CONFIGURATION MANAGEMENT

1.0 Definition of terms:

1.01 The term "shall", "will" and "may" are used with specific intent thought-out these documents and will observe the following rules:

1.1 Requirements defined using "**shall**" in the text are mandatory requirements and are considered to be binding and require formal verification. Departure from such a requirement is not permissible without formal agreement between Subcontractor and CSPI.

1.2 Requirements defined using "**will**" in the text expresses a provision or service by CSPI or an intention by CSPI in connection with a requirement of this document. The subcontractor is implicitly authorized to rely on such service or intention.

1.3 The word "**may**" in the text expresses a permissible practice or action. It does not express a requirement of this document.

2.0 Program Change Control

2.1 The Subcontractor shall implement a Configuration Management (CM) program through established company procedures that will prevent unauthorized design changes from being incorporated into deliverable hardware/software and will ensure that approved changes are incorporated in the hardware/software and recorded in appropriate documents.

2.2 The Buyer reserves the right to audit the supplier for compliance to this plan. The plan shall define the Subcontractor's processes for configuration identification, configuration control, configuration status accounting, software libraries, configuration verification, and configuration audit.

2.3 The following requirements are applicable to all work performed under this contract

3.0 Configuration Management

3.1 The Subcontractor shall establish internal policy and procedures to ensure that the Configuration Management (CM) requirements identified below are maintained throughout the PO period of performance. The Subcontractor shall use EIA-649, National Consensus Standard for Configuration Management, as a guide for the supplier's internal policy. The Subcontractor shall ensure that sub-tier suppliers meet the intent of these CM requirements.

4.0 Configuration Identification

4.1 All existing Buyer and Subcontractor documents from the initial production contract are considered to be the Functional Baseline and changes to these documents shall not be made without express written direction from the Buyer.

4.2 The following shall be, but not limited to, part of the product baseline: Subcontractor drawings, Bill of Materials (BOM), assembly instructions, equipment, and facilities. The Buyer will identify the Configuration Item (CI) baseline for each product delivered by the Supplier in accordance with the PO.

4.3 CI identification and serialization shall be in accordance with buyer's specifications when specified. Otherwise they shall meet the intent of EIA-649 and be sufficient to provide baseline establishment, configuration control and configuration status accounting.

5.0 Configuration Control

5.1 The Subcontractor shall utilize the established configuration identification, control process and **c**onfiguration **c**ontrol **b**oard (CCB) during all phases of this effort, which is consistent with controls required to ensure baseline testing is performed on items of known approved configuration.

6.0 Post Baseline Change Process

6.1 This process invokes the standard three phases of a change, recorded in the EIA-649 standard: Identify and Document, Evaluate and Coordinate, and Implement and Verify the change.

6.2 The Subcontractor shall capture all potential changes within their CM process. Changes to the Functional Baseline shall be documented and provided to the Buyer for preliminary evaluation within five (5) working days following Major supplier Change Order (CO) review.

6.3 Changes to the Product Baseline shall be fully documented such that they are sufficient for the supplier or the buyer's CO to evaluate.

6.4 The Subcontractor's change evaluation process shall include a thorough review of the change by all impacted engineering disciplines. All changes (notification of change requests) shall be classified as either a Class I (Major) or Class II (Minor) as specified below. Class I changes are reviewed by the Subcontractor's CCB for readiness to be submitted to the Buyer's CCB for Buyer approval.

6.5 Any change affecting the Product Baseline, once established, is considered to be a Class I Change when any of the following requirements are affected:

6.5.1 Form/Fit/Function/Interchangeability,
6.5.2 Performance,
6.5.3 Reliability, maintainability, or survivability,
6.5.4 Weight, balance, or moment of inertia,
6.5.5 Interface characteristics,
6.5.6 Electromagnetic characteristics,

6.5.7 Other technical requirements, as stated in the specifications,

6.5.8 Configuration to the extent that retrofit is required,

6.5.9 Contractor or Government Furnished Equipment (CFE/GFE),

6.5.10 Safety,

6.5.11 Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers, or training devices/equipment/software,

6.5.12 Preset adjustments or schedules affecting operating limits or performance to such extent as to require assignment of a new identification number,

6.5.13 Interchangeability, substitutability, or replaceability, as applied to CIs, and to all subassemblies and parts, except the pieces and parts of non-repairable subassemblies,

6.5.14 Sources of CIs or repairable items, at any level, defined by source-control drawings,

6.5.15 Training, biomedical factors, or human-engineering design,

6.5.16 Delivered operation and maintenance manuals (or those on order) for which adequate change/revision funding is not provided in existing contracts. If the impact on publications is limited to the addition of two way interchangeable part numbers and no further instructions are required, the impact shall be considered Class II and the publication changes will occur at the next funded update,

6.5.17 Skills, manning, and/or maintenance related training.
Changes will also be classified as Class I if any of the following contractual factors are affected:

6.5.17.a Cost to the buyer, including incentives and fees,

6.5.17.b Contract guarantees or warranties,

6.5.17.c Contractual deliveries, or

6.5.17.d Scheduled contract milestones.

7.0   Class I changes are not implemented without express written direction from the Buyer.   The change is then made available for implementation including incorporation into the design documentation and hardware or software.

8.0   A Class II change is a change which does not impact any of the factors previously specified which make up a Class I change. The Subcontractor CCB-approved Class II changes shall be submitted to the Buyer for concurrence in classification within 30 days of CCB review.

9.0   Approved Class I changes, and Class II changes with concurrence documented, are returned by the Buyer to the Subcontractor to complete incorporation planning activities. Documentation updates shall be released into the Subcontractor's CM system. Hardware or software shall be updated based on the CCB-directed effectively cut-in requirement.

10.0 The Subcontractor shall recommend to the Buyer that new part numbers be assigned when the proposed change affects Form, Fit, Function, Integration, Interchangeability, Performance, Reliability, Service/Supportability, or if one of the following conditions exists:

10.0.1 Condition 1. Performance or durability is affected to such an extent that superseded items must be discarded for reasons of safety or malfunction.

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10.0.2 <u>Condition 2.</u> Parts, subassemblies, or complete articles are changed to such an extent that the superseded and superseding items are not interchangeable.

10.0.3 <u>Condition 3</u>. When superseded items are limited to use in specific articles or models of articles and the superseding parts are not so limited in use.

10.0.4 <u>Condition 4</u>. When an item becomes altered or selected.

10.0.5 <u>Condition 5</u>. When interchangeable and/or repairable assemblies contain a non-interchangeable part, its next higher assembly part number, and all progressively higher assembly part numbers are changed, up to and including the assembly where interchangeability is re-established.

10.0.6 <u>Condition 6</u>. Service/Supportability (as determined by ILS/Supportability)

10.1 If one of the above conditions is present, the affected item's part number, it's using assembly part number and subsequent assemblies shall be re-identified (i.e. "rolled"), until interchangeability is re-established.

10.2 The Subcontractor shall notify the Buyer of changes. The Subcontractor may use any "notification of change" form that is currently within the Subcontractor CM process documentation. The minimum content required for any change submitted to the Buyer's CCB is:

10.2.1 A clear description of the need for change, the rationale and justification, and consequences of not doing the change

10.2.2 A clear description of the proposed change (including any analysis or supporting data as needed)

10.2.3 A listing of the documents impacted

10.2.4 Priority and/or urgency of the change and schedule impact (if any)

10.2.5 Proposed effectively (recommended hardware implementation/incorporation cut-in point)

10.2.6 Requested approval date

10.2.7 Estimated cost increase or savings (if any)

10.2.8 Statement that the change does not affect safety, reliability, or long-term storage.

11.0 Deviation or Waiver Requests. Deviations are temporary departures from released engineering/requirements written prior to manufacture.

11.1 Waivers request acceptance of a nonconformance to released engineering drawings and requirement documents discovered during or after manufacture. The Subcontractor shall classify deviations or waivers in accordance with Table 1 below.

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Classification	Description	Approval Level
Minor	The request for Waiver or Deviation consists of a departure that does not involve any of the factors listed as critical or major.	Minor Waiver – Material Review Board (MRB) if delegated to the supplier via the PO; or at the buyer's. Minor Deviation – buyer.
Major	A major Waiver or Deviation represents a departure affecting: - Performance or operational limits - Structural strength - Interchangeability, reliability, survivability, or durability of the Item or its repair parts - Health or Environmental characteristics - Weight or size - A very minor effect on support elements or product operating characteristics.	Buyer Configuration Control Board (CCB)
Critical	A critical Waiver or Deviation represents a departure that has: - An impact on safety - A profound impact on the factors listed as Major - A significant effect on the operational capabilities or supportability of the product.	Buyer Configuration Control Board (CCB)

Table 1.

12.0 Deviation or Waiver Classifications

12.0.1 The Subcontractor may use any "request for deviation or waiver" form that is currently within the Subcontractor CM process documentation for submittal to the Buyer. The minimum content required for any request for deviation or waiver submitted to the buyer's CCB is:

12.0.1.1 Identifiers of the product(s) and components affected,

12.0.1.2 A clear description of the variance condition including impacts to performance, operation, maintenance, servicing, etc.,

12.0.1.3 Reasons and justification for the variance,

12.0.1.4 Priority or urgency,

12.0.1.5 Proposed effectively of the variance (limited quantity or time period),

12.0.1.6 Corrective action to prevent recurrence and or to eliminate the variance, and

12.0.1.7 Consideration, if any, for accepting variant products

13.0 Configuration Status Accounting (CSA)

13.0.1 Configuration Status Accounting (CSA) provides information relative to the status of engineering initial and change, part, document, and software usage information/history, and is performed in accordance with this CM requirements flow down document. The Subcontractor's CSA system shall be capable of generating various reports required to support the Buyer. This may include sufficient elements of configuration information to support reports of drawing and advance change status, document usage, and numerical and indentured part/document lists. CSA records shall be maintained throughout the life of the contract defined in the PO.

13.0.2 As-built traceability shall be in accordance with the Subcontractor's internal policy. The Subcontractor shall establish and maintain an as-built record (or database), which shall contain the unique, auditable history of each item being built. Traceability for each approved, incorporated change shall be through the buyer's delivered item serial number. Once signatures are captured during Source Inspection, the As-Built list shall be maintained.
The Subcontractor shall maintain CM metrics in accordance with their internal company command media.

14.0 Configuration Control of Software and/or Firmware

14.0.1 The Subcontractor shall ensure that any software contained within the delivered Item specified on the PO has been fully controlled by CM. CM of program firmware is required and shall be controlled by the Subcontractor in the same manner as any software product. The Subcontractor shall specify the details for Software CM in the CM Plan or the software development plan. Software code shall be in a CM controlled environment and changes to that code must be first approved by the CCB. Version description documents shall be created for each code release and retained for the buyers review if required. The product As-Built record submitted with each delivered unit shall include the Software Version ID.

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