

LMTAS

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**Lockheed Martin Tactical Aircraft Systems (LMTAS)
Fort Worth, Texas**

CONFIGURATION MANAGEMENT REQUIREMENTS FOR SUPPLIERS AND SUBCONTRACTORS

Approved: //signed//

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LMTAS Configuration Management Requirements for Suppliers and Subcontractors

1.0 General

The Supplier shall certify that they will establish and perform Configuration Management (CM) activities on the program. The Supplier shall assign the overall responsibility for Configuration Management to one person within the Supplier's organization for coordination with LMTAS. CM activities shall be tailored for the program in accordance with recognized U.S. commercial CM best practices. EIA-649 "National Consensus Standard for Configuration Management" shall be used as a guide for an entire CM process. Additional Software CM guidance and principles may be found in ISO 12207.

Note: The Supplier should remember that LMTAS' goal is to reduce the preparation and submittal of CM-related formal data deliverables to only those that are necessary. The requirement set has been adjusted accordingly. However, the end Customer's support concept (e.g., Government Support vs. Contractor Support vs. 3rd Party Support) may have a direct impact on the number of formal data deliverables to be prepared and submitted.

Establishment of Configuration Management requirements and procedures begin at contract award.

LMTAS reserves the right to periodically conduct a Surveillance Review of the Supplier's CM process to verify it consistently meets the requirements stated herein. LMTAS also retains the right to participate in design reviews and change control meetings.

To support the Supplier's Configuration Management System, the Supplier shall impose the CM requirements in this document and Purchase Order as a flow-down to their subtier suppliers.

1.1 Definitions

A. Major Change - See EIA-649 (a.k.a., Out-of-Scope changes, Class I).

B. Minor Change - See EIA-649 (a.k.a., In-Scope changes, Class II).

C. Supplier - Any Subcontractor or Manufacturer who provides a product to LMTAS through a Contract or Purchase Order.

2.0 CM Process

The Supplier shall certify that they have a process for dealing with CM-related matters/activities. The CM process shall be documented by the Supplier as an internal procedure or CM plan (i.e., follow ISO 9000 policy of documenting procedures). The CM process document shall be available for LMTAS to review, but is not a formal data deliverable. LMTAS will maintain insight into the Supplier's CM process.

Upon acceptance of a LMTAS purchase order, the Supplier shall provide their certification to LMTAS, which attests to Supplier Configuration Management process compliance. This CM process certification includes a specific duty to maintain meaningful, relevant CM process measurement/metrics, which should be available for LMTAS review upon request.

3.0 Configuration Identification

The Supplier shall establish and maintain the current configuration identification (drawings, product structure, specifications, part numbers, serial numbers, software, etc.) of the item(s) to be delivered under the subject Purchase Order. This activity should also validate that only the current/official configuration documentation is being used to manufacture the item(s). The Supplier shall mark all items using barcode nameplate labels reflecting part number, dash number, serial number, nomenclature, and designer's/manufacture's CAGE code (see EIA-621 and EIA-624 for guidance on barcoding). Supplier-sought exemptions to usage of barcode nameplate labels should be submitted in writing to LMTAS in "white paper" style for each item/class of items. See the Appendix A "Hardware/Software Marking - Policy Document" for additional guidance on product marking. For guidance on drawing requirements, see Technical Data Package (TDP) requirements contained within the Contract or Purchase Order for the application of ASME Y14 series documents (Y14.24/.34/.35/.100) and/or Mil-Std-100.

4.0 Configuration Control

The Supplier shall have procedures for internally initiating, reviewing, classifying, and dispositioning proposed changes to a deliverable item(s). EIA-649 shall be used as a guide. The following definitions apply:

4.1 Major Changes. Proposed Major changes that affect the technical and/or cost provisions, terms and conditions of the Purchase Order or that affect an interface (mechanical, electrical, hyd/pneu, test, etc.) with LMTAS shall be submitted as ECPs (including SCNs) or CCPs, for LMTAS authorization prior to the Supplier implementing the change.

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4.2 Minor Changes. Minor changes are changes that do not affect the Purchase Order (e.g., In-Scope, Class II) or are not considered a Major change (see definition above):

a. The Supplier is required to submit Minor change documentation to LMTAS for review & concurrence in classification.

or

b. If the Supplier's excellent past performance or item complexity/risk does not warrant submittal of a minor change, then approval/concurrence is delegated to the supplier. This determination is made by LMTAS CM. The Purchase Order or Supplier Data Requirements document will clearly reflect whether delegation of Minor change authority has been granted to the Supplier.

4.2.1 If a Minor change is non-concurred with/disapproved or it is determined by later analysis that the factors for a Major change are applicable, the Supplier, at the direction of the Buyer, shall cancel the Minor change at its source, in its entirety and inception point of the change, and remove the change from equipment at no change in Purchase Order target price, target schedule, or terms & conditions to LMTAS. The Supplier may reprocess the proposed change as a Major change under all requirements thereto.

4.3 Variiances. Products that incorporate a known departure from requirements shall not be delivered to LMTAS unless a Variance (previously known as Deviation/Waiver) has been submitted by the Supplier, and authorized by LMTAS prior to acceptance of the non-conforming item(s). The Request for Variance shall include a recommended corrective action statement and a recommended withholding (\$) amount/consideration statement. Variiances are categorized as Major or Minor in terms of severity of impact to LMTAS. In order to contractually close Major Variiances, the Supplier must provide LMTAS a Certificate of Compliance letter stating that the corrective action(s) has been accomplished. See EIA-649 for guidance on Variiances.

4.4 Baselines. Identified baselines are categorized by the degree of detail defined or by the placement of authority for change approval. A Delivery Baseline is established upon LMTAS receipt of the first deliverable; on-site or off-site, pre-production or production unit, whichever ships first. A Delivery Baseline constitutes supplier initiation of Major/Minor Change Control to LMTAS. Product Baseline shall commence concurrent with the delivery (e.g., DD Form 250, packing sheet, etc.) of the first production unit or completion of First Article Inspection/PCA (which ever comes first).

5.0 Configuration Audits

Configuration Audits for newly developed or significantly modified Supplier equipment items will be streamlined for the program. No configuration audits will be required for off-the-shelf or for minor modified Supplier equipment items, unless specified by Purchase Order (LMTAS will decide which items meet the "minor modified" definition). See EIA-649 for guidance. The objectives of Configuration Audit meetings may be combined with existing meetings/events whenever possible. Audit Streamlining is defined as follows:

The "validation of proper requirements flowdown", one objective of a Functional Configuration Audit (FCA), should be accomplished after testing is complete and prior to delivery. The verification of functionality (i.e., proving that design/performance requirements have been met and that the item functions properly) shall be certified by the Supplier (this normally occurs after completion of Qualification Testing).

The physical/dimensional aspects ("as built" vs. "as designed") of a Physical Configuration Audit (PCA) may be added/combined with First Article Inspection (FAI). Critical physical/dimensional checks should also be included in the end item acceptance testing. The proving of ability to manufacture at a production rate (adequate work planning/instructions, tooling, processes, etc.) should also be included as a part of FAI. Finally, the Supplier shall certify the definition of the production baseline configuration, by part number/dash number, for their item(s).

Each Supplier of newly developed or significantly modified supplied equipment items will be responsible to jointly conduct its Configuration Audit (using EIA-649 as a guide) with LMTAS prior to Product Baseline. The minutes shall contain at a minimum:

- a. Validation of Requirements Flowdown: Matrix/Listing of requirements with verification method
- b. Hardware: FAI results including a drawing/document list (with revision level) of the Product Baseline and Product Identification.
Software: Listing of Software Baseline Documents and Software Product I.D.
- c. Hardware and/or Software Acceptance Test Procedure (or equivalent) Number

A copy of the Configuration Audit minutes shall be formally submitted to LMTAS CM, for information only. Resultant action items will be officially closed through the Buyer

If the above Configuration Audit streamlining is not practical or not appropriate for an item(s) due to its technical complexity, risk, or other reason (e.g., Supplier's past performance does not warrant Configuration Audit streamlining, as determined by LMTAS CM); then special stand-alone Configuration Audit (FCA/PCA) meetings may be required.

Note: LMTAS will perform CM Surveillance over our Supplier Base, and may audit any Supplier whose CM processes may jeopardize LMTAS' ability to meet our CM requirements.

6.0 Configuration Status Accounting (CSA)

The Supplier shall keep internal records defining the configuration, by part number and serial number of item(s) delivered to LMTAS under the subject Purchase Order. (*For Example: Data regarding incorporation of approved configuration changes, “as-installed” in deliverable end items, is one type of data that should be a part of the Supplier’s CSA database.*) Decisions on the information to be captured in the CSA system should be based on such factors as the nature of the product, the environment in which the product will be operated, the anticipated volume and complexity of change activity, and the information needs of the customer(s). LMTAS’ goal is to support objectives towards Electronic Commerce. LMTAS encourages use of Mil-Std-2549 as a guide for electronic data capture, storage and submittal – and STEP protocols for data structure and exchange. See EIA-649 for guidance in CSA.

The Supplier should recognize that some of the uses of this information are: isolation to batch/lot of item(s) that may have a nonconformance/potential for failure, and identification of item(s) involved in warranty determinations. This CSA information may be viewed by LMTAS but is not a formal data submittal to LMTAS.

6.1 Information of Shipment. Concurrent with shipment of a hardware or software item, the Supplier shall send a copy of the packing sheet (DD Form 250, DD Form 1149 or equivalent) to LMTAS. Information to be included on the packing sheet are: destination of shipment, nomenclature of items, part number, serial number, ECPs incorporated in the delivered units, and applicable Variances.

7.0 Interface Definition

LMTAS will incrementally define to the Supplier, via an interface control document or equivalent, those interfaces (mechanical, electrical, hyd/pneu, test, etc.) that are essential to LMTAS performing its requirements. LMTAS may require the Supplier to prepare and submit the formal interface control document, after LMTAS/Supplier coordination, for LMTAS approval. The Supplier must control these defined interfaces via the change process (see paragraph 4.0 above).

8.0 Subtier Supplier CM Flowdown

The Supplier shall flow down the above LMTAS CM requirements to their subtier Suppliers.

9.0 Configuration Management Data

CM Data to be submitted by Suppliers should be tailored for each Purchase Order. The following CM Data should be considered for submittal (but not limited to):

- a. Certificate of CM Process compliance (mandatory submittal)
- b. Major Change Proposals (including drawing and/or spec changes, if any)
- c. Minor Change Proposals (including drawing changes, if any)
- d. Request for Variance
- e. Agenda for Configuration Audits
- f. Minutes for Configuration Audits
- g. Delivery Documents (e.g. DD Form 250, DD Form 149, packing sheet, etc)
- h. Configuration Management Plan
- i. Version Description Document
- j. Contract Change Notice
- k. Certificate of Compliance (Major Variances)

Appendix A Hardware/Software Marking - Policy Document

A.1 Part Numbers

All deliverable items, and items within deliverable items, will have a part number. The part number, including current dash number will define the exact configuration of each item. The part number may not exceed 15 characters for LMTAS Multiple Program Release System (MPRS/MRPPII) programs and 18 characters in total length for LMTAS Product Data Management/Enterprise Resources Planning (PDM/ERP) programs; inclusive of spaces, dashes or other special symbols.

A.2 Serial Numbers

Deliverable items shall be serialized. A serial number shall be uniquely assigned to an individual item and once issued, the serial number shall not be re-used/repeated. Serial numbers should start at one (e.g., 0001), may not exceed 10 characters in total length, and shall continue sequentially regardless of part number/dash number changes to the item. The last four digits of the serial number shall be numeric.

A.3 Hardware part marking guidance

Part numbers and serial numbers should be legible, permanent and affixed to items using barcode labels. See Mil-Std-130 for guidance on part marking. All line replaceable units (LRUs), major structural components, interchangeable items, time change items, and specially designated items shall have barcode labels (see EIA-621 and/or EIA-624 for guidance on barcoding) with the following as a minimum: (See example nameplate on next page)

- a. Item part number (incl. dash number, if any)
- b. Serial number
- c. Nomenclature
- d. Design Activity's CAGE Code number
- e. Manufacturing Activity's CAGE Code number
- f. National Stock Number (if required by contract for nameplates)
- g. LMTAS Specification Control Drawing Number (if applicable for nameplates)

If the part is too small for an affixed barcode label, then the physical marking of the serialized part shall include the CAGE Code, in either the part number (e.g., 81755-1234567-101) or in the serial number (e.g., 8175500001).

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A.4 Software part marking guidance (when single point load is applicable)

Supplier items containing software should be loaded with the most current/appropriate version of their software in their deliverable LRUs, before shipment to LMTAS. The supplier should identify via temporary sticker (i.e., must stay affixed through LMTAS DD 250 of the air vehicle) the software version loaded. The supplier should also affix a permanent sticker cautioning field users/maintainers about the validity of any software load stickers once the "single point software load" procedure is used. See the example nameplate below.

EXAMPLE OF BARCODE LABEL/NAMEPLATE:

(Nomenclature) Computer, Whizzbang 	(Part Number) 99E123456 	(Dash Number) -101
(Design Activity CAGE) 81755 	(Mfg Activity CAGE) R8642 	<i>Semi-permanent Sticker</i>
(National Stock Number) XYZ123456 	(Serial Number) 00001 	(Software Loaded) Version 50T9.3

Permanent Nameplate (eg, metal) *Temporary Sticker*

CAUTION: This item is subject to be loaded via the "single point software load" procedure. Field users/maintainers should not count on the validity of any software load stickers affixed hereto. Go to the single point load access panel for accurate software load info, or see the applicable technical order.

Permanent Sticker