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PAGE 1 of 29

TITLE: **Quality Assurance (QA) Codes**RELEASE DATE: **07/28/2022**EFFECTIVE DATE: **LN GO LIVE**

ESA HEADQUARTERS

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Business Partner Notice

The following quality codes and requirements become an integral part of the purchase order to the extent specified and supplement existing terms and conditions of the purchase order. Absence of requirements on a purchase order does not relieve responsibility of the Supplier from complying fully with applicable specifications and/or drawings. Failure to comply with these requirements may adversely affect the Supplier quality rating, disqualification, and/or result in the return of the complete shipment at the Supplier's cost. Herein "Seller" pertains to Supplier and "Buyer" to Elbit Systems of America.

Instructions for Suppliers

This document contains the list of quality requirements, which are referred to as QA Codes (Quality Assurance Codes). The numbers in this document represent the QA Code followed by the definition and/or requirement. A selection of relevant QA Codes are appended to a purchase order (PO) line according to the item type.

This document provides detailed instructions related to the QA Codes appearing on each purchase order line. You shall see the "Attached QA Codes" at the bottom of each PO line and sequence on the printed PO form.

Suppliers are required to review those QA Codes for each PO Line, correlate them with the codes (numbers) in this document, and act accordingly to the instructions and requirements detailed herein.

For each QA Code that requires Supplier to provide a conformance document to Buyer, you are required to upload each document **separately and in a different file name** through the Supplier Exchange (Elbit's Supplier Portal) according to the PO number, line number, sequence number (if any) and document name or type per the Supplier Exchange documents upload screen. If Supplier is not working through the Supplier Exchange then send hard copies of the required documents with the shipment.

In addition, you will find QA requirements in the "General Terms and Conditions" document attached to each PO.

Those QA Codes per each PO line are additional to any other QA requirements appearing in any other contractual documents like Ts&Cs, SOW, Engineering, etc.



ESA HEADQUARTERS

Table of Contents (Hyper-Linked)

QA Code		Page
1	<u>General Quality Requirements.....</u>	4
4	<u>Certificate of Conformance.....</u>	13
5	<u>Dimensional Test Data.....</u>	13
6	<u>Functional Test Data.....</u>	13
7	<u>Chemical & Physical Analysis.....</u>	13
8	<u>Safety Data Sheet (SDS).....</u>	13
9	<u>Foreign Government Source Inspection.....</u>	14
10	<u>Customer/Customer's Third party Inspection.....</u>	14
11	<u>First Article Inspection (FAI) according to AS9102 Requirement.....</u>	14
12	<u>Castings & Forgings.....</u>	14
13	<u>Radiographic Inspection.....</u>	14
14	<u>Inspection at Source</u>	15
15	<u>US Government Source Inspection.....</u>	15
16	<u>Government Source Surveillance.....</u>	15
17	<u>Failure Analysis / Summary of Maintenance Actions.....</u>	15
18	<u>Raw material Identification.....</u>	16
22	<u>Manufacturing Date Code Rubber Items.....</u>	16
23	<u>Packaging and Preservation.....</u>	16
24	<u>Electrostatic Discharge (ESD).....</u>	17
26	<u>Limited Shelf Life Items.....</u>	17
28	<u>SPC Data Report.....</u>	17
31	<u>Supplementary QA Provisions (SQAP).....</u>	17
32	<u>Statement of Work (SOW)/Corporate Work Transfer (CWT).....</u>	17
33	<u>High Strength Fastener Quality Assurance Provisions.....</u>	18
34	<u>As Planned/As Built Report.....</u>	18
35	<u>Independent Test Lab Testing.....</u>	18
37	<u>Obsolete/Diminished Material, Broker/Independent Distributor purchases.....</u>	18
38	<u>Manufacturing Dates for Solderable Components.....</u>	18
39	<u>Record Retention - 10 Years.....</u>	19
44	<u>Tooling or Test Equipment.....</u>	19
45	<u>UID Label.....</u>	19
46	<u>Civil Aviation Records Retention.....</u>	19
47	<u>Refrigerated Delivery.....</u>	19
48	<u>Lead Free Components.....</u>	19
49	<u>Frozen Delivery.....</u>	20



ESA HEADQUARTERS

51	<u>Special Processes.....</u>	20
52	<u>Calibration Certificate.....</u>	20
53	<u>Subcontractor Parts Management Control Plan.....</u>	20
54	<u>Software developed - SRS, VDD, STD, STR.....</u>	20
55	<u>Software developed - IRS, SPS, SDD.....</u>	20
56	<u>Test Readiness Review (TRR).....</u>	20
58	<u>AS 9145 APQP / PPAP.....</u>	21
59	<u>Safety Product.....</u>	21
60	<u>Lithium Battery.....</u>	21
61	<u>Radio Frequency Identification (RFID).....</u>	21
62	<u>Supplier Sub-tier Control.....</u>	22
B1	<u>Sub-tier Paint requirements.....</u>	22
B2	<u>Boeing Company D1-4426 Approved Processors.....</u>	23
B3	<u>CARC Paint Traceability Marking.....</u>	23
B4	<u>BDS Seller Special Tooling Requirements.....</u>	23
B5	<u>Deliverable Software Requirements.....</u>	23
B6	<u>MRB on Buyer's government contracts.....</u>	23
CA	<u>Incoming Assessment.....</u>	24
CM	<u>Incoming Computerized / Precision Measurement.....</u>	24
CS	<u>Incoming Counterfeit Screening.....</u>	24
FA	<u>FAA - Drug and Alcohol Abuse Program.....</u>	24
FB	<u>FAA Overhauled/Repaired/Modified Items.....</u>	25
F1	<u>First Article Inspection / Test (FAI/T) 90 day.....</u>	25
F2	<u>Material Handling (MIL-STD-2073).....</u>	25
IC	<u>Incomplete Item.....</u>	25
L1	<u>MFC-PR-001 - Revision Level Control.....</u>	25
L2	<u>MFC-TR-002 - Batch traceability.....</u>	25
L3	<u>MFC-DC-021 - Seller Control of Sub-Tier Special Processes.....</u>	25
L4	<u>MFC-CC-001 - Supplier Process Change Control.....</u>	26
L5	<u>MFC-IN-003 - First Article Inspection (FAI) 12 Months.....</u>	27
L6	<u>LMMFC Special Processors.....</u>	27
L7	<u>MFC-DC-023 - Special Process - Seller Approved for Major Sub-Contractors.....</u>	27
N1	<u>CCA - Tin Whisker Mitigation Plan and Lead Free Control Plans.....</u>	28
N2	<u>Record Retention - 12 Years.....</u>	28
N3	<u>Pure cadmium or pure zinc shall be prohibited.....</u>	28
QAR	<u>Government Inspection at Incoming.....</u>	28
R3	<u>BGA X-Ray inspection</u>	28

**ESA HEADQUARTERS****1. GENERAL QUALITY REQUIREMENTS****I. GENERAL REQUIREMENTS**

- A.** Seller shall make specified quality data and/or approved design data available in the English language. Seller shall maintain an English language translation of (1) its quality manual, (2) the operating instructions that implement the quality manual requirements, and (3) an index of Seller's procedures that contain quality requirements. Buyer may require additional documentation to be translated, including but not limited to: shop orders, technical specifications, certificates, reports and nonconformance documents.
- B.** Seller's Quality Management Systems shall be compliant to the current requirements of ISO 9001 or AS9100 that assures the materials supplied under this purchase order meet the requirements of the purchase order and any referenced or attached specifications or drawings. Qualification of personnel is required; specifically for such processes as soldering, brazing or NDT. This system shall also provide for control of all Measuring and Test Equipment, used for material acceptance, and periodic calibration traceable to National Institute of Standards and Technology (NIST) or equivalent international standard. The requirements contained herein are in addition to such other inspection or quality control requirements, which may be incorporated in this purchase order through attachment of specifications, drawings, statements of work, etc. Seller shall notify buyer of any adverse changes in quality system status resulting in the loss of 3rd Party registrar's certification within 30 days.
- C.** The Seller shall provide for review of the BUYER, Inc. purchase order to delineate all contractual requirements and assure that all contractual requirements are included in manufacturing planning, inspection, and test instructions.
- 1.** The Seller shall have systems and methods to assure full compliance to all quality purchase order (P.O.) notes and QA Codes applicable to this P.O. When products or services applicable to this P.O. are procured by the Seller from sub- tier Suppliers, the Seller shall flow the quality P.O. note and QA Code requirements as necessary to assure full compliance is achieved.
 - 2.** Seller shall notify Buyer, in writing, when any Key Characteristic (KC) interchangeable- replaceable features, fracture critical features, durability critical features, maintenance critical features, safety critical features, mission abort critical features or changes affecting fit, form, function or spares are to be subcontracted.
 - 3.** Seller shall have procedures for determining the capability of their sub-tier prior to issuing a PO to sub-tier. Seller shall assure PO flow down of applicable quality and technical requirements, and adequate methods of assuring compliance. Seller's Suppliers shall be required to flow down and verify requirements of supplies/services they subcontract.
 - 4.** Seller's purchase orders to sub-tiers shall clearly reflect and define all processing and nondestructive testing requirements including special procedures, inspections, tests and acceptance criteria as required by the Buyer's purchase order or attached specifications and drawings.
 - 5.** In case of a "drop" shipment (i.e. . the delivery point is not to the site issuing the PO) a copy of all documentation required per the PO must be provided to the issuing site with the packing slip and invoice before the product can be accepted or payment made to the Supplier. (This includes but is not limited to: Certificate of Conformance, FAI, Source Inspection Reports, As Planned / As Built, test data, etc.)
- D.** Seller shall establish controls to ensure that material subject to age control shelf life, or environmental controls are properly identified, monitored and maintained.
- E.** Seller shall maintain a documented calibration system for the calibration and maintenance of tools, jigs, inspection and test equipment. Seller's calibration system shall be compliant to prevailing industry requirements in accordance with Seller's Quality Management System to include ISO-17025, ISO10012:2003 or ANSI Z540.

**ESA HEADQUARTERS**

- F.** Seller shall establish and maintain an inspection system that provides for receiving inspection, and manufacturing acceptance inspections and tests needed to assure that materials delivered by Seller are in strict compliance with all contract / purchase order requirements. The Seller's inspection system shall provide assurance of product conformance for both materials produced at his facility and those purchased from subcontractors.
- G.** Seller shall provide for the safety and convenience of Buyer, Buyer's customer and/or Government or appropriate regulatory agencies, access and assistance, without additional cost, to any and all areas, where work is being or is scheduled to be performed under this Purchase Order. Buyer and or Buyer's customer may perform in-process inspection, product audits, and system surveillance at Seller's facilities as part of verification of conformance to contract. Access denial could result in inactivation of Seller's approval.
- Seller shall provide, at no increase in price, cost or fee to Buyer, Buyer's customer and/or Government or appropriate regulatory agencies, suitable facilities at Seller and Seller's subcontractors' manufacturing locations for Buyer, Government and regulatory agency representatives to perform compliance verification.
- H.** Work under this PO is subject to Buyer's periodic audit of Seller's compliance with Seller's internal procedures and other documents applicable to this PO.
- I.** Seller is responsible, prior to delivery of the first production lot, to complete an FAI in accordance with Aerospace Standard AS9102. A completed copy of the AS9102 forms, as well as other applicable supporting documentation, shall be presented to BUYER with the FAI lot. See QA Code 11 for complete details.
- 1.** Seller shall notify BUYER Procurement and Supplier Quality of any changes in facility location, or design or process that may affect fit, form or function of the part, at which time a new First Article is required. Seller's First Article Inspection process shall be in compliance with AS9102, latest revision.
 - 2.** Seller shall notify BUYER Procurement in writing of any pending or changes made or its subcontractors make to an item order under a BUYER Source Control or Specification drawing. BUYER written approval / concurrence of said change is required prior to implementation.
 - 3.** If applicable Seller shall comply with Lockheed Martin Quality Clause Q2A First Article Inspection.

When performing First Article Inspection (FAI) the instructions below details the specific methods and expectations of the Supplier for verification of the Supplier's assembly and set up processes and to verify that product conforms to the drawing, Bill Of Material (BOM) or part list requirements.

CCA GENERAL FAI REQUIRMENTS:

BUYER requires evidence that the Supplier has configuration control for non-deliverable software and has verified that the files such as SMT pick and place, Contact systems, (AOI) – Automated Optical Inspection systems or similar equipment electronic media files are to the current Revision of the Bill Of Material (BOM) and Reference Designator Listing (RDL) if applicable. A printed copy shall be provided as objective evidence with the FAI documentation and shall have the signature of the Supplier's Quality or Engineering representative that the data is correct. A work printout check sheet should be used or provided such as a Word or Excel spread sheet for ease in verification and identification of the correct quantity of components, part numbers and reference designators to aid inspection verification of the BOM and Suppliers AS9102 documentation.

BUYER Supplier Quality engineering shall be notified a minimum of 10 days in advance of the First Article productions run so that arrangements can be made for the BUYER representative to participate in the initial FAI set up processes, verification of soldering (manual and automated), Programming, In Circuit Testing (ICT) processes prior to coating and Final Acceptance Testing.

First Article Inspections (FAI) may be performed on a minimum of 3 PWA from the first lot produced by Product part number or as per the BUYER Program SOW issued to the Supplier on the Purchase Order or per the drawing and BOM requirements.

Unless otherwise directed in writing, the Subcontractor shall be at their risk to produce additional products until BUYER has accepted the FAI.

**ESA HEADQUARTERS****CCA PROCESS VALIDATION / VERIFICATION:**

First Article Process documentation requirements apply to the Supplier's manual Through Hole (TH) component insertion by hand assembly or Semi-automated processes such as Contact Systems and automated Surface Mount Technology (SMT) assembly for verification of component placement by part number and reference designator. The Supplier should provide documentation showing Objective Evidence that the process is repeatable and that the Supplier has performed verification of the process. Production files or Work Instructions should give instructions for manual processes for component installations and hand soldering. Computer software or Supplier non-deliverable files used in the set up & assembly process shall be configuration controlled. A copy or print out of the component set up or Pick and Place file used in the automated SMT assembly process shall be provided for used by the BUYER Source Representative for verification of component placement Reference Designators part numbers with the current revision BOM / PL. This documentation shall become part of the First Article Documentation as objective evidence.

CCA (TH) THROUGH HOLE & HAND COMPONENT INSERTION PROCESSES

For assemblies with TH components using automated process such as a contact system the Supplier shall provide a copy of the machine set up for SI verification of the component Reference Designators and part numbers with the current Revision of the Bill of Material (BOM). This form is used to document the verification of the Supplier documentation requirements for either in-process activities or final acceptance of the PWA assembly set up process. For manual hand or add-on components and soldering process should be identified in Production Files or Work Instructions showing documented process for repeatability.

CCA SMT – SURFACE MOUNT TECHNOLOGY / AOI – AUTOMATED OPTICAL INSPECTION

The Supplier is responsible for and shall verify that the Ref Designators listed and component part numbers in the SMT Pick and Place file or AOI matches the current BOM Revision. Objective evidence is required as part of the FAI documentation package. This shall consist of a print out of the Supplier pick and place file or AOI program that has been checked against the BUYER BOM for component part number correctness. This shall have the signature of the Process engineer or Quality representative stating all components have been verified to the current BOM revision including writing the revision number that was verified. The Reference Designator Listing (RL) shall also be used when the BOM does not list all the reference designators. This shall be verified and checked for agreement to the BOM part numbers and quantities. Note: The BOM takes precedence over the RL if there is a conflict of part numbers and BUYER shall be notified immediately for clarification and corrections as needed.

During First Article Set up of the SMT feeders reel locations the Part number shall be verified to be in agreement with the current BOM and documentation shall be provided listing the feeder locations for each of the part numbers. Note: Suppliers using automated SMT equipment such as a "My Data" utilizing "Smart Reels" the SMT reel placement may vary during other production runs.

The copies of objective evidence shall become part of the FAI documentation. A copy of the FAI documentation shall be included with first product produced and shipped to BUYER. If desired the FAI documentation package can be shipped to BUYER Supplier Quality Engineering attention for retention and FAI program FAI completion. BUYER Supplier Quality should be contacted so they are aware that the documentation is being shipped separately.

FAI MECHANICAL – CASTINGS, MACHINED CHASSIS & MACHINED PARTS:

All dimensions of the drawing must be reported including the dimensions derived from any attached media, i.e., SAT files that have been verified by the Supplier.

A copy of the annotated drawing and any Supplier generated drawings/sketches used to identify dimension locations referenced on the dimensional report must be included in the FAI package. It is preferred that dimensions derived from attached media, i.e. SAT files be reported on Form 3, and recorded in the same unit of measure denoted on the drawing (inches or mm) and are clearly marked as SAT dimensions.

The following will be required and must be submitted for all FAI's:

1. Form 1: Part Number Accountability
2. Form 2: Product Accountability
3. Form 3: Characteristic Accountability and any dimensional attachment used to record dimensions derived from the SAT file.

**ESA HEADQUARTERS**

4. Objective evidence of material certifications and special process certifications
 5. Copy of the annotated (ballooned) drawing, including any Supplier generated drawing/sketches
 6. Certificate of Conformance
 7. Source Inspection Report
- J.** Seller shall be aware that it is illegal, under United States law, to knowingly market or sell counterfeit goods utilizing the logo, trademark, trade dress or other distinctive features of another's products or services that confuse the public regarding the true nature or origin of the product or service. Buyer will not submit payment for Counterfeit material and such material will be destroyed by Buyer.
- K.** All components and finishes shall be as indicated on the BUYER supplied drawing and parts list. BUYER may have customer restrictions as to allowable surface finishes. No unapproved substitutions may be made. If conflicts are apparent or the indicated source of supply is not available, seller shall contact BUYER for clarification or approval. Lead free soldered designs must be fully qualified prior to production use.
- L.** Corrective and Preventive Action - Seller agrees to provide a formal response to BUYER issued Supplier Corrective Action Requests (SCAR) or failure analysis reporting, as required by engineering specification or contract data item requirements, within the timeframe indicated on the SCAR and in the format specified. Seller is also requested to contact the Buyer when the material associated with a SCAR investigation has not been returned or if more time is required to adequately perform an investigation. Upon receipt, SCARs will be evaluated for completeness and acceptability. Failure to provide a formal SCAR response by the established due date will result in a delinquent SCAR status which will adversely affect your Supplier rating and potentially result in loss of future business with BUYER.
- Seller shall maintain a documented system for determining root causes of documented defects and obtaining corrective action both internally and from its sub-tiers. The Seller is accountable for effectiveness of corrective and preventive actions taken.
- Buyer retains the right to conduct corrective action verification at the primary Seller and/or sub-tier Supplier facility to assess effectiveness of implemented corrective action.
- NOTE: Material currently undergoing corrective action investigation processing up to and including verification of corrective action shall not be shipped without the authorization of BUYER Quality Assurance.
- M.** When specified by Contract, PO, SOR/SOW or specification, the Seller shall certify that all items containing Rubber have been tested in accordance with Mil-Std-810 (current revision) and shall provide a copy of the original manufacturer's certifying documentation upon delivery for each lot.
- N. Foreign Object Debris/Damage (FOD) Prevention**
1. Seller shall maintain a FOD prevention program IAW AS9146 Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations. Seller's FOD prevention program shall include the review of design and manufacturing processes to identify and eliminate foreign object entrapment areas and paths through which foreign objects can migrate. Seller shall ensure work is accomplished in a manner preventing foreign objects or material in deliverable items. Seller shall maintain work areas and control tools, parts and materials in a manner sufficient to preclude the risk of FOD incidents. Seller shall document and investigate each FOD incident and ensure elimination of the root cause of each such incident.
 2. Buyer shall have the right to perform inspections, verification and FOD Prevention Program audits at Seller's facility to ensure program documentation and effectiveness. Seller shall identify a FOD control person responsible for implementing FOD prevention, awareness and training.
 3. Seller's FOD prevention program shall include Seller's periodic self-assessment of its internal FOD prevention practices, including subcontractors FOD Prevention Program at every tier, to measure effectiveness of program compliance to requirements.

TITLE: **Quality Assurance (QA) Codes**RELEASE DATE: **07/28/2022**EFFECTIVE DATE: **LN GO LIVE****ESA HEADQUARTERS**

4. Seller's FOD prevention program shall provide annual FOD training to Seller's employees. At Buyer's request, Seller shall provide records of such self-assessment and training to Buyer.
5. Seller's FOD prevention program shall, at a minimum, contain the following elements:

1. Design & Manufacturing Process Review	2. Tool Accountability
3. Performance Measurement	4. Hardware Accountability
5. Training	6. Lost Items
7. Material Handling and Parts Protection	8. Physical Entry Control into FOD Critical Areas
9. Housekeeping	10. FOD Focal Point(s)
6. Seller shall ensure that the requirements of this Quality Clause are flowed down to Seller's subcontractors at every tier.
7. Prior to closing inaccessible or obscured areas and compartments during assembly, Seller shall inspect for foreign objects/materials. Seller shall ensure that tooling, jigs, fixtures, and test or handling equipment are maintained in a state of cleanliness and repair sufficient to prevent FOD.

By delivering Items to Buyer, Seller shall be deemed to have certified to Buyer that such Items are free from any foreign materials that could result in FOD.

O. Counterfeit Mechanical parts; Assuring Acquisition of Authentic and Conforming Materiel

Seller agrees and shall ensure that Counterfeit Parts are not delivered to Buyer. Supplier shall comply with requirements of SAE, AS6174.

P. Counterfeit Electronics parts; Avoidance, Detection, Mitigation and Disposition

1. Seller agrees and shall ensure that Counterfeit Parts are not delivered to Buyer.
2. Seller shall establish and maintain a Counterfeit Electronic Part Detection and Avoidance System in compliance with the current revision of applicable industry standards SAE AS5553 and/or SAE AS6081. In accordance with DFAR 252.246-7007, Supplier shall be compliant to paragraphs (a) through (e) of DFAR 252.246-7007 regardless of the Cost Accounting Standard as mentioned in DFAR 252.246-7007. Supplier shall flow down these counterfeit detection and avoidance requirements to subcontractors at all levels in the supply chain that are responsible for buying or selling electronic parts or assemblies containing electronic parts, or for performing authentication testing. The purpose of this document shall be to prevent the delivery of counterfeit parts and control parts identified as counterfeit. A copy of AS5553 may be obtained from <http://standards.sae.org>. DFAR 252.246-7007 is available at <https://www.federaregister.gov>.
3. Sellers eligible for utilization of the Government-Industry Data Exchange Program ("GIDEP") shall utilize the GIDEP process to alert the industry of encountered counterfeit parts.
4. Seller shall only purchase products to be delivered or incorporated as Work to Buyer directly from the Original Component Manufacturer (OCM)/Original Equipment Manufacturer (OEM), or through an OCM/OEM authorized distributor chain. Parts shall not be acquired from independent distributors or brokers unless approved in advance in writing by Buyer.
5. Seller shall immediately notify Buyer with the pertinent facts if Seller becomes aware or suspects that it has furnished Counterfeit Parts. When requested by Buyer Seller shall provide OCM/OEM documentation that authenticates traceability of the affected items to the applicable OCM/OEM.
6. In the event that Work delivered under this Contract constitutes or includes Counterfeit Parts, Seller shall, at its expense, promptly replace such Counterfeit Parts with genuine Parts conforming to the requirements of this Contract. Notwithstanding any other provision in this Contract, Seller shall be liable for all costs relating to the removal and replacement of Counterfeit Parts including without limitation Buyer's costs of removing Counterfeit Parts, of reinserting replacement Parts and of any testing

**ESA HEADQUARTERS**

necessitated by the reinstallation of Parts after Counterfeit Work has been exchanged. The remedies contained in this paragraph are in addition to any remedies Buyer may have at law, equity or under other provisions of this Contract.

7. This clause applies in addition to any quality provision, specification, statement of work or other provision included in this Contract addressing the authenticity of Work/Parts. To the extent such provisions conflict with this clause, this clause prevails.

Q. Seller shall evaluate each nonconformance for its potential to exist in previously produced or delivered Items, or Items in transit to Buyer. If a nonconformance exists, Seller shall notify Buyer, in writing, within 24 hours for issues impacting flight safety or for Items in transit to Buyer, and, in writing, within 5 working days for all other issues.

R. Part Marking Requirements

1. Supplier shall mark all deliverable products as required by the purchase order, engineering drawing, specifications and manufacturing planning.

As a minimum, parts manufactured for Buyer, shall be identified with the following information, but are not limited to:

1. Part Number
2. Drawing Revision
3. Date of Manufacture
4. FAA-PMA for all PMA parts, as applicable

2. External Packaging Marking

External containers must be marked with the following shipment information unless specifically exempted or otherwise specified in the contract, purchase order, statement of work, drawing or regulatory requirement:

1. Name and address of Supplier facility
2. BUYER Part Number (or Reference Number only if there is not an BUYER part number on the purchase order)
3. BUYER Purchase Order Number
4. Quantity
5. Serial Number, Date Code, or Lot/Batch Number (as applicable)
6. Hazardous Material (HAZMAT) marking (if applicable)

3. Internal Packaging Marking

Every container; reel(s), tray(s), tube(s), bag(s), etc. must be labeled with:

1. BUYER part number
2. Serial Number
3. Date Code, or Lot/Batch Number (as applicable)
4. Quantity (if more than one)

S. Solder per J-STD-001

All electronic and electrical assemblies will be soldered per J-STD-001 current revision. The Seller shall flow this requirement to all sub-tier Contractors that perform solder processes.

T. Inspection Plan

Seller shall utilize sample inspection level of AQL 1.5 per ESA-P-09-10 Inspection Sampling Plan for determining the quantity of product per batch/lot to inspect unless there is a Quality Assurance Provision (QAP) with a sample plan in which case the QAP sample plan is to be followed. Key Characteristics, when identified, shall be inspected at 100%. If the sample is unacceptable, Buyer reserves the right to return all or part of the lot for credit or replacement. C=0 principle applies at Supplier and sub-tier facilities on applicable material (one defect requires rejection of representative lot). A Nonconformance Report (NCR) will be generated and sent to the Seller with a timely corrective action response required back to the Buyer.

**ESA HEADQUARTERS**

- U.** Form ESA-F-13-32 Supplier Material Review Request (SMRR) shall be used by the seller to submit any quality deviations for buyer's review and approval prior to shipping any nonconforming product. If acceptable an approved copy of the SMRR must accompany each shipment.
- V.** Source Inspection Delegation
Suppliers and Sub-tiers may not be delegated for Source Inspection unless they comply with AS9117 (Delegated Product Release Verification).

II SPECIALTY METALS CLAUSE

- A.** The purpose of this clause is to advise BUYER Suppliers of metal parts that it is necessary to comply with specialty metals requirements associated with DoD Contracts. The DFARS 252.225 clauses 7008 and 7009, regarding Acquisition of Specialty Metals, implement a portion of the Berry Amendment and the Dodd Frank Wall

Street Reform and Consumer Protection Act Section 1502, federal laws (10 USC 2533a and HR 4173). It requires certain specialty metals (such as Steel, Metal Alloys consisting of Nickel or Cobalt, Titanium, Stainless Steel, or Zirconium) incorporated in articles delivered under DoD contracts be smelted or produced in the United States or a qualifying country (or incorporated in an article from a qualifying country). Qualifying countries are listed in DFARS 225.872-1. The DFARS can be found on the following website:

<http://www.acq.osd.mil/dpap/dars/dfars/html/current/252225.htm>.

- B.** All constructions and finishes containing pure cadmium or pure zinc shall be prohibited.
- C.** Electronic, electrical, electromechanical, and mechanical piece parts and assemblies, including the internal fabrication of hardware, delivered shall not have pure tin finishes. Additionally, any tin-lead (SnPb) plating or solder processes/processing shall result in a finish of no less than 3% lead composition. This applies to component leads and terminations, carriers, bodies, cages, brackets, housing, mechanical items, hardware (nuts, screws and bolts) etc. This does not apply to MIL-Spec parts or Customer drawings that allow the use of Tin (Sn) with less than 3% lead (Pb). CoC shall be provided verifying the delivered product meets the above listed composition requirements.

Seller shall have contacted the original equipment mfg. to verify that the specific mfg. lot date of delivered product meets the specified minimum lead (Pb) requirement if Tin (Sn) is present in the product.

Seller has verified by actual sample testing (x-ray fluorescence testing is preferred) or other industry acceptable method that a minimum of 3% lead (Pb) is present in any process that uses tin (Sn).

Seller shall be responsible for managing the compliance with this requirement with subcontractors or sub-tier suppliers, and provide evidence of the appropriate flow-down and management of this requirement to the satisfaction of the buyer or designate. Exceptions must be authorized in writing by the Buyer.

III BUYER FURNISHED MATERIAL

- A.** Material furnished by the Buyer shall be handled and stored in accordance with applicable specifications and requirements with due regard for protecting the material from damage due to handling and exposure.
- B.** Seller shall visually inspect such material for accountability and damage from shipment. Buyer shall be responsible for any nonconformance to requirements.
- C.** With each delivery containing Buyer furnished material, Seller shall certify as part of the statement of quality as follows: **"The material used on this order includes material furnished by Buyer and no unauthorized substitutions have been made."**

**ESA HEADQUARTERS**

- D.** When repairing property furnished by the Buyer, the seller will use only new materials unless written permission is provided by the Buyer.
- E.** If the seller receives part specific written permission from the Buyer to use used or reconditioned materials, then the Seller will maintain configuration management records in accordance with AS9100 and guidance from ISO10007.
- F.** If the seller receives direction from the buyer to scrap Buyer property, then the Seller will prepare a Scrap Certificate of assemblies scrapped including:
- 1.** Part number(s),
 - 2.** Serial number(s), and
 - 3.** Part numbers, nomenclature and serial numbers of any subassemblies or parts missing from scrapped assemblies. Seller shall not "salvage" any parts from items to be scrapped without part specific written permission from the Buyer.
 - 4.** The Seller's designated representative's printed name and signature
 - 5.** Scrap Certificate Date
- G.** Government Owned Property - Suppliers who maintain or manage Government Owned Property on-site will have documented Government Property Control Procedures. Additionally, Suppliers will provide to ESA the latest copy of their Government Property Management System Analysis (PMSA).

IV BUYER AT SOURCE REQUIREMENTS

When Buyer Source Inspection is specified in this Purchase Order, Seller shall comply with the following:

- A.** All work performed under this PO is subject to BUYER's inspection and test at the Supplier's facility prior to shipment. BUYER's representative may elect either to perform inspection or test per a sampling plan or up to 100% inspection. Seller shall present with each shipment, for review by the Buyer representative, the final inspection/test results, as applicable, and the required certifications.
- B.** When modifications, repairs or replacements occur after Seller's final inspection or testing, Seller's Quality Assurance shall perform re-inspection and retest of affected characteristics prior to presentation for Buyer inspection.
- C.** Seller shall obtain evidence of Buyer's Field Representative's acceptance, prior to shipment (signature OR stamp) on BUYER's Source Inspection Report.
- D.** Seller shall include a copy of the Source Inspection Report with each shipment of accepted materials.
- E.** Seller shall provide a Certification of Conformance (COC), or Statement of Quality (SOQ) to attest that all supplies presented meet the applicable purchase order terms and conditions. This certification shall bear the signature of an authorized agent of the Seller.

For purposes of this general statement of quality, computer-generated or facsimile- reproduced signatures will be considered to have the same force as an original signature.

This general statement of quality shall be in addition to any specific certifications required to be delivered with the shipment by specifications or other quality documents. All statements of quality shall accompany the shipment.

V. MATERIAL REVIEW AUTHORITY

- A.** For Seller-designed Items, Seller has Material Review Authority, except for one or more Non-

**ESA HEADQUARTERS**

conformances that affect a parameter controlled by Buyer drawing or specification, where form, fit or function, interchangeability, Critical Safety Characteristic ("CSC") related to Critical Safety Item ("CSI") service life or reliability is affected. Seller shall submit dispositions of non-conformances, if any, affecting any such parameter(s) to Buyer's MRB.

- B.** For Buyer-designed Items, Seller disposition authority is limited to scrapping of Items, eliminating the nonconformance by rework to specification, or returning to Supplier. On Items of Buyer design, Seller shall document non-conformances for submittal to Buyer's MRB for dispositions as required by this PO. Seller shall not continue processing Item(s) or incorporating any non-conformances into any Item, process, procedure or data that affects a parameter controlled by Buyer drawing or specification or affects form, fit or function, interchangeability, service life or reliability unless and until Seller has received prior written approval from Buyer. Upon prior written approval from Buyer, Seller's continued processing shall be limited to subsequent operations that do not hide, alter or limit the ability to inspect, disposition or repair Item.
- C.** The Seller shall not make a "USE AS IS" decision without BUYER's approval.
- D.** Regardless of design control (Buyer or Seller) all departures from the Buyer's specified requirements, or any nonconformity that may adversely affect the fit, form, function, reliability, or safety for the deliverable item must be submitted to Buyer for MRB disposition.
- E.** When a nonconforming item is reworked or repaired it shall be subject to re-verification/re-inspection by the Seller to demonstrate conformance to the requirements and to assure no other nonconformity was incurred during the rework or repair process.
- F.** Items with disposition of "Scrap" shall be conspicuously and permanently marked (painted red) until physically rendered unusable. Scrap items shall not be shipped from Seller.
- G.** Seller's nonconforming material reports shall be maintained by the Seller and made available for review by Buyer and Buyer's Customers. Buyer and Buyer's Customers reserves the right to dispute Seller's MRB actions and/or audit the Seller's MRB procedures, processes and documentation at any time during the performance of this contract.

VI BUYER-FURNISHED, SELLER-MANUFACTURED OR SELLER-OWNED TOOLING

Seller's documented quality system shall include written procedures for the control, maintenance and calibration of special tooling, jigs, inspection and test equipment, and other devices used in manufacturing processes.

VII CHANGES TO SELLER'S OPERATIONS

- A.** Seller shall promptly notify Buyer's authorized Procurement Representative and Supplier Quality Representative of intended or actual changes in the Management Representative with assigned responsibility and authority for its quality management systems. Seller shall also promptly notify Buyer's authorized Procurement Representative and Supplier Quality Representative in writing of intended or actual major change to its quality management system that may affect the conformity of its goods or services. Each change to Seller's quality management systems is subject to review by Buyer.
- B.** Quality and inspection records shall be established and maintained by the Seller to provide evidence of conformity to requirements and the effective operation of the Quality management system. Records of manufacturing, inspection, and test (Objective Quality Evidence) shall be maintained and stored by Seller for a minimum period of **ten (10) years** after completion or termination of this Purchase Order/Contract (unless otherwise directed by the PO). The COC's, SOQ's final inspection/test results, and all objective evidence which substantiates Seller's certifications, including certification for buyer furnished material, shall be retained on file at Seller's facility. When additional quality requirements so specify, appropriate data shall be provided with each shipment. This data shall be readily available for subsequent on-site review by Buyer.

At Buyer's election, and at no additional price, cost or fee, Seller shall provide such records to the Buyer,

**ESA HEADQUARTERS**

Buyer's Customers and/or appropriate regulatory agencies during the performance of this PO and for a minimum period of ten (10) years after completion of this PO or for such longer periods, if any, as may be specified elsewhere in the PO.

- C.** Seller shall maintain documented records of tool control whether the tooling is furnished by Buyer, Buyer's Customer or manufactured by Seller and/or Sellers' sub-tier, or is Seller-owned.
- D.** Natural Disaster Occurrence-Seller shall promptly notify Buyer's Authorized Procurement Representative of any occurrence of natural disaster that diminishes Seller's ability to deliver conforming goods or services.

4. CERTIFICATE OF CONFORMANCE (COC) (Document Required)

All items / shipments must be accompanied by a COC issued by the manufacturer, supplier or distributor certifying that all materials, processes and finished items supplied under the P.O. were inspected and/or tested and found to comply with the requirements of the P.O. and applicable specification(s), drawing(s) and orders relative thereto. Test and inspection data shall be kept on file by the Seller and be available for review, on request, for a period of seven years after final delivery, unless specified in a SOW or other binding contract. Seller/O.E.M./Authorized Distributor's COC shall state/certify that materials, items or services provided under this purchase order meet all applicable contractual, technical, traceable and solderability requirements called out in the applicable item specification. Materially applicable certifications required to be delivered with the shipment per specification(s) or other quality requirement(s) shall also be provided.

As a minimum, the COC shall contain the following information:

- 1. Name of Company and Date**
- 2. BUYER Contract number or BUYER purchase order number**
- 3. BUYER part number identified on the purchase order, revision number, and Manufacturer part number**
- 4. Complete nomenclature of supplies and serial number or other identification**
- 5. Lot number, batch number, or date code**
- 6. Quantity in shipment**
- 7. Location of original inspection / test data, if other than Supplier.**
- 8. Printed name and Title of certifying official with signature**

Computer-generated or Facsimile-reproduced signatures will be considered to have the same force as an original signature.

This general statement of quality shall be in addition to any specific certifications required to be delivered with the shipment by specifications or other quality documents. All statements of quality shall accompany the shipment.

5. Dimensional Test Data (Document Required)

A copy of the Seller's test report containing quantitative results of all dimensional measurements is required to be included with each lot.

6. Functional Test Data (Document Required)

A copy of the Seller's final test report containing quantitative results of all electrical and/or functional tests is required to be included with each lot. The Seller is required to furnish the actual test data by serial number for electrical characteristics when such products are serialized. When provided, Supplier shall control and provide actual data validating key characteristics (as defined by BUYER) in accordance with AS9103. Document is available from SAE International.

7. Chemical & Physical Analysis (Document Required)

A copy of the Seller's test report containing quantitative results of chemical and/or physical analysis is required with each lot. Raw material used in the fabrication of parts under this P.O. shall be traceable to a mechanical and chemical analysis. The test results shall conform to the current material specification and/or acceptance tests. A copy of the actual analysis shall accompany each delivery. The Seller is also required to provide a COC which includes a statement that the parts delivered have been fabricated from certified material.

For MIL-spec paints - if test reports are not obtainable, manufacturer's certs will be acceptable.

**ESA HEADQUARTERS****8. Safety Data Sheet (SDS) (Document Required)**

Suppliers must submit SDS's in accordance with Title 29 Code of Federal Regulations 1900.1200 and the requirements in ANSI Z400.1/Z129.1-2010 Hazardous Workplace Chemicals – Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation.

All Precautionary Labeling must be the correct GHS labeling (pictograms inside of diamonds).

9. Foreign Government Source Inspection

Foreign Government inspector may perform product verification prior to shipment from Seller's plant. Unless specified otherwise on the P.O. the Seller shall notify the Elbit Systems buyer on your P.O., at least 7 working days prior to the scheduled ship date but after performance of final testing and acceptance by the Seller. Notification shall consist of the P.O. number, P.O. Line item, part name, part revision, quantity being presented (preferably full line item quantity) and whether it is an FAI or not.

10. Customer/Customer's Third party Inspection

Customer and/or Customer's third party representative's inspection is required prior to shipment from Seller's plant. Upon receipt of this P.O. the Seller shall promptly notify the customer/third party representative who normally services its plant, so that appropriate planning can be accomplished. If such representative does not serve the Seller's plant, the Seller shall immediately notify BUYER's purchasing agent.

11. First Article Inspection (FAI) according to AS9102 Requirement (Document Required)

Seller is responsible, prior to delivery of the first production lot, to complete an FAI in accordance with Aerospace Standard AS9102. SAE AS9102 current revision documentation can be obtained at www.sae.org/. A completed copy of the AS9102 Appendix A-current revision forms, as well as other applicable supporting documentation, shall be presented to BUYER with the FAI lot. A copy of the annotated drawing and any Supplier generated drawings/sketches used to identify dimension locations referenced on the dimensional report must be included in the FAI package. The recording of instruments or gages used to determine measurement/acceptability and their identification number is required. Manufacturing of the remaining lot without BUYER approval of the FAI is at the Seller's risk.

BUYER Supplier Quality Engineering (SQE) reserves the right to witness the FAI performance at the Seller's facility. BUYER SQE shall be notified at least 10 working days prior to the scheduled FAI task. BUYER SQE will return written notification if we wish to witness the FAI. Exception to the AS9102 requirements will require BUYER Supplier Quality and/or Customer concurrence prior to product acceptance.

See QA Code 1 – General Requirements for FAI detail instructions.

Note: Seller shall perform an FAI for any of the following reasons when QA CODE 11 is imposed on Purchase Orders for follow on builds which the Supplier has a prior AS9102 FAI on file:

1. A gap of 2 years or more since the Supplier's last production for BUYER.
2. A Delta FAI to the original FAI is required for any revision change on the product.
3. AS9102 requires an FAI for any change in facility location, design or process change that may affect form, fit or function of the part. BUYER Procurement and Supplier Quality shall be notified of any of these changes.

A complete copy of the FAI documentation shall be included with the first production lot delivered to BUYER.

Note: If applicable Seller shall comply with Lockheed Martin Quality Clause Q2A First Article Inspection.

12. Castings & Forgings

Two (2) samples of all raw castings and forgings are required from newly manufactured or reworked dies or molds and must be approved by BUYER Supplier Quality prior to the run of production parts through a FAI. The samples will be available at the Seller's facility or will be sent to BUYER for approval, according to BUYER's direction. The samples will include the actual results of the lay-out inspection, radiographs and actual chemical and physical test results. The Seller is responsible for obtaining BUYER's approval of any change to processes or tooling using the same process as defined herein.

13. Radiographic Inspection (Document Required)

Elbit Systems of America Proprietary Information

Verify the latest revision on the ESA Portal.

**ESA HEADQUARTERS**

The material on this order requires radiographic inspection by ISO 17025 certified or BUYER approved independent X-Ray Laboratory. Films shall be read and interpreted by the laboratory staff and findings shall be reported on an appropriate form. The X-Ray film shall be identified with the BUYER purchase order number, item part number and serial number (if applicable) or the sample part number. In addition, each item shall be stamped with the radiographic technician's identification stamp.

14. Inspection at Source (IAS) (Document Required)

All work performed under this P.O. is subject to BUYER's inspection or test at the Seller's plant prior to shipment. Unless specified or Seller has Delegated Source Inspection Authority granted by BUYER, the Seller shall notify BUYER Supplier Quality a minimum of 7 working days prior to the scheduled ship date but after performance of final testing and acceptance by the Seller. When the Supplier is ready for IAS, the Supplier will indicate "Ready for IAS" in Supplier Exchange (SE). BUYER's representative may perform inspection or test on a random basis or up to 100% inspection, including verification of certificates of conformance for materials and special processes. For deliveries subsequent to the initial delivery, the Supplier may present a copy of the AS9102 FAI report to the source inspector with each source inspection.

A copy of the completed Source Inspection Report (or Delegated Checklist) shall accompany each shipment.

15. US Government Source Inspection

US Government inspection, typically DCMA QAR, is required prior to shipment from Seller's plant. Upon receipt of this P.O. the Seller shall promptly notify the government representative who normally services its plant so that appropriate planning can be accomplished. If such representative does not serve the Seller's plant, the Seller shall contact the closest Air Force, Army, or Navy Inspection office. **NOTE: the End Customer does not and cannot satisfy this Quality Code when flowed.** If such office cannot be located, the Seller shall immediately notify BUYER's purchasing agent. Seller shall provide access to any and all facilities where work is being performed or is scheduled to be performed, including those facilities of Seller's agents and subcontractors, in order to perform item inspections, surveys, or system/process surveillance as part of verification of conformance to the requirements of this PO. Seller's denial of any such access may result in inactivation of Seller's approval. Seller shall include the provisions of this facility access requirement in its POs with its agents and subcontractors, for this PO. Seller shall provide the following, at no increase in price, cost or fee to Buyer, Buyer's customers or regulatory agencies:

- A. Suitable facilities at Seller and Seller's subcontractors' manufacturing locations for Buyer, Buyer's Supplier Quality Engineer, Buyer's customer and regulatory agency representatives to perform item inspections, surveys or system/process surveillance, and
- B. High speed internet access for Buyer's Supplier Quality Engineer.

Evidence of GSI acceptance shall be included in document package to BUYER.

16. Government Source Surveillance

The Government representative may perform process oversight of manufacturing and product management processes. Surveillance activities may be taken at such times and places, including any stage in the manufacturing process at any Subcontractor or Subcontractor's Supplier's plant as may be necessary, to determine conformance to the Subcontract requirements. Such surveillance does not relieve the Subcontractor of any responsibilities under this Subcontract. Seller shall provide access to any and all facilities where work is being performed or is scheduled to be performed, including those facilities of Seller's agents and subcontractors, in order to perform item inspections, surveys, or system/process surveillance as part of verification of conformance to the requirements of this PO. Seller's denial of any such access may result in inactivation of Seller's approval. Seller shall include the provisions of this facility access requirement in its POs with its agents and subcontractors, for this PO. Seller shall provide the following, at no increase in price, cost or fee to Buyer, Buyer's customers or regulatory agencies:

- A. Suitable facilities at Seller and Seller's subcontractors' manufacturing locations for Buyer, Buyer's Supplier Quality Engineer, Buyer's customer and regulatory agency representatives to perform item inspections, surveys or system/process surveillance, and
- B. High speed internet access for Government representative.

17. Failure Analysis / Summary of Maintenance Actions (Document Required)

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Information

Verify the latest revision on the ESA Portal.

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**ESA HEADQUARTERS**

Seller shall provide a failure report indicating the failure mode, the root cause of the failure, the action performed to correct the failure (including replaced or reworked part number(s)), actions performed that verified the correction (testing) and evidence of verification (test reports).

18. Raw Material Identification (Document Required)

All raw material supplied under this P.O. must be clearly identified by the application, type, condition and manufacturer of the material via the Certificate of Conformance. Record Retention of raw material certifications (traceable to a mechanical and chemical analysis), data related to manufacturing, inspection, testing and a Certificate of Compliance (COC) shall be maintained and stored by the Seller for a period of ten (10) years after completion of the purchase order. The data shall be made available when requested by the Buyer.

22. Manufacturing Date Code Rubber**Items:**

Only items manufactured with at least one year of material shelf life remaining prior to the date of shipment may be supplied under this purchase order.

23. Packaging and Preservation

Finished parts shall be adequately protected to prevent damage during handling and shipment. Parts shall be wrapped, bagged, or otherwise protected to prevent damage when packaged within a larger pack. The Seller shall be responsible for determining the method of packaging, unless otherwise directed, to assure protection during transit in accordance with ASTM-3951 (Standard Practice for Commercial Packaging) while taking into consideration the following specific instructions:

1. **Plated or Painted** parts must be individually packaged to prevent tarnish, abrasions, and corrosion.

2. **Tape & Reel (T&R) SMT Devices**

If the package definition on the Purchase Order is T&R, then conform to EIA taping standards EIA-481 and EIA-971. If the package definition encoded into the Manufacturer's part number is stick or tray on the PO, then parts are to be packaged in stick or tray as called out on the PO. Surface mount plastic chip carriers shall be classified, baked, packed and labeled per J-STD-033A or its equivalent. For components 25mm or larger, tray is the preferred packaging but tape and reel may be requested.

3. **Rubber** items shall be packed in bags per MIL-B-131H, Type 1, Class 2. Each bag shall be heat-sealed and marked by a label which includes the following information:

1. Item description
2. Material specification number
3. BUYER part number
4. Quantity
5. Expiration date
6. Manufacturing date
7. Serial Number, Date Code, or Lot/Batch Number (as applicable)

NOTE: Rubber items greater than 100 square inches shall be packaged no more than 5 pieces per bag, with each individual item separated from the next by a thin cardboard separator.

4. LCD Bare Glass

Each item shall be individually packed. Each box shall include a maximum quantity of the individually packed items. The marking of the box shall include: ESL P/N and Rev.; Supplier's P/N; Date Code; LOT Number and S/N. The packaging must be adequate to protect the entire unit (this includes LCD glass, TABs and electronics) from any damage, distortion or any defects during transportation, handling and storage.

5. PCB'S

- a. Separate up to 10 individual PCB with slip sheets.

**ESA HEADQUARTERS**

- b. Place up to 10 PCB's in a low out gassing, ESD Moisture Barrier bag with a "NEW DRY" desiccant pack and moisture indicator card.
- c. Vacuum seal each individual moisture barrier bag.
- d. Label individual bags with part number, rev, serial number, PCB Supplier/cage code, PCB date code and date sealed.
- e. If panelized, note useable quantity and x-out quantity per bag.
 - X-outs in panelized boards (PWB Array's) shall:
 - Not exceed 1 per panel with panels of 4 or less boards.
 - Not exceed 20% on panels with more than 4 boards.
 - Not exceed 5% of the total number of boards in the lot.
 - **Be clearly marked on the component side of the board (with an "X" using a permanent marker) and packaged separately.**
 - In addition to the "X marking requirement" drawings may also identify fiducial drill locations as well.

Seller shall assume responsibility for inadequate packing that result in damage physically and/or functionally.

24. Electrostatic Discharge (ESD)

ESD sensitive devices shall be handled, packaged and marked in accordance with the requirements of MIL- STD-1686 and/or ANSI/ESD S20.20. Tubes and rails used for packaging Micro-electronic devices shall be made from conductive materials per MIL-HDBK-263. Connectors shall be supplied with protective caps made from conductive material per MIL-HDBK-263. ESD Labels are required to be on the outside of the box for shipment per MIL- STD-129 paragraph 5.2.20.1 and 5.2.20.2.

26. Limited Shelf Life Items

For chemicals, adhesives, silicone, bearings, paint and other age sensitive items the Seller shall provide a Certificate of Compliance (COC) that includes:

1. The Safety Data Sheet (SDS)
2. Expiration date and / or date of manufacture
3. Permissible shelf life
4. Lot and batch number as appropriate
5. Storage temperature range
6. Any other pertinent information relating to the shelf life of the items supplied i.e. warranted storage at room temperature, storage life beyond warranty period as established by supporting documents/data (e.g., military specifications, stability studies, etc.) and any special condition for extending useful life (e.g., keep frozen or refrigerated, storage in dark area, etc.).

In addition the Supplier shall put the following on each individual item and product container label:

1. Product name or nomenclature
2. Date of manufacture
3. Expiration date or permissible shelf life
4. Lot or batch number
5. Storage temperature range

The material on shipment date shall not have exceeded **25%** of the total shelf life from the date of manufacture.

28. SPC Data Requirement (Document Required)

Manufacturing process of the material supplied under this P.O. shall be controlled by Statistical Process Control (SPC) methods. A copy of the Seller's statistical process control data (control charts, histograms, process capability studies), relevant to the manufacturing of this lot is required with this shipment.

31. Supplementary Quality Assurance Provisions (QAP)

The Seller shall meet all the supplementary quality requirements specified on the QAP associated with the material supplied under this P.O.

**ESA HEADQUARTERS****32. Statement of Work (SOW)/Corporate Work Transfer (CWT)**

The Seller shall meet all the supplementary quality requirements specified in the Statement of Work (SOW) or Corporate Work Transfer (CWT).

33. Fastener Quality Assurance (Document Required)

The following quality term describes the quality provisions requirements for the following:

1. Bolts, nuts, screws, any press nuts or studs and washers of all kinds, 5mm or larger, requires hardening, are documented as Military (Government) or industrial standards.
2. Screws, nuts, bolts or studs having internal or external threads, which bear grade identification marking required by a standard or specification.

These provisions are required according to the United States Fastener Quality Act Public Law 101-592 as amended by Pub. L. 105-234 and Pub. L. 106-34. The Supplier shall comply with all requirements of the act, and shall identify and hold BUYER harmless for any damages due to non-compliance with the act.

The approved manufacturers shall include with each shipment:

1. Test reports that substantiates qualification and/or acceptance.
2. Certification of Compliance signed by an officer of the Supplier, declaring that the items conform to all requirements specified in applicable standards and/or specification documents, manufacturer's identity and lot number and that an original copy of the accredited laboratory report, if applicable, is on file for inspection and review by BUYER.
3. Items that are individually or intermediately packaged within a container shall be marked on the EXTERIOR with the manufacturer's identity, lot number and BUYER's PO. Each intermediate package shall be marked with the manufacturer's identity, lot number and BUYER's PO and Part Number.

The distributor shall include with each shipment:

1. The approved manufacturer's certification statement, as noted in 1 and 2 above
2. Certification of Compliance signed by an officer of the Seller, declaring: That a manufacturer, listed as approved for the item, manufactured the items.

34. As Planned/As Built Report (Document Required)

An As Planned/As Built (AP/AB) report shall be submitted for each part supplied under this P.O. The report shall contain part number, revision, serial number and/or lot/batch number.

35. Independent Test Lab (ITL) Testing (Document Required)

Each lot ready for delivery under this P.O., shall be shipped to the ITL stated in the P.O. Lots approved by the ITL shall be forwarded to BUYER together with the ITL test reports.

37. Obsolete/Diminished Material, Broker/Independent Distributor purchases (Document Required)

This code is enacted to mitigate risk associated with obsolete or diminished material and certain product purchased from jobbers/brokers or independent distributors who are **not** the manufacturer **nor** their franchised distributor.

If you have received a P.O. with this code and your organization is **not the manufacture** or your organization is **not an approved franchised distributor for the manufacturer** you must follow these steps prior to shipment;

1. Complete an authenticity test/inspection report containing all minimum required test and inspection items per SAE AS6081 STD to include visual evidence of each test/inspection result.
2. Email a copy of the authenticity test/inspection report to BUYER Component Engineering and Supplier Quality for review and written email approval of the report.
3. After email approval of the report has been issued by BUYER Component Engineering then the product shipment, per the purchase order requirements, may be sent to BUYER.

38. Manufacturing Dates for Solderable Components

BUYER prefers components manufactured within the past 36 months upon receipt. If components have date codes greater than 36 months, parts must be solderability tested prior to delivery to BUYER. The manufacturer's date code must appear on Seller's packing slip, Certificate of Conformance and test data must accompany shipment to BUYER.

**ESA HEADQUARTERS**

Solderability tested parts should be bagged and tagged separate from remainder of lot in appropriate packaging to prevent lead damage. Solderability tested parts should accompany remainder of lot to BUYER.

Solderability testing for component leads is as follows:

Standards J-STD-002 and JES022-B102 - preferred Preconditioning Condition Category C, Durability (exposure 8 hr. Steam aging). However, upon email request from Supplier and BUYER SQE approval, BUYER may allow and accept Preconditioning Condition Category E Durability (exposure 4 hr. minimum, 150°C Dry Bake).

Sample size per MIL-STD-1916 Attributes:

Lot Size:	Level	Sample Quantity
0-170	A	5
171-288	B	6
289-545	C	8
545-960	D	10
961 AND ABOVE	E	12

PWB's –

Seller shall supply items within three months of manufacturing date or acceptable solderability test. If the supplied items or packaging is not identified with the manufacturing/lot date, then the Seller will indicate the manufacturing/lot date on the Seller's packing slip. Solderability tests for Circuit Boards in compliance to:

J-STD-003 Test C solder float test (Test A--Edge Dip Test is acceptable if board has surface lands only) Category 3, Class 3, Sample size of 1 coupon or board/lot.

39. Record Retention – 10 Years

Quality and inspection records shall be established and maintained by the Seller to provide evidence of conformity to requirements and the effective operation of the Quality management system. Records of manufacturing, inspection, and test (Objective Quality Evidence) shall be maintained and stored by Seller for a minimum period of **ten (10) years** after completion or termination of this Purchase Order/Contract (unless otherwise directed by the PO).

44. Tooling or Test Equipment (Document Required)

Test equipment operational documentation such as written instructions, operator manuals, and/or instruction sheets, must be provided with each unit. In addition to the providing Packing Slips and Certificates of Conformance, record the tool number, tool symbol, and tool serial number (including the 'multiple' number, as applicable).

45. UID Label

The Seller shall implement the Unique Identification (**UID**) marking per DFARS 252.211-7003, DFARS 211.274-2 and MIL STD 130 current revision. Specific customer requirements may vary.

The Contractor shall provide the results of the non-recurring engineering (NRE) to the Government at no additional cost and provide a pre-delivery sample of the UID mark to be validated prior to the first delivery.

46. Civil Aviation Records Retention

The Seller, including all of its subcontractors at all tiers, shall retain and safeguard all records related to the production of the parts for unlimited time in order to maintain airworthiness of the products. Seller shall not destroy any of the records unless Buyer written approval is provided. In the event that Seller will go out of business all records shall be provided to Buyer. Data that should be retained include but not limited to routecards, audit records, raw material COC, test data, etc. Computerized records shall be backed up and kept at a safe place, protected against fire, fluids and burglary.

47. Refrigerated Delivery

The material supplied under this P.O. shall be refrigerated to the temperature per the manufacturer recommendations at all times for the duration of the delivery and storage. The Supplier shall attach a temperature recorder to the delivered package to enable monitoring of the temperature throughout the delivery and storage.

48. Lead Free Components

All components under this purchase order will be marked and identified according to IPC-1066 or J-STD-609-- "Lead

**ESA HEADQUARTERS**

or Lead-free MARKING AND LABELING” standard. The COC document shall state whether the material is Lead or Lead free according to the purchase order.

49. Frozen Delivery

The material supplied under this P.O. shall be frozen to the temperature per the manufacturer recommendations at all times for the duration of the delivery and storage. The Supplier shall attach a temperature recorder to the delivered package to enable monitoring of the temperature throughout the delivery and storage.

51. Special Processes

A special processes provider that holds a valid NADCAP approval for the required specific process is acceptable to BUYER. Upon BUYER request the Supplier shall identify the special processes provider and forward the NADCAP certificate.

If there is not a special processes provider with NADCAP approval available the Supplier shall obtain BUYER SQE approval of facilities, equipment, processes, and operating personnel performing the special processes. The approval shall be obtained prior to work starting.

52. Calibration Certificate (Document Required)

The material supplied under this P.O. shall be accompanied by a Calibration Certificate issued by the manufacturer or by a calibration laboratory certified by the local laboratories accredited organization, in accordance with ISO 17025.

The calibration certificate shall include:

1. Item manufacturer part number
2. Item description
3. Item serial number
4. Last date of calibration
5. Detailed calibration report
6. Manufacturer's recommended calibration intervals

53. Subcontractor Parts Management Control Plan

Supplier shall comply with requirements of document BUYER-PP-0003. Contact BUYER for a copy of the document if not included with P.O. package. Copies are also available on the BUYER Supplier Portal - <http://www.elbitsystems-us.com/suppliers-portal>.

54. Software developed - SRS, VDD, STD, STR (Document Required)

This QA Code applies to Software developed in accordance with specifications provided by Elbit Systems of America. Unless otherwise specified, the Supplier must deliver the following documentation:

1. Software Requirement Specification (SRS) with content and format in accordance with DI-IPSC-81433A
2. Version Description Document (VDD) with content and format in accordance with DI-MMCR-80013A
3. Software Test Description (STD) with content and format in accordance with DI-IPSC-81439A
4. Software Test Report (STR) with content and format in accordance with DI-IPSC-81440A

55. Software developed - IRS, SPS, SDD (Document Required)

This QA Code applies to Software developed in accordance with specifications provided by Elbit Systems of America. Unless otherwise specified, the Supplier must deliver the following documentation:

1. Interface Requirement Specification (IRS) with content and format in accordance with DI-IPSC-81434A
2. Software Product Specification (SPS) with content and format in accordance with DI-IPSC-81441A
3. Software Design Document (SDD) with content and format in accordance with DI-IPSC-81435A

56. Test Readiness Review (TRR)

The Supplier shall host a Test Readiness Review (TRR) prior to a Formal Qualification Test (FQT) of the deliverable software. The TRR presentation material shall include the following information at a minimum:

1. FQT schedule and participants

**ESA HEADQUARTERS**

2. Changes from previous software release
3. Document delivery status
4. Software metrics (defined by BUYER software lead), known issues,
5. Test configuration (including software and hardware)
6. Test results from previous tests and Quality involvement in the verification process.

The Supplier will notify the BUYER Software Lead of the TRR time and location a minimum of 14 calendar days in advance and provide a draft version of presentation materials a minimum of 3 business days in advance. BUYER has the right to attend both the TRR and FQT at their discretion.

58. AS 9145 APQP / PPAP (Document Required)

As applicable, Seller shall define, implement and maintain the methodologies and processes defined in the Aerospace Standard AS9145. As related to the organization's AS9100 certification, Seller shall provide supporting documentation to the extent with which they apply, for each delivery item:

ADVANCED PRODUCT QUALITY PLANNING REQUIREMENTS

1. Phase 1 Requirements – Planning
2. Phase 2 Requirements – Product Design and Development
3. Phase 3 Requirements – Process Design and Development
4. Phase 4 Requirements – Product and Process Validation
5. Phase 5 Requirements – On-going Production, Use, and Post-delivery Service

PRODUCTION PART APPROVAL PROCESS REQUIREMENTS

1. Process Requirements for Production Part Approval Process
2. Production Part Approval Process File and Submission
3. Production Part Approval Process Disposition
4. Production Part Approval Process Resubmission

<http://www.aiag.org>

Tailoring of QA Code 58 is allowed but must be approved in writing by BUYER.

59. Safety Product

The material must be marked with serial and consecutive numbers including manufacturing date. The word “**SAFETY**” in **red** (minimal font 28) will be marked on the external container either by stamp or by label.

60. Lithium Battery (Document Required)

The material will be accompanied by an **MSDS/SDS** record containing at least:

- (1) Weight of Lithium in the battery; (2) UN Number; (3) Proper Shipping Name; (4) Hazard Class

61. Radio Frequency Identification (RFID) DFARS 252.211-7006

(b)(1) Except as provided in paragraph (b)(2) of this clause, the Contractor shall affix passive RFID tags, at the case- and palletized-unit-load packaging levels, for shipments of items that—

- (i) Are in any of the following classes of supply, as defined in DoD 4140.1-R, DoD Supply Chain Materiel Management Regulation, AP1.1.11:

- (A) Subclass of Class I – Packaged operational rations.
- (B) Class II – Clothing, individual equipment, tentage, organizational tool kits, hand tools, and administrative and housekeeping supplies and equipment.
- (C) Class IIIP – Packaged petroleum, lubricants, oils, preservatives, chemicals, and additives.
- (D) Class IV – Construction and barrier materials.
- (E) Class VI – Personal demand items (non-military sales items).
- (F) Subclass of Class VIII – Medical materials (excluding pharmaceuticals, biologicals, and reagents – Suppliers should limit the mixing of excluded and non-excluded materials).
- (G) Class IX – Repair parts and components including kits, assemblies and subassemblies, repairable and consumable items required for maintenance support of all equipment, excluding medical-peculiar repair parts; and

**ESA HEADQUARTERS**

- (ii) Are being shipped to one of the locations listed at <http://www.acq.osd.mil/log/rfid/> or to—
 - (A) A location outside the contiguous United States when the shipment has been assigned Transportation Priority 1, or to—
 - (B) The location(s) deemed necessary by the requiring activity
 - (2) The following are excluded from the requirements of paragraph (b)(1) of this clause:
 - (i) Shipments of bulk commodities.
 - (ii) Shipments to locations other than Defense Distribution Depots when the contract includes the clause at FAR 52.213-1, Fast Payment Procedures.
 - (c) The Contractor shall—
 - (1) Ensure that the data encoded on each passive RFID tag are globally unique (i.e., the tag ID is never repeated across two or more RFID tags and conforms to the requirements in paragraph (d) of this clause;
 - (2) Use passive tags that are readable; and
 - (3) Ensure that the passive tag is affixed at the appropriate location on the specific level of packaging, in accordance with MIL-STD-129
- (Section 4.9.2) tag placement specifications.
- (d) Data syntax and standards. The Contractor shall encode an approved RFID tag using the instructions provided in the EPC™ Tag Data Standards in effect at the time of contract award. The EPC™ Tag Data Standards are available at <http://www.epcglobalinc.org/standards/>.
- (1) If the Contractor is an EPCglobal™ subscriber and possesses a unique EPC™ company prefix, the Contractor may use any of the identifiers and encoding instructions described in the most recent EPC™ Tag Data Standards document to encode tags.
 - (2) If the Contractor chooses to employ the DoD identifier, the Contractor shall use its previously assigned Commercial and Government Entity (CAGE) code and shall encode the tags in accordance with the tag identifier details located at http://www.acq.osd.mil/log/rfid/tag_data.htm. If the Contractor uses a third-party packaging house to encode its tags, the CAGE code of the third-party packaging house is acceptable.
 - (3) Regardless of the selected encoding scheme, the Contractor with which the Department holds the contract is responsible for ensuring that the tag ID encoded on each passive RFID tag is globally unique, per the requirements in paragraph (c)(1).
- (e) Advance shipment notice. The Contractor shall use Wide Area Workflow (WAWF), as required by DFARS 252.232-7003, Electronic Submission of Payment Requests, to electronically submit advance shipment notice(s) with the RFID tag ID(s) (specified in paragraph (d) of this clause) in advance of the shipment in accordance with the procedures at <https://wawf.eb.mil/>.

62. Supplier Sub-tier Control

Supplier is responsible for ensuring all items procured from its subcontractors conform to all requirements of the ESA purchase order and the ESA customer's requirements. Supplier shall ensure all applicable provisions of this document are flowed down to its subcontractors. Supplier shall ensure, through their quality system that sub-tier supplier quality system is at least compliant to the primary Supplier quality system minimums found in the requirements listed under QA Code 1, General Requirements, of this document.

B1. Sub-tier Paint requirements**NOTE: IF PARTS ARE NOT PAINTED THIS CODE DOES NOT APPLY:**

The Supplier/Subcontractor shall be responsible for the compliance of their sub-tier painter to all requirements. Objective Quality Evidence – paint:

- A. Data: the following shall be recorded and maintained for all parts painted:
 - a. Part number and revision with Purchase Order and batch/lot number.
 - i. Sub-tier painters may use the Suppliers Purchase Order Number however; parts and processes shall be traceable to the part number and Purchase Order.
 - b. Cleaning Method.
 - c. Pre-treatment method.

**ESA HEADQUARTERS**

- d. Prime coat process:
 - i. Primer batch number.
 - ii. Date Painted.
 - iii. Prime coat start and stop times.
 - iv. Temperature, dew point, RH.
 - v. Accelerated drying if applicable.
 - vi. Operator.
 - vii. Dry film thickness.
- e. Top coat process:
 - i. Top coat batch number.
 - ii. Date painted.
 - iii. Top coat start and stop times.
 - iv. Temperature, dew point, RH.
 - v. Accelerated drying if applicable.
 - vi. Operator.
 - vii. Dry film thickness.
- B. Tests:
 - a. The specification-defined lot conformance test shall be performed, the results shall be documented and maintained by the Supplier/subcontractor and shall be made available upon request.
 - b. The specification required process qualification tests shall be performed as minimum when no others specified qualification tests are defined in the applicable technical data package. The results shall be maintained and made available upon request.
 - c. All test reports shall include digital photographs of the test panels.

B2. Boeing Company D1-4426 Approved Processors

Seller shall be listed or utilize sources listed in Boeing document D1-4426, Boeing Approved Process Sources, whenever the manufacturing and inspection processes are listed in D1-4426, except as noted in D1-4426. The seller shall impose this requirement on the seller's subcontractors. The most current revision of D1-4426 shall be utilized and is available at <http://active.boeing.com/doingbiz/d14426/index.cfm>

B3. CARC Paint Traceability Marking

(Chemical Agent Resistive Coating (CARC) painted parts only)

NOTE: IF PARTS ARE NOT PAINTED THIS CODE DOES NOT APPLY:

All assemblies requiring CARC paint shall have a date or lot number stamped on the parts traceable to when and where the parts were finished and what materials (batch/lot numbers) were used. If the company applying the finish is different from the company providing the part(s) to USCS, they shall also be identified by the use of an ink stamp or other means of identification. A name, number or symbol can be used as identification. Adhesive labels are not acceptable. This marking shall be in the vicinity of the part identification marking. The Supplier to USCS is responsible to maintain the objective quality evidence to support who painted the sub-assemblies. Sub-assemblies or lower components to an assembly need not meet the painted product marking requirements as referenced above.

B4. BDS Seller Special Tooling Requirements

If you are in possession of US Government-owned accountable to Boeing or Boeing owned tooling then this code applies. **If you are not sure, please contact your BUYER buyer.** Boeing -E223: Seller is required to maintain a special tooling management process that complies with the requirements of D950-11059-1, "BDS Seller Special Tooling Requirements." D950-11059-1 is incorporated herein and made a part hereof by reference. Buyer reserves the right to conduct surveillance at Seller's facility to determine whether Seller's special tooling management process meets the requirements of this clause. A copy of D950-11059-1 can be obtained at the following URL address: http://www.boeing.com/supplier_portal/index_general.html

B5. Deliverable Software Requirements

Supplier shall maintain a Quality Assurance Program to include Software Quality Assurance, in accordance with BOMS Appendix A-Quality Management System (SAE AS9100) and BOMS Addendum 2-Quality System

**ESA HEADQUARTERS**

Requirements for Deliverable Software. Reference address: <http://www.boeingssuppliers.com/supplier/D6-82479.pdf>

B6. MRB on Buyer's government contracts

Seller performing MRB on Buyer's government contracts (e.g., V-22, CH-47, etc.) shall promptly notify the government representative who normally services Seller's facility to provide the opportunity to be included in Seller's MRB process. If a government representative does not normally service Seller's facility, Seller shall furnish a copy of this contract to the nearest Defense Contract Management Agency (DCMA) office. In the event the government representative or DCMA office cannot be located, Seller shall immediately notify Buyer's Authorized Procurement Representative. DCMA has the right of approval / disapproval on all MRB dispositions on all Buyer procurements.

CA. Incoming Assessment

ESA internal Code: Route to appropriate technical area for acceptance testing and/or other verification prior to input to stock. Approval noted on acceptance tag by initials/date

CM. Incoming Computerized / Precision Measurement

ESA internal Code: Item / material is required to be routed to Quality Assurance for additional measurement and / or tolerance inspection prior to acceptance.

CS. Incoming Counterfeit Screening

ESA internal Code: Item/material is required to be routed to Quality Assurance for screening prior to acceptance.

FA. Federal Aviation Authority

Drug and Alcohol Abuse Prevention Program – As a certificated CFR § 145 "Repair Station", provides covered functions for 14 CFR § 121 and § 135 operators. ESA, as prescribed by regulation, maintains an antidrug and alcohol misuse prevention program in accordance with 14 CFR § 120, Drug and Alcohol Testing Program. ESA requires that all Suppliers providing goods and services in support of its 14 CFR § 145 Repair Station maintenance activities, institute and maintain an antidrug and alcohol misuse prevention program in accordance with 14 CFR § 120. The program shall conduct tests for Pre-Employment Screening, Periodic, Random, and where necessary, Post-Accident, Reasonable Cause/Suspicion, Return to Duty, and Follow Up screenings. Annual reports of antidrug program and alcohol misuse prevention program results must be maintained and be available for review by the FAA, ESA and its customers in accordance with the requirements of 14 CFR § 120.

FB. Federal Aviation Authority (Document Required)

Overhauled/Repaired/Modified Items – FAA Certified Repair Stations - Supplier shall provide a completed serviceable tag with Maintenance Release Statement, FAA Form/Tag 8130-3 in accordance with 14 CFR § 43. Any Airworthiness Directives (AD) or Service Bulletins (SB's) required by contract or the FAA shall be documented on the 8130-3, including level of compliance.

When applicable, the Supplier shall provide FAA Form 337, "Major Repairs and Alteration Statement", and or FAA Form 8110-3, "Statement of Compliance with Federal Aviation regulations, and Alternate Method of Compliance". A CRS must perform the work (CRS status may be authenticated by ESA utilizing the FAA website or other appropriate source). Supplier shall provide a completed copy of the final inspection work order, which details the entire scope of work performed, upon request.

F1. First Article Inspection / Test (FAI/T)

First Article Inspection / Test (FAI/T) shall be performed for all initial production items. FAI/T shall also be performed on production items that have had TDP changes made and or have been out of production 90 days or more. Written notice of any First Article Inspection, Lot Acceptance Test and/or Audit shall be provided to BUYER at least 20 days prior to the event so Government or BUYER can attend if desired.

**ESA HEADQUARTERS****F2. Material Handling (MIL-STD-2073)**

The Contractor shall be responsible to establish, control, and be responsible for the handling, storage, packaging, and shipping to protect the quality of the materiel and to prevent damage from loss, deterioration, degradation, or substitution of products that meets the requirements specified in MIL-STD-2073 (Standard Practice for Military Packaging) for the materiel listed in this contract.

IC. Incomplete Item

ESA internal Code: Item is received not complete; not to drawing. Item may require additional work, i.e. plating, paint, etc.

L1. MFC-PR-001 - Revision Level Control

Design Authority Suppliers: When providing products per Seller's drawings, Seller shall use the latest revision as determined by the Seller's Technical Design Package.

For referenced military, industrial, and commercial standard part numbers, Seller shall use the latest revision at time of the Purchase Order placement unless otherwise stated in the Purchase Order.

CANCELLED SPECIFICATIONS:

When a military specification and/or standard has been cancelled and/or replaced, the approved specifications shall be found by accessing the Buyer's web server: <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/mfc.html>. File name: Single Process Initiative (SPI-LMC99-1B)

When cancelled specifications are not addressed in the Single Process Initiative (SPI-LMC99-1B), Seller shall contact the Buyer to work with the specific program materials manager to determine the applicable specification and its revision.

L2. MFC-TR-002 - Batch Traceability

Each manufacturing lot shipped for this Purchase Order shall be separated and barcoded to accommodate single lot traceability during receipt and acceptance. Batch traceability data is required for this hardware. Batch traceability covers the following traceability methods (Date Code, Heat Lot and Lot Number).

L3. MFC-DC-021 - Seller Control of Sub-Tier Special Processes

Special processes referenced by specification within the Buyer's Engineering Design shall be identified, documented and maintained by the Seller.

Special Process Definition - A documented method used to manufacture products where:

When a product undergoes a physical, chemical or metallurgical transformation or inspection, conformance to the specification cannot be readily verified by normal inspection methods, and the quality of the product depends on use of specific equipment operated in a specific manner, under controlled conditions, by trained personnel with instructions, procedures and standards.

First Tier (Seller) - Any special processes performed under this contract by the Seller for welding, brazing, additive manufacturing, and Lockheed Martin Controlled Special Process Specifications shall be approved in Lockheed Martin Procure to Pay (P2P). This requirement shall be flowed down to related sub-tier Suppliers. All remaining special processes performed under this contract by the Seller require either a Buyer's Quality Representative approval or Nadcap accreditation.

Sub-Tier - Welding, brazing, additive manufacturing, and Lockheed Martin Controlled Special Process Specifications shall be approved in Lockheed Martin Procure to Pay (P2P). Seller may control all remaining sub-tier special process Suppliers or utilize one that is approved by the Buyer/Nadcap. Seller shall assure all sub-tier special process Suppliers are capable and qualified to perform the special process in accordance with the specification requirements. Objective evidence of Seller's sub-tier special processes and approvals, shall be documented and be available for review by the Buyer.

**ESA HEADQUARTERS****Special Process Suppliers Approval Status:**

To view the Buyer's approved special process Suppliers list; search within the Lockheed Martin Procure to Pay (P2P) Portal: <http://www.myexostar.com>. Log on with your User ID and password, then select the "Current Approvals" tab and search by PO Note number/description or by specification number to view the approved special process Suppliers.

To view the Nadcap approved process Suppliers list; search the eAuditnet website: <https://www.eauditnet.com/ean/user/login.htm>. Search by the Supplier's name and address to view the approved special process Suppliers.
Documentation Requirements:

Seller shall have documentation records available providing objective evidence of adherence to this PO Note requirement. Buyer reserves the right to access these records upon request.

L4. MFC-CC-001 - Supplier Process Change Control (Fit, Form, Function)

Some or all of the products acquired under this agreement will be incorporated into higher level assemblies that may be subject to stringent "qualification testing" requirements for critical government applications; even minor changes to Seller's products or processes may necessitate "requalification" or produce unacceptable results in higher level assemblies. Since the impact of any such product/process change can be most efficiently assessed prior to product integration into higher level assemblies and the potential cost of remediation/retrofit activities for end products deployed worldwide could be substantial, as a cardinal commitment under this contract, Seller expressly commits to:

- 1) Maintain a robust sourcing/quality process for the products delivered hereunder;
- 2) Rigorously comply with the notification requirements specified below; and
- 3) Include provisions with its sub-tier Suppliers that are adequate to implement the requirements of this provision.

For Lockheed Martin Missiles and Fire Control Designed Products:

Prior Approval/Notification – Form/Fit/Function/Material Changes:

* Prior Approval: Seller shall not implement, or otherwise deliver to Buyer, products incorporating any alterations to product form, fit, and/or function without the express prior written approval of the Buyer Procurement Representative. Such approval shall not be unreasonably withheld but shall be dependent upon Seller's thorough documentation of such proposed changes (including any analysis necessary to confirm continued suitability). Seller's notification and Buyer's limited approval of such form, fit and/or function alterations shall not be interpreted to waive any other contractual requirement(s) or to otherwise relieve Seller from delivering fully compliant products to Buyer documentation.

* Notification: Prior to delivering any products incorporating a "material change", Seller shall provide advance notice to Buyer, as they become aware and allow sufficient time to reasonably evaluate the proposed change and, if necessary, to place an end-of-life order for the unchanged products.

* For purposes of this clause a "material change" is any alteration to the design (including Software/Firmware), technical specifications, materials, component sourcing, production process, facilities or location (from original manufacturing location), whether instigated by Seller or its sub-tier Suppliers.

For Seller Design Authority and COTS Products:

All Changes: Seller shall notify Buyer of changes to form, fit, and/or function that may affect end item performance to products purchased within the last 24 months of the change date. Seller shall provide notification via a Product Change Notices (PCN) or some other communication method. These notifications shall be submitted to the Buyer's Procurement Representative as the Seller becomes aware. Seller shall also notify Buyer of any changes that may affect the performance of the hardware.

Risk Notification – Product Alerts: Buyer shall be promptly notified whenever Seller becomes aware or reasonably suspects that any product delivered to Buyer is, or contains a component that is, subject to a recall notice, warning

**ESA HEADQUARTERS**

alert, GIDEP Alert, and/or any other type of notification or concern regarding product authenticity, quality, safety, process integrity, and/or specification compliance.

L5. MFC-IN-003 – First Article Inspection (FAI) 12 Months

Seller shall be required to perform a new FAI when there is a lapse in production exceeding **twelve (12) months**. Any changes or deviations as defined in AS9102 shall require a full or partial (delta) FAI. In addition:

A. All design or process changes shall require a full or partial delta (FAI).

A request to conduct New or Partial/Delta First Article Inspection must be received at least (15) working days in advance of the planned inspection to allow for Buyer's participation if required.

Inspection results shall be documented by recording data whenever possible. Attribute data will be recorded only when variable data is not available.

APPLICABILITY:

FAI is required for the part/assembly number(s) included on the purchase order with no exceptions.

FAI is required for subassemblies and detail parts that make up the configuration item(s) included on this purchase order, with the following exceptions:

A) SELLER DESIGN AUTHORITY

For subassemblies and/or detail parts where the Seller has design authority, FAI requirements shall be as defined in the Statement of Requirements.

B) CATALOG AND COMMERCIAL OFF-THE-SHELF

If the part number, as listed on this P.O., is for a buyer or Seller designed product that has standard catalog or commercial off-the-shelf hardware included at subassembly levels, then FAI is not required for the standard catalog or commercial off-the-shelf parts/assemblies.

L6. Lockheed Martin Fort Worth Aeronautics/Missiles and Fire Control

Seller shall comply with the process source control requirements and limitations of LM Aero QCS-001. The most current revision of QCS-001 shall be utilized. A list of Lockheed approved processors can be accessed via the Lockheed Website; <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/control-specs.html> if unable to access this site it is the Seller's responsibility to contact the BUYER for a list of approved special processors.

Lockheed Martin Aeronautics approved Special Processors; In accordance with Lockheed Martin Aeronautics Appendix QJ you are required to complete the 90 day usage report on behalf of BUYER. BUYER's Lockheed Martin Aeronautics supplier codes = 800765331

Seller shall comply with the requirements of Lockheed Martin Aeronautics Company Quality Clause's Appendix QX and QJ. The latest revision in effect as of the date of this P.O. is applicable. *Seller shall ensure all applicable quality requirements are imposed on sub-tier suppliers and manufacturing facilities.*

Lockheed Martin Aero Quality Clauses can be accessed at the following website:

<https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/clauses.html>

L7. MFC-DC-023 – Special Process – Seller Approved for Major Sub-Contractors

Seller, when designing or using a Buyer's engineering specification(s)/design to produce the item(s) under contract shall identify, document and have sole control over any and all special processes/special processors referenced by specification in the design.

Special Process Definition - A documented method used to manufacture products where:

When a product undergoes a physical, chemical or metallurgical transformation or inspection, conformance to the specification cannot be readily verified by normal inspection methods, and the quality of the product depends on use of

**ESA HEADQUARTERS**

specific equipment operated in a specific manner, under controlled conditions, by trained personnel with instructions, procedures and standards.

Seller shall be responsible to assure all special process providers are capable and qualified to perform the special process in accordance with specification requirements.

Objective evidence of surveys shall be retained by the Seller and is subject to the Buyer's periodic audit.

A copy of the special process provider's certificate of compliance that certifies each process was accomplished in accordance with the applicable specification shall be available for review by the Buyer as objective evidence the special process was performed to the specification requirements.

N1. CCA - Tin Whisker Mitigation Plan and Lead Free Control Plans

This QA Code only applies to manufacturers of Circuit Card Assemblies. BUYER's Tin Whisker Mitigation Plan (EFW-PP-0003, latest revision) and lead Free Control Plan (EFW-PP-0002, latest revision) shall be applicable to this purchase order.

N2. Record Retention – 12 Years

Requires 12 year record retention. Applicable records are any and all documents and artifacts that prove compliance to the drawing. Records are to be delivered with the parts and should be a "stand alone" package.

N3. Cadmium, Tin and Zinc (Document Required)

All constructions and finishes containing pure cadmium or pure zinc shall be prohibited. Constructions and finishes containing pure tin shall be prohibited unless they contain a minimum of 3 weight percent alloying elements(s), i.e., lead, silver, etc. Seller shall submit a certificate with each shipment stating that no prohibited materials are present in their deliverable product.

QAR. Government Inspection at Incoming

ESA internal Code: Indicates required notification by Receiving personnel to on-site DCMA QAR representative for inspection at initial receipt of material.

R3 BGA X-ray Inspection (Document Required)

100% X-ray inspection of all BGA locations is required for 100% of the CCA's produced under this purchase order. X-rays are to be taken preferably using a 3D X-ray. X-ray must be taken at an appropriate angle to clearly show the existence of solder balls or acceptable solder coverage under the BGA.

These X-rays must be captured on a CD and included with the product shipment. Each X-ray must be labeled with the PN, SN and BGA reference designator. These records must be retained by the Supplier for a period of Ten (10) years past the contract date.

ID: **ESA-P-09-09**REV: **B**

PAGE 29 of 29

TITLE: **Quality Assurance (QA) Codes**RELEASE DATE: **07/28/2022**EFFECTIVE DATE: **LN GO LIVE**

ESA HEADQUARTERS

REVISION HISTORY

Revision	Date	Summary
New	9/25/2020	Create Corporate level QA Code document (combined FWO, MER, TAL)
A	07/26/2022	Change Record retention to ten (10) years, add B7
B	07/26/2022	Move B7 content to I.V to Code 1, changed doc requirements to align with LN.