c. DATE SIGNED** *(DD-MMM-YYYY)*: | **d. SIGNATURE:**

26.a. DISPOSITION *(Configuration Change Authority)* ☐ Approved ☐ Disapproved ☐ Approved with Modification

b. NAME and TITLE: | **c. DATE SIGNED** *(DD-MMM-YYYY)*: | **d. SIGNATURE:**

27. TO BE COMPLETED BY THE ACTIVITY ACCOMPLISHING REVISION UPON NEW REVISION RELEASE

a. NAME and TITLE: | **b. DATE NEW REVISION(S) RELEASED:** | **c. SIGNATURE:**

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ENGINEERING CHANGE PROPOSAL (ECP)

(Continuation Page)

2. PAN	PAGE OF
3. ECP NUMBER	

BLOCK(S) CONTINUED *(Specify by block number)*

SAMPLE

16. DOCUMENTS AFFECTED *(Continued)*

a. CAGE	b. Document No.	c. Nomenclature	d CURRENT REVISION	e. NOR NO.	f. REVISED DOCUMENT ATTACHED

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ENGINEERING CHANGE PROPOSAL (ECP), PAGE 2 *(For use if Block 17 is functional or allocated.)*	PAN: ECP NUMBER:	*OMB No. 0704-0188*

EFFECTS ON FUNCTIONAL/ALLOCATED CONFIGURATION DOCUMENTATION

28. OTHER SYSTEMS AFFECTED	29. OTHER CONTRACTORS/ACTIVITIES AFFECTED

30. CONFIGURATION ITEMS AFFECTED

31. EFFECTS ON PERFORMANCE ALLOCATIONS AND INTERFACES IN SYSTEM SPECIFICATION

SAMPLE

32. EFFECTS ON EMPLOYMENT, INTEGRATED LOGISTICS SUPPORT, TRAINING, OPERATIONAL EFFECTIVENESS OR SOFTWARE

33. EFFECTS ON CONFIGURATION ITEM SPECIFICATIONS

34. DEVELOPMENTAL REQUIREMENTS AND STATUS

35. TRADE-OFFS AND ALTERNATIVE SOLUTIONS

36. DATE BY WHICH CONTRACTUAL AUTHORITY IS NEEDED *(DD-MMM-YYYY)*

DD FORM 1692/2, 20130115

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ENGINEERING CHANGE PROPOSAL (ECP), PAGE 3 *(This page for use as necessary.)*	PAN: ECP NUMBER:	*OMB No. 0704-0188*

EFFECTS ON PRODUCT CONFIGURATION DOCUMENTATION, LOGISTICS AND OPERATIONS

(X)	FACTOR	ENCL.	PAR.	(X)	FACTOR	ENCL.	PAR.
	37. EFFECT ON PRODUCT CONFIGURATION DOCUMENTATION OR CONTRACT				**39. EFFECTS ON OPERATIONAL EMPLOYMENT**		
	a. PERFORMANCE				a. SAFETY		
	b. WEIGHT-BALANCE-STABILITY *(Aircraft)*				b. SURVIVABILITY		
	c. WEIGHT-MOMENT *(Other equipment)*				c. RELIABILITY		
	d. CDRL, TECHNICAL DATA				d. MAINTAINABILITY		
	e. NOMENCLATURE				e. SERVICE LIFE		
					f. OPERATING PROCEDURES		
	38. EFFECT ON INTEGRATED LOGISTICS SUPPORT (ILS) ELEMENTS				g. ELECTROMAGNETIC INTERFERENCE		
	a. ILS PLANS				h. ACTIVATION SCHEDULE		
	b. MAINTENANCE CONCEPTS, PLANS AND PROCEDURES				i. CRITICAL SINGLE POINT FAILURE ITEMS		
					j. INTEROPERABILITY		
	c. LOGISTICS SUPPORT ANALYSES						
	d. INTERIM SUPPORT PROGRAMS						
	e. SPARES AND REPAIR PARTS						
	f. TECH MANUALS				**40. OTHER CONSIDERATIONS**		
	g. FACILITIES				a. INTERFACE		
	h. SUPPORT EQUIPMENT				b. OTHER AFFECTED EQUIPMENT/GFE/GFP		
	i. OPERATOR MANPOWER/TRAINING				c. PHYSICAL CONSTRAINTS		
	j. OPERATOR TRAINING EQUIPMENT				d. COMPUTER PROGRAMS AND RESOURCES		
	k. MAINTENANCE MANPOWER/TRAINING				e. REWORK OF OTHER EQUIPMENT		
	l. MAINTENANCE TRAINING EQUIPMENT				f. SYSTEM TEST PROCEDURES		
	m. CONTRACT MAINTENANCE				g. WARRANTY/GUARANTEE		
	n. PACKAGING, HANDLING, STORAGE, TRANSPORTABILITY				h. PARTS CONTROL		
					i. LIFE CYCLE COSTS		
	o. PROVISIONING DATA						

41. ALTERNATE SOLUTIONS

SAMPLE

42. DEVELOPMENTAL STATUS

43. RECOMMENDATIONS FOR RETROFIT

44. WORK-HOURS PER UNIT TO INSTALL RETROFIT KITS

a. ORGANIZATION	b. INTERMEDIATE	c. DEPOT	d. OTHER

45. WORK-HOURS TO CONDUCT SYSTEM TESTS AFTER RETROFIT

46. THIS CHANGE MUST BE ACCOMPLISHED

☐ BEFORE ☐ WITH ☐ AFTER THE FOLLOWING CHANGES

47. IS CONTRACTOR FIELD SERVICE ENGINEERING REQUIRED? ☐ YES ☐ NO

48. OUT OF SERVICE TIME

49. EFFECT OF THIS ECP AND PREVIOUSLY APPROVED ECP'S ON ITEM

50. DATE CONTRACTUAL AUTHORITY NEEDED FOR *(DD-MMM-YYYY)*

a. PRODUCTION

b. RETROFIT

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ENGINEERING CHANGE PROPOSAL (ECP), PAGE 4 *(This page for use as necessary.)*	PAN: ECP NUMBER:	*OMB No. 0704-0188*

51. ESTIMATED NET TOTAL COST IMPACT *(Use parentheses for savings)*

FACTOR	COST / SAVINGS UNDER CONTRACT					Other Costs/ Savings to the Government (f)
	Non-Recurring (a)	RECURRING			Total (e)	
		Unit (b)	Quantity (c)	Total *(Recurring)* (d)		
a. PRODUCTION COSTS / SAVINGS						
(1) CONFIGURATION ITEM / CSCI						
(2) FACTORY TEST EQUIPMENT						
(3) SPECIAL FACTORY TOOLING						
(4) SCRAP						
(5) ENGINEERING, ENGINEERING DATA REVISION						
(6) REVISION OF TEST PROCEDURES						
(7) QUALIFICATION OF NEW ITEMS						
(8) SUBTOTAL OF PROD COSTS / SAVINGS						
b. RETROFIT COSTS						
(1) ENGINEERING DATA REVISION						
(2) PROTOTYPE TESTING						
(3) KIT PROOF TESTING						
(4) RETROFIT KITS FOR OPERATIONAL SYSTEMS						
(5) PREP. OF MWO/TCTO/SC/ALT/TD						
(6) SPECIAL TOOLING FOR RETROFIT						
(7) INSTALLATION - CONTRACTOR PERSONNEL						
(8) INSTALLATION - GOVERNMENT PERSONNEL						
(9) TESTING AFTER RETROFIT						
(10) MODIFICATION OF GFE/GFP						
(11) QUALIFICATION OF GFE/GFP						
(12) SUBTOTAL OF RETROFIT COSTS/SAVINGS						
c. INTEGRATED LOGISTICS SUPPORT COSTS/ SAVINGS						
(1) SPARES/REPAIR PARTS REWORK						
(2) NEW SPARES AND REPAIR PARTS						
(3) SUPPLY/PROVISIONING DATA						
(4) SUPPORT EQUIPMENT						
(5) RETROFIT KITS FOR SPARES						
(6) OPERATOR TRAINING COURSES						
(7) MAINTENANCE TRAINING COURSES						
(8) REVISION OF TECHNICAL MANUALS						
(9) NEW TECHNICAL MANUALS						
(10) TRAINING/TRAINERS						
(11) INTERIM SUPPORT						
(12) MAINTENANCE MANPOWER						
(13) COMPUTER PROGRAMS/DOCUMENTATION						
(14) SUBTOTAL OF ILS COSTS/SAVINGS						
d. OTHER COSTS/SAVINGS						
e. SUBTOTAL COSTS/SAVINGS						
(1) SUBTOTAL UNDER CONTRACT						
f. COORDINATION OF CHANGES WITH OTHER CONTRACTORS						
g. COORDINATION CHANGES BY GOVERNMENT						
h. ESTIMATED NET TOTAL COSTS/SAVINGS						

SAMPLE

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ENGINEERING CHANGE PROPOSAL (ECP), PAGE 5 *(This page for use as necessary.)*	PAN:	OMB No. 0704-0188
	ECP NUMBER:	

52. ESTIMATED COSTS/SAVINGS SUMMARY, RELATED ECP'S *(Use parentheses for savings)*

	CAGE CODE (a)	ECP NUMBER (b)	COST/SAVINGS UNDER CONTRACTS (c)	OTHER COSTS/SAVINGS TO GOVERNMENT (d)
a. PRODUCTION COSTS/SAVINGS *(Subtotal of Costs/Savings Elements from Page 4, item 4.a., applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
(1) SUBTOTAL PRODUCTION COSTS/SAVINGS				
b. RETROFIT COSTS *(Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
(1) SUBSTOTAL RETROFIT COSTS				
c. INTEGRATED LOGISTICS SUPPORT COSTS/SAVINGS REVISED REQUIREMENTS				
(1) ITEM RETROFIT *(If not covered under "b") (Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
(2) ILS SUBTOTAL *(Applicable to aircraft, ship, tank, vehicle, missile or its subsystem)*				
(3) OPERATOR TRAINER *(Net total cost/saving from each ECP covering operator trainer)*				
(4) MAINTENANCE TRAINER *(Net total cost/saving from each ECP covering maintenance trainer)*				
(5) OTHER TRAINING EQUIPMENT				
(6) SUPPORT EQUIPMENT *(Net total cost/saving from each ECP on support equipment)*				
(7) ILS PLANS				
(8) MAINTENANCE CONCEPT, PLANS, SYSTEM DOCUMENTS				
(9) INTERIM SUPPORT PLAN				

NEW REQUIREMENTS	CAGE CODE	NON-RECURRING COSTS	RECURRING COSTS UNIT	RECURRING COSTS QTY	RECURRING COSTS TOTAL		
(10) PROVISIONING DOCUMENTATION							
(11) OPER TRNR/TRNG DEVICES/EQUIP							
(12) MANUALS/SPARES, REPAIR PARTS *(For (11))*							
(13) MAINTENANCE TRNR/TRNG DEVICES/EQUIPMENT							
(14) MANUALS/SPARES, REPAIR PARTS *(For (13))*							
(15) SUPPORT EQUIPMENT							
(16) MANUALS *(For (15))*							
(17) PROVISIONING DOCUMENTATION *(For (15))*							
(18) REPAIR PARTS *(For 15))*							
(19) SUBTOTAL ILS COSTS/SAVINGS *(Sum of c(1) through c(18))*							

	CAGE CODE	ECP NUMBER		
d. OTHER COSTS/SAVINGS *(Total from page 4, item 4.d., or related ECP's)*				
(1) TOTAL OTHER COSTS/SAVINGS				
(2) SUBTOTAL OF COLUMNS				
(3) SUBTOTAL UNDER CONTRACT				
e. ESTIMATED NET TOTAL COSTS/SAVINGS *(a + b + c + d)*				

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ENGINEERING CHANGE PROPOSAL (ECP) (HARDWARE), PAGE 6 *(This page for use as necessary.)*	PAN: ECP NUMBER:	*OMB No. 0704-0188*

53. CAGE CODE	54. CONFIGURATION ITEM NOMENCLATURE	55. TITLE OF CHANGE

56. DATE AUTHORIZATION TO PROCEED RECEIVED BY CONTRACTOR *(DD-MMM-YYYY)* →

S START DELIVERY | C COMPLETE DELIVERY | △ PROGRESS POINT

	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
a. CONFIGURATION ITEM	(1) Production																																				
	(2) Tech Manuals																																				
	(3) Retrofit																																				
	(4) MWO/TCTO/SC/ALT/TD																																				
	(5) Spares/Repair Parts																																				
b. SUPPORT EQUIPMENT	(1) Production																																				
	(2) Tech Manuals/Prog. Tapes																																				
	(3) Retrofit																																				
	(4) MWO/TCTO/SC/ALT/TD																																				
	(5) Repair Parts																																				
c. TRAINER	(1) Operator																																				
	(2) Maintenance																																				
	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

SAMPLE

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ENGINEERING CHANGE PROPOSAL (ECP) (SOFTWARE), PAGE 7 *(This page for use as necessary.)*	PAN: ECP NUMBER:	*OMB No. 0704-0188*

57. CAGE CODE	58. COMPUTER SOFTWARE ITEM NOMENCLATURE	59. TITLE OF CHANGE

60. DATE AUTHORIZATION TO PROCEED RECEIVED BY CONTRACTOR *(DD-MMM-YYYY)* → △ ◇S **START DELIVERY** ◇C **COMPLETE DELIVERY** △ **PROGRESS POINT**

	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
a. CONFIGURATION ITEM	(1) Software Engineering																																				
	(2) Software Documentation																																				
	(3) Software Replication																																				
	(4) Software Distribution																																				
b. SUPPORT EQUIPMENT	(1) Software Engineering Environment Upgrade																																				
	(2) Software Test Environment Upgrade																																				
c. TRAINER	(1) Operator																																				
	(2) Maintenance																																				
	NO. OF MONTHS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

SAMPLE

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INSTRUCTIONS FOR THE PREPARATION OF NOTICE OF REVISION UTILIZING DD FORM 1695

C.1 GENERAL

C.1.l SCOPE. This Appendix establishes uniform requirements for the preparation of the DD Form 1695, "Notice of Revision". This Appendix is a mandatory part of the standard.

C.1.2 APPLICATION. The provisions of this Appendix apply whenever DD Form 1695 is utilized as part of an Engineering Change Proposal submitted under the standard change process. Submittal of NORs is not required when submitting changes under the alternate change process described in paragraph 5.5.12. Copies of the DD forms shown in this standard are obtained from the DOD Forms Management Program at http://www.dtic.mil/whs/directives/infomgt/forms/.

C.2 GENERAL REQUIREMENTS.

C.2.1 Use of DD Form 1695. The activity submitting the request for change shall prepare and submit DD Form 1695 (Figure D-1) together with copies of the affected document. An alternative to these DD Form 1695 is allowable if approved by both the supplying and acquiring activities.

C.2.2 Notices of Revision may be submitted in one of the following formats:

a. DD Form 1695 describing the current and proposed data in block 13 of the NOR.

b. DD Form 1695 describing the current and proposed data on attachments to the NOR. Attachments to the NOR may be in the form of redlined drawings, "from"-"to" drawings or other documents.

C.2.3 Regardless of the method used to document the proposed change, the description of the proposed change must be clear, complete, and unambiguous, with both the original information and the proposed information clearly discernible.

C.3 Paragraph not used.

C.4 Paragraph not used.

C.5 DETAILED REQUIREMENTS.

Detailed instructions for completion of the DD Form 1695 are as follows.

Block 1. Date submitted. Enter the submittal or preparation date of the NOR (e.g. 15 Apr 2010).

Block 2. PAN. To be used by the procuring activity for entry of internal processing number if required.

Block 3. ECP No. Enter the originator's ECP or tracking number if required.

Block 4. NOR No. Enter the NOR number. Number shall be enter in an x of y format (e.g. 1 of 3), with x being the current NOR, and y the total number of NORs in the ECP submittal.

Block 5.a-e. Originator Information. Enter the originator CAGE Code, name, address, email and phone number of the originator of the NOR.

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Block 6. Title of Affected Document. Enter the formal title of the affected document.

Block 7. Document CAGE Code. Enter the Cage Code of the affected document.

Block 8. Document No. Enter the document number of the affected document.

Block 9.a. Revision. Enter the current (Block 9a) revision information of the document affected. Enter the PAN(s) and/or ECP No(s) (Block 9b) of any other approved outstanding un-incorporated ECPs for the current revision of this document.

Block 9.b. Other Unincorporated NORs. If there are other NORs approved against this revision of document but not yet incorporated, list those here.

Block 10. Sheet No. Enter the NOR sheet number when multiple NORs or continuation sheets are written against the same document.

Block 11. Configuration item (or system) to which ECP applies. Enter the item or system name to which the ECP applies.

Block 12. Description of revision. Describe the intended change. The description of change shall be clear, complete and explicit and be in a **CHANGE FROM** "*original data*" to **CHANGE TO**: "*recommended data*" format.

Block 13. Remarks/Rational. Indicate any remarks or rationale for this change information as necessary.

Block 14.a-b Check 14.a if the approved and signed NOR may be used for manufacturing purposes. Check block 14b if the revised document must be received before manufacturing may incorporate the change.

Block 15.a-e. Activity authorized to approve change. This block will be completed by the Configuration Change Approval Authority after determination of final disposition on the ECP. Signature of the Configuration Change Approval Authority constitutes the official change to the configuration baseline documentation.

Block 16.a-d. Activity accomplishing revision. This block will be completed after the new revised document prepared per the instructions of this NOR is released.

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NOTICE OF REVISION (NOR)

OMB No. 0704-0188

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PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT ISSUING CONTRACTING OFFICER FOR THE CONTRACT/PROCURING ACTIVITY NUMBER LISTED IN ITEM 2 OF THIS FORM.

1. DATE PREPARED *(DD-MMM-YYYY)*	2. PROCURING ACTIVITY NO. (PAN)	3. ECP NO.	4. NOR NO. OF

5. ORIGINATOR

a. CAGE CODE	b. TYPED NAME *(First, Middle Initial, Last)*	c. ADDRESS *(Street, City, State, Zip Code)*
d. TELEPHONE *(Incl. Area Code)*	e. E-MAIL ADDRESS	

6. TITLE OF AFFECTED DOCUMENT	7. DOCUMENT CAGE CODE	8. DOCUMENT NO.

9. REVISION

a. CURRENT	b. OTHER UNINCORPORATED NORs	10. NOR SHEET OF

11. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES

12. DESCRIPTION OF REVISION

SAMPLE

13. REMARKS/RATIONALE

14. TO BE COMPLETED BY THE APPROVING ACTIVITY

a. *(X one)*
- [ ] (1) Existing document supplemented by this NOR may be used in manufacture.
- [ ] (2) Revised document must be received before manufacturer may incorporate this change.

15.a. ACTIVITY AUTHORIZED TO APPROVE CHANGE	b. NAME *(First, Middle Initial, Last)*	
c. TITLE	d. SIGNATURE	e. DATE SIGNED *(DD-MMM-YYYY)*

16. THIS SECTION COMPLETED BY THE ACTIVITY ACCOMPLISHING REVISION UPON NEW REVISION RELEASE

a. NAME *(First, Middle Initial, Last)*	b. TITLE	c. REVISION COMPLETED *(Signature)*	d. DATE SIGNED *(DD-MMM-YYYY)*

DD FORM 1695, 20130115 PREVIOUS EDITION IS OBSOLETE. Adobe Professional 8.0

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NOTICE OF REVISION (NOR) *(Continuation Sheet)*	DATE PREPARED *(DD-MMM-YYYY)*	PAN	NOR SHEET OF
		ECP NO.	NOR NO.

12. DESCRIPTION OF REVISION

SAMPLE

13. REMARKS/RATIONALE

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NOTICE OF REVISION (NOR) (TABULATED)	1. DATE PREPARED (DD-MMM-YYYY)	2. PROCURING ACTIVITY NO. (PAN):	4. NOR NO. OF	OMB No. 0704-0188
		3. ECP NO.:		

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5. ORIGINATOR INFORMATION	a. CAGE CODE:	b. NAME:	c. ADDRESS *(Street, City, State, Zip Code)*:
d. TELEPHONE:	e. E-MAIL:		

6. TITLE OF AFFECTED DOCUMENT:	7. DOCUMENT CAGE CODE:	8. DOCUMENT NO.:	9. CURRENT REVISION:	10. NOR NO.:	11. CONFIGURATION ITEM (OR SYSTEM) TO WHICH ECP APPLIES:

12. DESCRIPTION OF REVISION:

SAMPLE

13. REMARKS/RATIONALE:

BELOW TO BE COMPLETED BY THE APPROVING ACTIVITY

14. *(X only one)*

☐ **a. EXISTING DOCUMENT SUPPLEMENTED BY THIS NOR MAY BE USED IN MANUFACTURE.**

☐ **b. REVISED DOCUMENT MUST BE RECEIVED BEFORE MANUFACTURING MAY INCORPORATE THIS CHANGE.**

15.a. ACTIVITY AUTHORIZED TO APPROVE CHANGE:

b. NAME AND TITLE *(Configuration Change Authority)*:	c. DATE SIGNED *(DD-MMM-YYYY)* :	d. SIGNATURE:

16. THIS SECTION COMPLETED BY THE ACTIVITY ACCOMPLISHING REVISION UPON NEW REVISION RELEASE

a. NAME AND TITLE:	b. DATE SIGNED *(DD-MMM-YYYY)* :	c. REVISION COMPLETED *(Signature)*:

DD FORM 1695-1 (Tabulated NOR), 20130115 Adobe Professional 8.0

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INSTRUCTIONS FOR THE PREPARATION OF ENGINEERING RELEASE RECORDS UTILIZING DD FORM 2617

D.1 GENERAL

D.1.1 Scope. This Appendix establishes uniform requirements for the preparation of the "Engineering Release Record".

D.1.2 Application. The provisions of this Appendix apply whenever the ERR is utilized to authorize use of new approved configuration documentation. Copies of the DD forms shown in this standard are obtained from the DOD Forms Management Program at http://www.dtic.mil/whs/directives/infomgt/forms/.

D.2 Paragraph not used.

D.3 Paragraph not used.

D.4 GENERAL REQUIREMENTS

D.4.1 DD Form 2617. DD Form 2617 is not a requirement of this standard and is provided for reference only. ERRs may be prepared in contractor format.

D.4.2 Engineering Release Record. The contractor shall use an ERR to authorize the use of configuration documentation that establishes the functional, allocated, and product baseline documents or changes an established configuration baseline document.

D.5 DETAILED REQUIREMENTS. Detailed instruction for completion of the ERR.

Block 1. ERR NO. Enter the unique ERR identification number or the number assigned by the Government.

Block 2. Date. Entry will not be made in Block 2 until completion of Block 13 (Approved by) is accomplished by an authorized official. The date of the completion of Block 13 will then be entered in Block 2.

Block 3. Procuring Activity Number. Enter the PAN of the ECP upon which this ERR is based.

Block 4. ERR Page no. Enter the page number of the ERR form.

Block 5. Baseline Established or Changed. Check appropriate block to identify the configuration baseline established or changed.

Block 6. Type of Release. Check appropriate block to indicate whether release is establishing a baseline (initial) or a change to the established configuration baseline.

Block 7. ECP Number. Enter the ECP number and the date approved on the lines provided, when applicable.

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Block 8. ECP Approval Date. Enter the Date the ECP was approved upon which this ERR is based.

Block 9. System or Configuration Item Nomenclature and Part Number. Enter the system or configuration item nomenclature and part number.

Block 10. Remarks or Miscellaneous. Enter the identification numbers of additional ECPS, when applicable. This block can also be used to note the item which the documentation identifies, e.g., system specification, minor item, configuration item, critical component, partial or complete releases, or any other remarks pertinent to the data being released.

Block 11. Data Released or Revised. Enter each document and sheet as a separate line entry. EXCEPTION: Multi-sheet documents will be entered as a single line entry when all sheets are maintained at the same revision.

Block 11.a. CAGE Code. Enter the CAGE Code of the document listed in Block 11c.

Block 11.b. Type. Enter document type code (commonly used acronym as shown in the following examples):

CODE	DOCUMENT TITLE (EXAMPLES)
3D	3-dimensional CAD Models
DR	Drawings
SQ	Quality Assurance Provisions
IL	Index List
EL	List of Inspection Equipment
DL	Data List
PL	Parts List
PS	Special Packaging Instructions
ED	List of Equipment - Depot Installed
EM	List of Equipment - Manufacturer Installed
ET	List of Equipment - Troop Installed
B-5	Development Specification
C-5	Product Specification
CPTPR	Computer Program Test Procedure
CPTS	Computer Program Test Specification
DBDD	Database Design Document
FSM	Firmware Support Manual
IDS	Interface Design Specification
IRS	Interface Requirements Specification
LCUG	LifeCycle Software Support Environment User's Guide
PDD	Preliminary Description Document
PDS	Program Design Specification
PPD	Program Package Document
PPS	Program Performance Specification
SPS	Software Product Specification
SRS	Software Requirements Specification
SS	System Specification
STD	Software Test Description
STPR	Software Test Procedure
TEMP	Test and Evaluation Master Plan
VDD	Version Description Document

Block 11.c. Number. Enter documents in a logical order by types of documents in ascending numerical and alpha-numerical sequence.

Block 11.d. Page of. Enter the particular page number of the total count of pages in Column 11e. No entry required for single page documents.

Block 11.e. Pages. The total count of pages comprising the document. No entry required for single page

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documents.

Block 11.f. Letter. Enter the new revision symbol to be issued for the document listed in Column 11c. For original documentation, enter a hyphen (-).

Block 11.g. Date. Enter the document date.

Block 11.h. Release.

(1) Initial Release (IR). Enter "X" if the document is being initially released.

(2) New Application Release (NAR). Enter "X" if the document has a new application.

Block 11.i. Change.

(1) Change (CH). Enter "X" for each document listed for which the revision level of an established baseline document is being changed.

(2) Cancellation (CAN). Enter "X" for each listed document which is to be deleted from an established configuration baseline.

Block 11.j. Other. For optional use.

Block 12. Submitted by. Enter typed, printed, or stamped name and signature of responsible drafting or engineering services contractor organization or engineering segment.

Block 13. Approved by. To be completed by the authorized acquiring activity official.

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ENGINEERING RELEASE RECORD (ERR)

OMB No. 0704-0188

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1. ERR NO.:	2. DATE PREPARED *(DD-MMM-YYYY)*:	3. PROCURING ACTIVITY NUMBER:	4. ERR PAGE NO. OF
5. BASELINE ESTABLISHED OR CHANGED: ☐ FUNCTIONAL ☐ ALLOCATED ☐ PRODUCT	6. TYPE OF RELEASE: ☐ INITIAL ☐ CHANGE	7. ECP NUMBER:	8. ECP APPROVAL DATE *(DD-MMM-YYYY)*:

9. SYSTEM/CONFIGURATION ITEM NOMENCLATURE:

a. AFFECTED ITEM NOMENCLATURE:	b. PART NUMBER:

10. REMARKS/MISCELLANEOUS:

SAMPLE

11. DATA RELEASED OR REVISED

a. CAGE CODE	DOCUMENT				REVISION		h. RELEASE		i. CHANGE		j. OTHER
	b. TYPE	c. NUMBER	PAGE of PAGES d.	e.	f. LETTER	g. DATE *(DD-MMM-YYYY)*	IR	NAR	CH	CAN	

12. SUBMITTED BY		13. APPROVED BY	
a. DATE *(DD-MMM-YYYY)*	b. TITLE AND SIGNATURE	a. DATE *(DD-MMM-YYYY)*	b. TITLE AND SIGNATURE

DD FORM 2617, 20130115

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INSTRUCTIONS FOR THE PREPARATION OF REQUEST FOR VARIANCE UTILIZING DD FORM 1694

E.1 GENERAL

E.1.l SCOPE. This Appendix establishes uniform requirements for the preparation of the DD Form 1694, "Request for Variance". This Appendix is a mandatory part of the standard.

E.1.2 APPLICATION. The provisions of this Appendix apply whenever DD Form 1694 is utilized to request a variance. Copies of the DD forms shown in this standard are obtained from the DOD Forms Management Program at http://www.dtic.mil/whs/directives/infomgt/forms/.

E.2 GENERAL REQUIREMENTS.

E.2.1 Use of DD Form 1694. The contractor shall prepare and submit DD Form 1694, Figure F-1, or an authorized alternative, to request variances from configuration documentation requirements.

E.2.2 Request for variance. The contractor shall request a variance when, prior to or after manufacture, it is necessary to depart temporarily from the applicable approved configuration documentation for a specific quantity of deliverable units. Normally, for the unit(s) affected, the different configuration will be permanent.

E.3 DETAILED REQUIREMENTS. Detailed instructions for completion of the DD Form 1694.

Block 1. Date Prepared. Enter the date RFV preparedin the format DD-Mon-YYYY, e.g. 01-Jan-2010.

Block 2. Procuring Activity Number (PAN). To be used by the procuring activity for entry of internal processing number if required.

Block 3. RFV NO. Enter the originator internal RFV or tracking number if required.

Block 4. Title of Variance. Enter a title to describe the variance.

Block 5. RFV Priority. Enter the RFV Priority.

Block 6. Variance Request Pre or Post Production. If the request for variance is requested prior to manufacture of the item, check Pre-Production (i.e. variance requested prior to need, formerly Request for Deviation). If the need for the variance is identified after the item(s) manufacture, check Post-production (i.e. variance requested after the fact, formerly Request for Waiver).

Block 7. Baseline affected. Enter the affected baseline.

Block 8.a-c. System Information. Enter the model or type designation, e.g. M16, Mk48, F22, etc., System/Configuration item nomenclature, and end item CAGE Code.

Block 9. Affected Item Nomenclature. Enter the name of the part/assembly affected.

Block 10. Part Number(s) of Affected Item. Enter the part number of the item containing the defect.

Block 11.a. Other External System Affected. If the proposed change impacts another system (e.g.,

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interfacing system, training device, and test sets), check yes in this field, otherwise check no.

Block 11.b. List Other Systems or Configuration Items Affected. If block 11.a. is checked yes, list other systems affected.

Block 12.a-c. Classification of Defects. Enter the defect classification, defect no. (if applicable) and the document used to define or classify the defect (if applicable).

Block 13. Description of Variance. Describe the nature of the proposed departure from the technical requirements of the configuration documentation. Marked drawings or other documents should be included when necessary to describe the variance.

Block 14. Need for Variance. Explain why it is not possible to comply with the configuration documentation within the specified delivery schedule. Also, if applicable, explain why a variance is proposed in lieu of a permanent design change.

Block 15. Corrective Action Taken. Describe action to prevent a future recurrence.

Block 16. Effect on performance, function, reliability, durability, integrated logistics support. The variance shall be analyzed to determine if it affects any factors listed on Form 1692/2.
Describe any effect on these factors.

Block 17. Recurring Variance. If the same variance has been requested previously, check yes here.

Block 18. Effectivity. Describe the effectivity over which this variance applies. May be listed by quantity, lot number(s), serial number(s) or date(s), or a combination thereof.

Block 19. Per Unit Cost Impact. Enter the estimated cost impact of the variance. If cost decrease, enclose quantity in parentheses.

Block 20. Total Cost Impact. Enter the total cost impact of the affected variance. If cost decrease, enclose quantity in parentheses.

Block 21. Effect on Delivery Schedule if Rejected. Describe the effect on the delivery schedule if the variance is rejected.

Block 22.a-b. Contract Information. Enter the contractor name, contract number and line item of the affected item.

Block 23.a-c. Contracting Officer. Enter the procuring activity's contracting officer name, telephone and e-mail.

Block 24.a-e. Originator Information. Enter the originator, name, address, CAGE Code, email and telephone number of the originator of the request for variance.

Block 25.a-c. Submitting activity. An authorized official of the activity entered in Block 24 shall sign in this block and enter name and title.

Block 26.a-d. Recommendation. This block will be completed by the activity making a recommendation to the Configuration Change Authority.

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Block 27.a-d. Disposition. This block will be completed by the Configuration Change Authority authorized to make the decision on the request for variance.

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REQUEST FOR VARIANCE (RFV)	1. DATE PREPARED (DD-MMM-YYYY)	2. PROCURING ACTIVITY NUMBER (PAN):	OMB No. 0704-0188
		3. RFV NUMBER:	

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4. TITLE OF VARIANCE:

5. RFV PRIORITY: ☐ E - Emergency ☐ U - Urgent ☐ R - Routine		**6. VARIANCE PRE-OR POST-PRODUCTION:** ☐ Pre-Production ☐ Post-Production	**7. BASELINE AFFECTED:** ☐ Functional ☐ Allocated ☐ Product
8. SYSTEM INFORMATION	**a. MODEL/TYPE DESIGNATION** *(ex: M16)*:	**b. SYSTEM/CONFIGURATION ITEM NOMENCLATURE** *(ex.: Rifle)*:	**c. END ITEM CAGE CODE:**
9. AFFECTED ITEM NOMENCLATURE *(ex: Bracket)*:		**10. PART NUMBER(S). OF AFFECTED ITEM(S):**	
11.a. OTHER EXTERNAL SYSTEM AFFECTED: ☐ Yes ☐ No		**b. IF BLOCK 11.a. IS YES, LIST OTHER SYSTEMS OR CONFIGURATION ITEMS AFFECTED:**	
12. CLASSIFICATION OF DEFECT(S)	**a. DEFECT CLASSIFICATION:** ☐ Critical ☐ Major ☐ Minor	**b. DEFECT NO.:**	**c. DOCUMENT DEFINING DEFECT CLASS:**

13. DESCRIPTION OF VARIANCE:

14. NEED FOR VARIANCE:

15. CORRECTIVE ACTION TAKEN:

SAMPLE

16. EFFECT ON PERFORMANCE, FUNCTION, RELIABILITY, DURABILITY, INTEGRATED LOGISTICS SUPPORT, INTERFACE OR SOFTWARE:

17. RECURRING VARIANCE: ☐ Yes ☐ No	**18. EFFECTIVITY** *(Quantity affected, Lot Number affected, Serial Numbers, Dates)*:	
19. PER UNIT COST IMPACT:	**20. TOTAL COST IMPACT:**	**21. EFFECT ON DELIVERY SCHEDULE IF REJECTED:**
22. CONTRACT INFORMATION	**a. CONTRACTOR:**	**b. CONTRACT NO. AND LINE ITEM:**
23. CONTRACTING OFFICER	**a. NAME:** / **b. TELEPHONE:**	**c. E-MAIL:**
24. ORIGINATOR	**a. NAME:**	**b. ADDRESS** *(Street, City, State and ZIP Code)*:
c. RFV ORIGINATOR CAGE CODE:	**d. TELEPHONE:**	
	e. E-MAIL:	
25.a. SUBMITTING ACTIVITY:	**b. NAME AND TITLE:**	**c. AUTHORIZED SIGNATURE:**

BELOW TO BE COMPLETED BY THE APPROVING ACTIVITY

26.a. RECOMMENDATIONS	☐ Approval ☐ Approval with Modification ☐ Disapproval	
b. NAME AND TITLE:	**c. DATE SIGNED** *(DD-MMM-YYYY)*	**d. SIGNATURE**
27.a. DISPOSITION *(Configuration Change Authority)*	☐ Approved ☐ Approved with Modification ☐ Disapproved	
b. NAME AND TITLE	**c. DATE SIGNED** *(DD-MMM-YYYY)*	**d. SIGNATURE**

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REQUIREMENTS FOR CONFIGURATION STATUS ACCOUNTING (CSA)

F.1 GENERAL

F.1.1 Scope. This Appendix establishes requirements for CSA of the documentation and identification numbers which describe CIs, for CSA of the processing and implementation of changes to CIs and their associated documentation, and for CSA of the actual configuration of units of CIs.

F.1.2 Applicability. The CSA requirements established by this Appendix shall apply throughout the lifecycle of CIs and systems, as appropriate. CSA work tasks, database information elements, and reporting systems will be tailored to address the phase of the lifecycle, the scope of the program, other contractual provisions, and the complexity of the item being procured. Contracts invoking this Appendix will specifically identify the appropriate applicable tasks and/or paragraphs in the contract statement of work or tasking directive.

F.2 Paragraph not used.

F.3 Paragraph not used.

F.4 Paragraph not used.

F.5 DETAILED REQUIREMENTS

F.5.1 Information system requirements.

F.5.1.1 Descriptive documentation and identification numbers. An information/management system shall be established to maintain a record of the most current versions of the documents, or their electronic equivalents, and their identification numbers, which describe the CIs. Specific information system capabilities and data elements selected from the following tasks shall be provided. These data elements shall be incorporated into the system progressively and not later than the date when they first come under configuration control as a result of the establishment of the FBL, ABL, or PBL. These data elements shall be updated as changes from the baseline configuration are approved, so that the most current descriptive information is the primary information stored. However, where continuing operational use of more than one configuration of a CI is approved, the system shall identify all currently approved documentation/identification numbers for those configurations.

F.5.1.1.1: Document revision level. For each document (e.g., specification, drawing, MBD datasets, associated list and standard) prepared and maintained for this program, a record shall be established and kept current. The record shall show:

a. The identification number

b. Document title

c. The CAGE Code for the design activity

d. The CI nomenclature

e. The current revision letter and date of issue

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f. The date of approval

g. The related ECP number

h. The contract number and CDRL sequence number.

i. The part number(s) of the part(s) changed as a result of that drawing change and the effectivity of the part(s) in terms of CI serial numbers

F.5.1.1.2: Software version level. For each item of software purchased/created and maintained for the operation and maintenance of this system and its component CIs, a record shall be established and kept current. The record shall reflect:

a. The software identification number

b. The related CSCI specification number and title

c. The CAGE Code for the design activity

d. The software title

e. The current version and interim version level

f. The ECP number effecting the change, where applicable, and the identifier of the supplying activity's change document effecting the detailed change to the software and associated documentation.

g. The effective release date of the current version/ interim version

h. The number, title, version and date for the current operations/programmers/maintenance manuals and version description document

i. The number, title, version and date for the current test procedures

j. If the software is resident on a "read only" device (e.g., PROM), the current part number for the software/medium combination

k. The contract number and CDRL sequence number.

F.5.1.1.3: Software version history. The information system shall maintain a historical file of the information for each version and interim version of the software from the date of initial release of the software through the current version.

F.5.1.1.4: CI component indentured listing. For each CI, a record shall be generated and kept current identifying the CI by name and identifier. The record shall also identify the number, name, and CAGE Code for all hardware parts/assemblies and sub-assemblies (for software, the source code and object code components/units) that comprise the CI. It shall be presented in a hierarchical, or indentured, manner so that the "level of assembly" relationships (e.g., where used, next assembly) of the various pieces of the CI can be understood by looking at the arrangement of the record. As a minimum, the record shall list all parts/logical units that have been selected by the acquiring activity for logistics support and all components of those parts that have been selected as spares, including those of superseded but still used

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configurations.

F.5.1.2 Tracking active change processing. An information/management system shall be established capable of tracking all proposed changes from first communication of a problem report through either official notice of disapproval or formal issuance of a final negotiated contract modification. The system shall contain general information about the change proposal and shall track specific events and dates associated with the processing of the change. Specific information system capabilities and data elements selected from the following tasks shall be provided. The system shall contain the required information for the initial study document, for the formal proposal, and for each correction or revision to the proposal(s), and it shall provide cross-correlation for all related (dash numbered) and companion (associate supplying activity) formal proposals.

F.5.1.2.1: Changes being processed status. For each change submittal, the tracking system shall establish and keep current a separate record to identify:

a. The type of change involved (e.g., ECP, variance)

b. The change identification number (e.g., ECP number)

c. The CAGE Code of the originator

d. The change title

e. The configuration baseline(s) affected

f. The title and number of the affected specification(s)

g. The related NOR number

h. The priority

i. The date on which the change was transmitted to the acquiring activity

j. The "need date" for a decision on the change

k. The final CCB decision

l. The date on which the official decision notification was provided to the supplying activity.

F.5.1.2.2: Document Changes' History. The information system shall maintain a historical file of the information for each change document submitted by the supplying activity to the acquiring activity throughout the life of the contract.

F.5.1.2.3: Event date entries. For each change tracked, the system shall identify and assign suspense dates to the discrete activities involved in the review of the change by the acquiring activity. It shall automatically assign suspense dates by which those activities must be completed, based on the need date and the priority of the change. The acquiring activity's change manager will have the capability to change suspense dates (except the need date) and to input completion dates reflecting the status of the processing of the change. Some of the typical events which this information system shall be capable of tracking include:

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a. Change receipt;

b. Distributed for coordination/comments;

c. Coordination/comments due;

d. Technical meeting;

e. Corrections due from supplying activity;

f. CCB;

g. Directive to contracting;

h. Design activity's need date;

i. Contract modification issued.

F.5.1.2.4: Change processing history. For each change tracked, the information system shall maintain a historical record of the dates of all specific acquiring activity events throughout the life of the contract.

F.5.1.2.5: Date search capabilities. For each change tracked in, when a specific beginning and end dates are identified by the user, the system shall have the capability to provide information (as a calendar listing sorted by day) about all scheduled, but not yet completed, events during that time span. Likewise, when an "as of" date is specified by the user, the system shall have the capability to identify all scheduled, but not yet completed, events that should have been accomplished by that date and to sort them by the magnitude of their delinquency.

F.5.1.3 Approved changes to CI configuration. An information/management system shall be established to document the initial approved configuration of each CI and to identify the impact of each approved, contractually authorized change to the approved configuration. The following task defines the specific information system capabilities and data elements which may be required.

F.5.1.3.1: Approved change identification and effectivity. For each CI, a historical record documenting all of the changes that have been approved against that CI shall be established and kept current. The record shall reflect:

a. The change identification number;

b. The CAGE Code of the originator;

c. The title of the change;

d. The date of approval of the change;

e. The contract modification number, if appropriate;

f. The complete unit serial number effectivity;

g. The serial numbers of already-delivered units to be modified as a result of the change;

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h. The new part numbers and/or drawing revision levels and/or new software component/unit versions (and related affected manuals) resulting from each approved change;

i. The contract number and CDRL sequence number.

F.5.1.4 Implementation of approved changes. An information/management system shall be established to track the accomplishment all tasks' status resulting from all approved change proposals. The system shall include key elements of information about each change, including the functional activities necessary to accomplish the tasks. The system may be required to establish and track scheduled and actual dates for the accomplishment of the various tasks involved in the implementation of each approved change. Specific information system capabilities and data elements selected from the following tasks shall be provided.

F.5.1.4.1: Approved change implementation activities. For each change approved against the system or one of its component CIs, the record established shall include specific suspense dates for the completion of all activities related to each of the major areas of impact of the change. The record shall also identify the specific contact point responsible for each activity, including their phone number. As appropriate to the change involved, these activities include, but are not limited to, the following:

a. Status of Redesign and Testing;

b. Specification Change/Revision Activity;

c. Drawing Revision Activity;

d. Software Revision Activity;

e. Technical Manual Preparation/Revision;

f. Spares Purchase and Distribution;

g. Support Equipment Design, Purchase, or Modification;

h. Retrofit/Modification Kit Development;

i. The contract number and CDRL sequence number.

F.5.1.5 Detailed approved change implementation activities. For each change approved against the system or one of its component CIs, each implementation area tracked in the record shall be expanded, as identified in the contract. It shall identify specific discrete activities leading to the completion of the work in that specific implementation area, and it shall include specific suspense dates for the completion of each of those discrete activities. Typical activities which this information system shall be capable of tracking are included in each of the following tracking areas:

F.5.1.5.1 Documentation revision activity.

F.5.1.5.1.1: Document revision activity. If the change has affected a document, the record shall track revision, review, and official release of the drawing incorporating the change. Typical discrete events include:

a. Receipt of approved change document;

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b. Drafting of official drawing changes;

c. Review and approval by design function A (e.g., drafting);

d. Review and approval by design function B (e.g., design);

e. Review and approval by design function C (e.g., quality);

f. Approval/concurrence by acquiring activity representative;

g. Release of new document;

h. Revised drawings distributed to all addressees.

F.5.1.5.1.2: Software revision activity. If the change has affected a software unit, the record shall track the revision, review, and official release of the software incorporating the change. Such tracking shall be provided for software used in the operation of the system, in the maintenance of the system, and in trainers and simulators for the system. Typical discrete events include:

a. Receipt of approved change document;

b. Coding, checkout, and testing of the software changes;

c. Revision of affected manuals;

d. Review and approval by design function A;

e. Review and approval by design function B;

f. Review and approval by design function C;

g. Approval/concurrence by acquiring activity representative;

h. Release of new software version;

i. Update of Software Development Library materials;

j. Reproduction on appropriate medium (e.g., Compact Disk and electronic link);

k. Revised code and manuals distributed to all addressees.

F.5.1.5.2 Support element update activity.

F.5.1.5.2.1: Spares purchase and distribution. If the change requires new spare parts to be stocked, the tracking record shall monitor the events required to provide them to the support organizations. Typical discrete events include:

a. Old and new part numbers;

b. Quantity of new spares required;

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c. Design Change Notice (DCN) number;

d. Design Change Notice issued to logistics activity;

e. Purchase/work order issued;

f. Parts received from manufacturing activity;

g. Parts shipped to support activity; and

h. Parts received by support activity.

F.5.1.5.2.2: Support equipment design, purchase, or modification. If the change requires the development or purchase of new support equipment, the tracking record shall monitor the events required to provide the support equipment to the supporting activities in time to support the new configuration. (When modification of existing support equipment is required to support the new configuration, that modification will be tracked with a record identical to the one used for tracking modification of operational units.) Typical discrete events include:

a. Quantity required;

b. Purchase/work order issued;

c. Issuance of requirements documentation;

d. Redesign, or new design, work completed;

e. Prototype constructed;

f. Testing completed;

g. Final CCB approval;

h. Update Engineering Release Records;

i. Production started; and

j. Deliveries to acquiring activity.

F.5.1.5.2.3: Retrofit/modification kit development. If the change requires that the new configuration approved for the production line be incorporated retroactively (retrofitted) into the units and support equipment already accepted by the acquiring activity, the tracking record shall monitor the events required to develop the kit of parts and the associated instructions. Typical discrete events include:

a. Quantities of kits for delivered units;

b. Quantities of kits for spare units;

c. Quantities of kits for training sets;

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d. Purchase/work order issued;

e. Parts delivered by manufacturing activity;

f. Installation instructions drafted;

g. Installation instructions verified;

h. Validation (proofing) of kit and instructions; and

i. Delivery of kits to support activity.

F.5.1.6 Configuration of units in the field. An information/management system shall be established to document the exact delivered configuration of each unit, as well as certain specifically identified critical components of each unit, and to track changes to the configuration of each unit and component. Certain critical components of each unit shall be tracked by both part number and serial number. Specific information system capabilities and data elements selected from the following tasks shall be provided. The system shall be capable of identifying the exact configuration of each unit of the CI and of identifying the total number of units having a specific configuration. Where continuing operational use of more than one configuration of a CI is approved, the system shall identify all currently approved configurations and the quantities of each configuration in operational use.

F.5.1.6.1: As-built record. As each unit of a CI is manufactured and delivered to the acquiring activity, a record shall be established for the acquiring activity detailing the exact configuration.

F.5.1.6.1.1 For hardware CIs, the as-built data shall correlate to the as-designed engineering data and manufacturing/ quality records. It shall contain:

a. The verified detailed composition of the item in terms of subordinate CIs and subordinate parts, associated serial/lot numbers, and, where applicable, engineering changes incorporated;

b. The variance from as-designed configuration;

c. The design activity CAGE Code for the CI(s) and the part(s); and

d. For part(s) with proprietary or restricted rights, or for which licensing agreements apply, a record of the documents which specify the limitations, and their associated design activity CAGE Codes, shall be provided.

F.5.1.6.1.2 CSCIs. For CSCIs, the record shall provide the VDD number and where the CSCI is installed.

F.5.1.6.2: Maintenance history. For each unit delivered to the field, the record of the as-built history shall be updated with information reflecting maintenance actions performed on the unit. The record shall reflect the part number and, where applicable, the serial number of any part replaced in the unit by maintenance action.

F.5.1.6.3: Retrofit/modification history. For each unit delivered to the field, the record of the as-built history shall be updated with information reflecting the retroactive installation (retrofits or modifications) of new design parts in the unit. The record shall reflect:

a. The most current part number and name; and

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b. The serial number of the part currently installed in that unit.

F.5.1.7 Tracking audit action items. An information/ management system shall be established capable of tracking all action items that are established as a part of the functional and physical configuration audits for all of the program's configuration items (and the system, if applicable). The system shall contain general information about the action item and the article that it affects and shall track specific activities and suspense dates associated with closing the action item. Specific information system capabilities and data elements selected from the following tasks shall be provided. The system shall be capable of providing cross-correlation of all action items to be able to present the current status of all action items relating to a specific audit for a specific configuration item.

F.5.1.7.1: Audit action item status. For each action item officially established by the Supplying Activity and the acquiring activity at each configuration audit for the program, the tracking system shall establish and keep current a separate record to identify:

a. The identification number of the CI affected;

b. The type of audit;

c. The identification number of the action item;

d. Short title for the action item;

e. The date the action item was established;

f. Contractual and specification requirements affected; and

g. For each activity identified as required to close out the action item, provide:

(1) Identification of the activity;

(2) Identification of the responsible agency;

(3) The suspense date for completion of the activity; and

(4) The actual closeout date of the activity.

F.5.1.7.2: Audit action item history. The information system shall maintain a historical file of the information, organized by configuration item and by audit type, throughout the life of the contract.

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INSTRUCTIONS FOR THE PREPARATION OF CERTIFICATION PACKAGE FOR FCA AND/OR PCA

G.1 GENERAL

G.1.l SCOPE. This Appendix establishes format and requirements for the preparation FCA Certification and PCA Certification. Use of this format is optional unless required by the contract.

G.1.2 APPLICATION. The provisions of this Appendix apply whenever FCA and/or PCA certification is required.

G.2 REQUIREMENTS.

G.2.1 FCA CERTIFICATION REQUIREMENTS: Detailed instructions for format of the FCA Certification Package are as described below:

a. Page 1: FCA Certification Package.

b. Page 2: FCA Deficiency Summary List.

c. Page 3: Specification / Testing Review.

d. Page 4: Variances.

G.2.2 PCA CERTIFICATION REQUIREMENTS:

a. Page 1: PCA Checklist.

b. Page 2: PCA Certification Package.

c. Page 3: PCA Deficiency Summary List.

d. Page 4: Variances.

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FUNCTIONAL CONFIGURATION AUDIT (FCA) CERTIFICATION PACKAGE

1. SUPPLYING ACTIVITY NAME:	3. END ITEM:

2. CONTRACT NO. AND LINE ITEM:

3. VERIFICATION TEST PROCEDURES AND RESULTS. THE VERIFICATION TEST/ANALYSIS RESULTS HAVE BEEN REVIEWED TO ENSURE THAT TESTING IS ADEQUATE, PROPERLY DONE, AND CERTIFIED. (ALL TEST PROCEDURES AND INTERFACE DOCUMENTS SHALL BE REVIEWED TO ASSURE THAT THE GOVERNMENT HAS APPROVED THE DOCUMENTS. ALL TEST DATA SHEETS SHALL BE REVIEWED TO ASSURE THAT A REPRESENTATIVE OF THE GOVERNMENT WITNESSED THE TEST).

4. PURPOSE: THIS FCA WAS CONDUCTED TO VERIFY THAT THE CONFIGURATION ITEM'S PERFORMANCE COMPLIED WITH THE DEVELOPMENT SPECIFICATION. FCA WAS CONDUCTED ON THE FOLLOWING CONFIGURATION ITEMS.

4a. CAGE CODE	4b. DOCUMENT OR PART NO.	4c. NOMENCLATURE	4d.SERIAL NO.	4e. DATE CONDUCTED	FCA RESULTS	
					4f. REQ'TS MET	4g. REQ'TS NOT MET (SEE ATTACHED LIST OF DEFICIENCIES)
					☐	☐
					☐	☐
					☐	☐
					☐	☐
					☐	☐
					☐	☐

5. REMARKS:

6. FCA TEAM MEMBERS

6a. NAME	6b. TITLE	6c. ORGANIZATION	6d. SIGNATURE

BELOW TO BE COMPLETED BY THE SUPPLYING ACTIVITY

7a. RECOMMENDATIONS ON FCA ☐ Approval ☐ Disapproval ☐ Approval with Modification

7b. NAME and TITLE	7c. SIGNATURE	7d. DATE SIGNED *(DD-MON-YYYY)*

8. BELOW TO BE COMPLETED BY THE PROCURING ACTIVITY FCA APPROVAL AUTHORITY

8a. DISPOSITION ON FCA ☐ Approval ☐ Disapproval ☐ Approval with Modification

8a. NAME and TITLE	8b. SIGNATURE	8c. DATE REV RELEASED *(DD-MON-YYYY)*

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FCA DEFICIENCY SUMMARY LIST

CONFIGURATION ITEM NOMENCLATURE: _____

CI IDENTIFIER	REPORT REFERENCE	DESCRIPTION	RESPONSIBILITY FOR CORRECTION	PLACE OF INSPECTION	INSPECTED BY

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SPECIFICATION/TESTING REVIEW

Configuration Item Nomenclature:	
Specification No.:	
Test Procedures:	

Spec Ref. TP Ref.	Description	Test Result
_____		
_____		
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FCA VARIANCES

CONFIGURATION ITEM NOMENCLATURE: _____

REFERENCE (Spec, STD, Etc.)	CCB OR MRB APPROVAL/DIRECTIVE	VARIANCE OBTAINED FOR REQUIREMENT	REMARKS

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PCA CHECKLIST The following hardware, computer software, documentation shall be available, and the following tasks shall be accomplished at the PCA.

Hardware: Computer Software: Documentation:	YES	NO	NA
1) Approved final draft of the configuration item product specification.	☐	☐	☐
2) A list delineating both approved and outstanding changes against the configuration item.	☐	☐	☐
3) Complete shortage list.	☐	☐	☐
4) Acceptance test procedures and associated test data.	☐	☐	☐
5) Engineering Drawing Index.	☐	☐	☐
6) Operating, maintenance, and illustrated parts breakdown manuals.	☐	☐	☐
7) List of approved material review board actions on variances.	☐	☐	☐
8) Proposed DD Form 250, “Material Inspection and Receiving Report.”	☐	☐	☐
9) Approved nomenclature and nameplates.	☐	☐	☐
10) Manuscript copy of all software CI manuals.	☐	☐	☐
11) Computer Software Version Description Document.	☐	☐	☐
12) Current set of listings and updated design descriptions or other means of design portrayal for each software CI.	☐	☐	☐
13) FCA minutes for each configuration item.	☐	☐	☐
14) Program Parts Selection List (PPSL) .	☐	☐	☐
Tasks:			
1) Define Product Baseline.	☐	☐	☐
2) Specification Review and Validation.	☐	☐	☐
3) Drawing Review.	☐	☐	☐
4) Review acceptance test procedures and results.	☐	☐	☐
5) Review shortages and unincorporated design changes.	☐	☐	☐
6) Review Request for Variances (RFV).	☐	☐	☐
7) Examine proposed DD 250.	☐	☐	☐
8) Review contractor’s Engineering Release and Change Control System.	☐	☐	☐
9) Review system allocation document.	☐	☐	☐
10) Review Software User’s manuals, Software Programmer’s Manuals, Computer System Operator’s Manual, and Firmware Support Manual.	☐	☐	☐
11) Review software CIs for the following: a) Preliminary and detail Software Component design descriptions b) Preliminary and detail Software interface requirements. c) Database characteristics, storage allocation charts and timing and sequencing characteristics.	☐	☐	☐
12) Review packaging plan and requirements.	☐	☐	☐
13) Review status of Rights in Data.	☐	☐	☐
14) Ensure that all appropriate items installed in the deliverable hardware, that should have been processed through the Parts Control Program (PCP), are identified or that the necessary approval documentation is available and that the hardware does not contain items that should have been processed through the PCP but were not .	☐	☐	☐

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PHYSICAL CONFIGURATION AUDIT (PCA) CERTIFICATION PACKAGE

1. SUPPLYING ACTIVITY NAME:

3. END ITEM:

2. CONTRACT NO. AND LINE ITEM:

3. PROCEDURES AND RESULTS. THE VERIFICATION TEST/ANALYSIS/INSPECTION RESULTS HAVE BEEN CONDUCTED AND REVIEWED TO ENSURE THAT THE PRODUCT CONFIGURATION DOCUMENTATION IS A CLEAR, COMPLETE AND ACCURATE DEPICTION OF THE CONFIGURATION ITEM(S), THE ACTUAL CONFIGURATION ITEMS INSPECTED MATCH THE DOCUMENTATION AND THE DOCUMENTATION IS SUITABLE FOR ESTABLISHING A PRODUCT CONFIGURATION BASELINE.

4. PURPOSE: THE PURPOSE OF THE PCA WAS TO ENSURE ACCURACY OF THE IDENTIFYING DOCUMENTATION AND TO ESTABLISH A PRODUCT BASELINE. (ADD CONTINUATION SHEETS AS NECESSARY)

4a. CAGE CODE	4b. DOCUMENT OR PART NO.	4c. NOMENCLATURE	4d.SERIAL NO. IF REQ	4e. DATE PCA CONDUCTED	PCA RESULTS	
					4f. REQ'TS MET	4g. REQ'TS NOT MET (SEE ATTACHED LIST OF DEFICIENCIES)
					☐	☐
					☐	☐
					☐	☐
					☐	☐
					☐	☐
					☐	☐

5. REMARKS:

6. PCA TEAM MEMBERS

6a. NAME	6b. TITLE	6c. ORGANIZATION	6d. SIGNATURE

BELOW TO BE COMPLETED BY THE SUPPLYING ACTIVITY

7a. RECOMMENDATIONS ON PCA ☐ Approval ☐ Disapproval ☐ Approval with Modification

7b. NAME and TITLE	7c. SIGNATURE	7d. DATE SIGNED *(DD-MON-YYYY)*

8. BELOW TO BE COMPLETED BY THE PROCURING ACTIVITY PCA APPROVAL AUTHORITY

8a. DISPOSITION ON PCA ☐ Approval ☐ Disapproval ☐ Approval with Modification

8a. NAME and TITLE	8b. SIGNATURE	8c. DATE REV RELEASED *(DD-MON-YYYY)*

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PCA DEFICIENCY SUMMARY LIST

CONFIGURATION ITEM NOMENCLATURE: _____

CI IDENTIFIER	REPORT REFERENCE	DESCRIPTION	RESPONSIBILITY FOR CORRECTION	PLACE OF INSPECTION	INSPECTED BY

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PCA VARIANCES

CONFIGURATION ITEM NOMENCLATURE: _____

REFERENCE (Spec, STD, Etc.)	CCB OR MRB APPROVAL/DIRECTIVE	VARIANCE OBTAINED FOR REQUIREMENT	REMARKS

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REPORTING THE ACCOMPLISHMENT OF RETROFIT CHANGES

H.1 GENERAL

H.1.1 Scope. This Appendix defines the requirements to be invoked on contracts requiring the reporting of the accomplishment of retrofits and modifications to units (i.e. modification of the as-maintained baseline) of the CI that have been accepted by the acquiring activity.

H.2 Paragraph not used.

H.3 Paragraph not used.

H.4 GENERAL REQUIREMENTS

H.4.1 Subcontractors. Prime contractors shall be responsible for compliance by subcontractors, vendors, and suppliers to the extent specified in the contract.

H.4.2 Recording Engineering Changes. The contractor shall record the accomplishment of Engineering Changes for units of the system, computer software, equipment, and spares which have been delivered or are awaiting delivery. Update of the CSA system shall be performed as necessary. This requirement shall not be used to report the accomplishment of in-production changes prior to delivery or acceptance.

H.5 DETAILED REQUIREMENTS

H.5.1 Retrofit records. The contractor shall generate records of retrofit accomplishment as directed in the contract. The record generated for each unit affected by the retrofit shall include the following elements of information:

a. Location. The location where the retrofit was accomplished.

b. Identification of change. The ECP number and retrofit instruction number, as applicable.

c. Configuration item affected. The CI identification number, part number or software version number, and unit serial number, as applicable.

d. Date. The date of installation on this serial numbered unit.

e. Part modified/replaced. The old part number and, if appropriate, the serial number of the part/assembly removed or modified.

f. Part incorporated. The new part number and, if appropriate, the serial number of the part/assembly incorporated or modified.

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CONCLUDING MATERIAL

Custodian:
Army – AR

Preparing Activity:
Army - AR
(Project SESS-2012-012)

Review Activities:
Army – AC, AM, AT, AV, CE, CR, EA, GL, MD, MI, MR, PT, SM, TM

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.

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