Technical Services
Supplier Quality Assurance
Requirements
(Q Clauses)

TSM Q3, R-14
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Manager, Supplier Quality Assurance
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1.0 Purpose

This document establishes the procurement quality requirements (Q Clauses), that should be incorporated into the Procurement Document and which should govern performance of the Seller issued the Procurement Document. The elements of this manual supplements those requirements levied by NGTS Global Supply Chain within the Terms and Conditions (T&Cs).

2.0 Definitions

A. Buyer: Northrop Grumman Technical Services (NGTS) Global Supply Chain Buyer or Subcontract Administrator that has been issued delegation of procurement authority to make commitments for the procurement of material and services.

B. Seller: The legal entity that is providing products and/or services and has entered into a contractual relationship for providing products and/or services to NGTS through a Procurement Document.

C. Procurement Document: The Purchase Order or Subcontract between the Buyer and Seller.

D. Item: The product or service contracted for by the Procurement Document.

E. Rework: Previously documented and approved process that brings the product into conformance with defined requirements.

F. Repair: A condition where the product cannot conform to engineering standards; however, a subsequent operation can be performed to return the product to a condition that shall meet fit, form, and function.

G. Latent Defect: A flaw or other imperfection in an item which is discovered after delivery.

H. Commercial item: Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and has been sold, leased, or licensed to the general public; or, Has been offered for sale, lease, or license to the general public.

I. Commercial Off the Shelf (COTS) Item: Commercially available off-the-shelf (COTS) item, means any item of supply (including construction material) that is A commercial item (as defined in the paragraph above, in substantial quantities in the commercial marketplace; and Offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace; and does not include bulk cargo, as defined in 46 U.S.C. 40102(4), such as agricultural products and petroleum products.

3.0 Procurement Quality Requirements

3.1 Supplier’s Responsibility for Conformance

Northrop Grumman and its customers expect our suppliers to deliver material that is 100% compliant with all the Purchase Order (PO) requirements. If the supplier has difficulty with quality or technical issues encountered during the manufacturing process, or contractual requirements of the PO, a Request for Change/Information (RC/I), Form P0-F030, can be initiated by the supplier to request assistance. RC/I Form P0-F030 and the Help Desk contact list are available on OASIS and provide a tracking system that ensures issue resolution. RC/Is that are considered producibility enhancements will require the supplier to submit a business case presented upon RC/I issuance. The business case will provide justification on how the enhancement will improve quality, cost and/or schedule. Product nonconformance’s are not to be
documented on and will not be processed using the RC/I form. Product nonconformance’s shall be documented in accordance with paragraph SQ1-H, Nonconforming Material Control.

3.2 Specialty Metals

Northrop Grumman Technical Services (NGTS) requires products containing specialty metals to be compliant with DFARS 252.225-7009, “Restriction on Acquisition of Certain Articles Containing Specialty Metals”.

It is imperative that suppliers take the proper course of action to meet the requirements of this clause in the products you deliver to NGTS. All government supply Purchase Order suppliers are subject to DFARS 252.225-7009, which is incorporated in NGTS Terms and Conditions T-1, and included as an additional clause to T-2 for government commercial items per the DoD Specialty Metals requirement.

Failure to comply with the specialty metals clause may adversely impact delivery of NGTS products in support of the War Fighter, resulting in delays in schedule and potentially expensive retrofitting throughout the supply chain. You must ensure your products comply with the Specialty Metals clause prior to delivery to NGTS.

3.3 Counterfeit Prevention

The supplier shall maintain a documented Material Authenticity / Counterfeit Parts Prevention (MA/CPP) process for the avoidance, detection, mitigation, disposition and reporting of Counterfeit Parts. The Supplier’s MA/CPP process must be aligned with AS5553 and is subject to approval by the Buyer. The Suppliers MA/CPP process shall ensure it does not receive counterfeit parts into inventory, use them in manufacturing, or inadvertently sell them to other parties. The Buyer reserves the right to audit the Supplier’s MA/CPP process at the Supplier’s facility.

All electrical, electronic, electro-mechanical and electro-optical component parts delivered and/or used in the manufacture of deliverable products shall be from the Original Equipment Manufacturer (OEM) / Original Component Manufacturer (OCM)/ Authorized Aftermarket Manufacturer or Authorized Franchised distributor and NGC approved Electrical/Electronic Distributors. Evidence of Supply Chain Traceability or documentation of alternate means of material authenticity verification must be readily retrievable and provided to the Buyer upon request.

All non-electrical standard parts, like fasteners, nuts, washers, springs, o-rings, inserts, and pins, must have a certification from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM) / Authorized Aftermarket Manufacturer (AAM) / Authorized Franchised distributor and NGC approved suppliers.

In the event a part is not directly available from the OCM/ OEM/ AAM /franchised distributors (electronics) or authorized distributor (non-electronics), purchase from independent distributors may be made but the evidence of material authenticity (chain of custody) back to the OCM/ OEM/ AAM shall be provided. The Certification shall clearly identify the name and location of all of the supply chain intermediaries from the original manufacturer to the final source of the product delivered to Northrop Grumman.

Parts shall not be used or reclaimed and misrepresented as new. Component part suppliers delivering directly to NGTS shall provide the OCM/OEM/ AAM / Franchised / NGC approved certification with each lot/ shipment. The certificate shall include as a minimum: manufacturer name and address, manufacturer and/or buyer's part number and dash number, batch identification for the item(s) such as date codes, lot codes, heat lot, serializations, or other identifications, Signature or stamp with title of seller's authorized personnel signing the certificate.

Note: Distributors shall, in addition to the above, include their company’s certification for each part number shipped.
Supplier's that deliver next higher assemblies shall flow this requirement down to all their sub-tier suppliers to prevent the inadvertent use of counterfeit parts and materials. Component certifications from the OCM / OEM / AAM and Franchised must be readily retrievable and made available upon request.

If evidence of supply chain traceability (chain of custody) to the OCM/ OEM/ AAM / Franchised is not available, the supplier must request NGTS Program Engineering to evaluate the risk of using material without a pedigree - suspect counterfeit, by submitting a Request for Change/ Information (RC/I). The RC/I Form P0-F030 and the Help Desk contact list are available on OASIS/MyOASIS (https://oasis.northgrum.com). The RC/I provides a tracking system that ensures issue resolution. For suppliers with Design Authority, a technical assessment and recommended disposition shall be provided, and any other accompanying documentation shall be attached to the RC/I. If NGTS elects to accept the material as-is or requests additional risk mitigation tests or inspections, the supplier shall mark the material/ packaging and final shipping documentation with the RC/I document number for tracking purposes.

Note: Definitions of OCM/OEM/AAM and Franchised Distributor can be found in AS5553. OCM and OEM are considered interchangeable in this document.

### 3.4 Disclosures/ Notifications

The supplier’s system shall provide for timely reporting to the buyer of nonconformities that may affect already delivered product, including suspect/counterfeit parts, materials, and conditions under which product malfunctions, defects, and un-airworthy conditions have to be reported and dispositioned, or any continuing airworthiness actions. Notification to the buyer shall be submitted on supplier’s company letterhead and include a clear description of the discrepancy, and identification of all suspect parts (to include Northrop Grumman part numbers, Purchase Order Numbers and Item Numbers, serial numbers, manufacturing dates, quantities, etc.) and material affected by the deficiency, date(s) delivered, any information relating to the Root Cause / Corrective Action steps initiated to address the defective condition, and preventive measures taken to preclude recurrence of the process failure. Modifications of a disclosure (additions or deletions of data) requiring subsequent issuances shall be revision controlled to provide definitive sequencing (i.e. Rev 'A', 'B' etc.). To expedite the return of "suspect" or known nonconforming hardware to supplier for investigation, and necessary repair or replacement, suppliers shall provide return material authority (RMA) Number(s) along with the disclosure.

Suppliers shall ensure that their quality management system has the capability to report nonconformance(s) on Critical Safety Items (CSI) in full compliance with Defense Federal Acquisition Regulation Supplement (DFARS) 252.246-7003.

For suppliers with Design Authority, a technical assessment and recommended disposition shall be provided. This disclosure process shall also be extended to an issuance of a DCMA Corrective Action Request (CAR) to the supplier, or any of their sub-tier suppliers, for any product, material, or equipment that will support or is supporting a Northrop Grumman Technical Services Purchase Order. Upon receipt of a DCMA CAR, supplier shall promptly notify the buyer identified on the PO by submitting a copy of the CAR along with notification on supplier’s company letterhead to include identification of the CAR, product, material, equipment, and PO number in addition to any manufacturing, processing, testing, Quality System or other deficiencies cited. It is the responsibility of the Supplier to develop a root cause analysis and determine applicable corrective actions to prevent recurrence.

The supplier shall provide a response with all applicable evidence to NG with sufficient amount of time necessary for NG to review the corrective actions for accuracy and effectiveness. NG will concur or provide feedback to the supplier prior to the response being submitted to the Government.
3.5 **Electronic Components, Assemblies, Subsystems or Systems**

Any Manufacturer or Distributor that provides Electronic Components, Assemblies, Subsystems or Systems shall have a third-party certified quality management system in accordance with one of the following industry standards: AS9100; AS9120; ISO9001; as defined in the contractual requirements.

The Supplier shall maintain a documented Material Authenticity / Counterfeit Parts Prevention (MA/CPP) process for the avoidance, detection, mitigation, disposition and reporting of Counterfeit Parts that aligns with AS5553 requirements (revision at the time of purchase order release) that documents:

(a) **the** processes used for assuring that only authentic and conforming materiel is procured and
(b) **the** processes to be used for risk mitigation, disposition, and reporting in the event any counterfeit materiel is encountered in its supply chain.

The Supplier shall be a member of GIDEP, if eligible, and review and take appropriate corrective and preventive actions on all GIDEP alerts applicable to material offered for re-sale. This includes alerts for suspect/counterfeit conditions as well as routine technical issues.

If Buyer authorizes the supplier to provide Electronic Parts without Supply Chain Traceability, the Supplier shall demonstrate the capability to have all authenticity validation tests and inspections (e.g.: IDEA- STD-1010) performed and managed per the direction of Buyer. Buyer reserves the right to disapprove the use of any facility for authenticity testing.

3.6 **Cancelled or Superseded Specifications**

“Cancelled or superseded military specifications that are called out on legacy Northrop Grumman engineering drawings and drawings with Northrop Grumman acquired design cognizance, shall be certified to the latest or superseding specifications, and provided there is a clear linkage via DODISS or IHS website. Suppliers are cautioned to verify the “Cancellation Notice” because certain cancelled military specifications have been reinstated in recent years. In addition, processing shall be continued to the cancelled specification when the “Cancellation Notice” does not provide a clear direction for a superseding specification or as directed by the cognizant M & P Engineering.”

3.7 **Exception to Rejections**

In the event a supplier does not accept the responsibility for a discrepant condition, the supplier shall initiate a letter of exception to their buyer. The letter shall make full reference to applicable documents and be specific in defining the area of exception.

3.8 **Supplier Sub-tier Control**

Supplier is responsible for ensuring the following:

- All items procured from its subcontractors conform to all requirements of the Northrop Grumman purchase order
- All applicable provisions of this document are flowed to its subcontractors including copies of the latest revision process specifications
- Specifying on their purchase order for special processes “Northrop Grumman Technical Services” as your customer, Program identification such as B-2 and the latest process specification revisions.

3.9 Northrop Grumman Technical Services accepts other NGC Sectors delegated source/ Supplier Self Inspection programs for shared suppliers. Northrop Grumman and its customers retain the right to impose inspection requirements independent of the supplier’s Delegated Source authority.
**Note:** Delegated Suppliers are not exempt from audits and on-site verification of corrective action. Material currently undergoing corrective action investigation processing up to and including verification of corrective action shall not be shipped without the authorization of Northrop Grumman Supplier Assurance.

3.10 **Contamination / Foreign Object Debris (FOD)**
Supplier is responsible to ensure that the work environment needed to achieve conformity of product and service requirements includes the elimination of contamination or foreign objects being introduced during any manufacturing, testing or packaging activities. This requirement is applicable to the extent of the supplier’s business activities. Good housekeeping practices should identify and preclude any foreign object or contamination being introduced during processing a shipment to NGC, or directed customer.

3.11 The requirements specified in the General Quality Assurance Requirements, SQ-1, are applicable to the level of the procurement being made.

3.12 The following Q Clauses are required to be incorporated into the Procurement Document when applicable. Attachment B provides a list of Supplier Quality Assurance Requirements based on commodity types and basic requirements.
SQ-1 General Quality Assurance Requirements

Guidance: A, B, C, D, E, F, G, H, I, J, K, L, M, N, and O. All apply when SQ-1 is required. Exclusions will be noted in the Material Master or on the Purchase Order.

A. PROHIBITED PRACTICES

1. Unauthorized Repairs: Seller shall not repair any damaged item, or any item found to be faulty during manufacturing or that fails to meet Buyer specification/drawing requirements, without Buyer’s written approval, except when the nonconformance is minor and Material Review Board (MRB) authorization has been granted by Northrop Grumman. Seller is not authorized to perform MRB activities on non-conforming materials without Buyer authorization.

2. Change in Approval, Drawing, Processes, Materials, or Procedures: Seller shall not change any drawing, process, material (including sub-tier supplier parts), or procedure without prior Buyer’s written approval, if such drawing, process, material, or procedure was used to qualify items or which was used by Seller to become a qualified source.

NOTE: The following sub-articles do not apply to a Supplier that has design authority over their own products.

3. Seller shall notify Buyer of any proposed change in design, fabrication method, or process, and obtain approval from Buyer before making the change.

   a. Articles, which have incorporated approved changes, shall be appropriately identified.

4. Seller shall notify buyer of item latent defects found by seller or sub-tier suppliers.

5. Re-submittal of Rejected Items: Any item rejected by Buyer and subsequently resubmitted to Buyer shall be clearly identified as a resubmitted item, indicating the Procurement Document number and Buyer’s reject document number in Seller’s Certificate of Conformance.

6. Notification of Facility Change: Seller shall not use any production, manufacturing, and/or processing facilities that differ from facilities previously approved by Buyer without first notifying Buyer and affording Buyer an opportunity to examine and approve such facilities for compliance with procurement quality requirements. Seller shall not relocate any production, manufacturing, and/or processing facilities previously approved by Buyer without first notifying Buyer and affording Buyer an opportunity to examine and approve such facilities for compliance with procurement quality requirements.

7. Changing of Test Facility: If a specific test facility was previously approved by Buyer as provided for in the Procurement Document, the Seller shall not change a test facility or use another test facility to meet specification/drawing requirements without prior Buyer’s written approval.

8. Change in Quality Management System status: Seller shall notify Buyer when a significant change in QMS certification status occurs, such as approval of QMS to ISO 9001, AS9100, AS9120 or FAA Repair Station requirements, major findings that jeopardize supplier’s certification status, loss of certification, or supplier’s willful decision to opt out of QMS certification to one of the standards noted above.
9. Change of Management/Owner: Seller shall notify Buyer when a significant change in management or ownership has occurred.

B. RESPONSIBILITY FOR CONFORMANCE

1. Neither surveillance, inspection, and/or test made by Buyer or its representatives or US Government representatives at either Seller’s or Buyer’s facility, or Seller’s compliance with all applicable procurement quality requirements, shall relieve Seller of the responsibility to furnish an item that conforms to the requirements of the procurement document.

2. Seller shall control sub-tier supplier procurements to the extent necessary to ensure quality requirements specified in the procurement document are satisfied.

3. When required, Quality requirements shall include, but are not limited to, the following:
   a. Sub-tier supplier pre-award survey/evaluations
   b. Periodic auditing of supplier
   c. Implementing a sub-tier supplier rating system
   d. Ensuring adequate review of procurement documentation prior to procurements
   e. Controlling procurement of critical items for Seller’s product
   f. Inspection of procured items to documented procedures
   g. Control of non-conforming material, including corrective action

4. Product nonconformance’s shall be documented in accordance with paragraph SQ1-H, Nonconforming Materials.

C. BUYER SURVEY, SURVEILLANCE, AUDITS AND INSPECTION

1. Buyer or Buyer’s representative, as well as their customers and regulatory authorities shall have the right of access to conduct surveys, audits, and surveillance of Seller facilities involved in the Procurement Document and applicable records, and those of Seller’s sub-tier suppliers with prior coordination with Seller, to determine capability to comply, and to verify continuing compliance, with the requirements of the Procurement Document and applicable state or federal regulations.

2. Buyer or Buyer’s representative shall have the right to perform an inspection at Seller’s facilities and those of Seller’s sub-tier supplier with prior coordination with Seller, during the period of manufacturing and inspection prior to shipment.

3. Final inspection and acceptance shall be performed at a NGTS facility, unless otherwise specified in the Procurement Document.

D. FAILURE REPORTING

When an electronic item is returned to a seller for troubleshoot and/or repair, the seller shall provide a document that outlines what actions were taken to return the item to a serviceable condition; information shall include but not be limited to the following:

1. Procurement Document number
2. Part number
3. Discrepancy from customer
4. Fault found
5. Actions taken to repair discrepancy
6. Test procedure used to verify fault has been eliminated
7. Failure Reports shall be signed by Seller’s duly authorized representative.

E. CORRECTIVE AND PREVENTIVE ACTION

1. General:

   The supplier shall respond to all requests for corrective action on or before the requested response due date. The response must be submitted on the supplier’s letterhead. In addition, complete and submit the Northrop Grumman Corrective/Preventive Action and Root Cause Analysis Worksheet form TSF Q10-a when directed. Supplier shall maintain a documented system for determining root causes of documented defects and obtaining corrective action and preventive action both internally and from its suppliers. The supplier is accountable for effectiveness of corrective and preventive actions taken.

Buyer requests for corrective and preventive action will be issued to the supplier’s representative in the form of, but not limited to,

- Supplier Information Notice
- Supplier Corrective Action Request (SCAR)
- Failure analysis reporting when required by engineering specification or contract data item requirements.

A. Level & Type:

1) Level 1 - Supplier Information Notice (SIN): A document used as a notice to the supplier of a discrepancy found on a part, material, sub-assembly or assembly delivered by the supplier to NGTS. Issued when minor or isolated contractual non-compliances can be corrected on the spot where they do not adversely affect cost, schedule, or performance. May be issued when the nonconforming product is dispositioned “Use As-Is”, “Repair”, or “Rework”; and the item and/or evidence of the non-conformance will not be returned to the supplier to perform a Root Cause Corrective Action analysis/investigation.

2) Level 2 - Supplier Corrective Action: A document used to request formal written corrective action for minor or isolated non-conformances. Issued when contractual non-compliances cannot be corrected on the spot and where they could adversely affect cost, schedule, or performance if not corrected. Level 2 SCARs shall be sent to the responsible NGTS Global Supply Chain Buyer/SCA representative and shall be directed to the supplier’s Quality/Management point of contact.

3) Level 3 - Supplier Corrective Action: A document used to request formal written corrective action for major/serious contractual non-compliances or systemic non-conformances and/or if collective analysis resulted in the issuance of program CAR. This shall be issued when major/serious contractual non-compliances cannot be corrected on the spot and where they could adversely affect cost, schedule, or performance if not corrected. Level-3 SCARs shall be sent to the responsible NGTS
Global Supply Chain Buyer/SCA representative and shall be directed to the supplier Quality/Management point of contact.

B. The minimum information required for each level is noted in the SCAR letter. The required information is based on the SCAR type as noted below.

1) Level 1 SINs shall be directed to the supplier Quality/Management point of contact. The supplier response shall include:

- Work in Process (WIP)
- Stock/Inventory status
- The traceable part marking
- Objective evidence of internal rejection document
- Disclosure for any previous escapes found as a result

**NOTE:** For informal requests the Supplier shall maintain records of their review on file for verification by the Buyer or their representative

2) Level 2 SCARs shall be sent to the supplier’s Quality/Management point of contact. The Supplier’s response shall include:

- Immediate C/A
- Root cause analysis
- Preventive C/A
- Follow-up verification to assure adequacy of C/A effectivity
- Disclosure for any previous escapes found as a result

3) Level 3 SCARs shall be sent to the supplier’s highest level of Quality/Management for the supplier. The Supplier’s response shall include:

- Completed Form (TSF Q10-a)
- Root Cause
- Corrective/Preventive Action
- Effectivity
- Disclosure for any previous escapes found as a result

2. Guidelines and Training for Corrective Action / Preventive Action and Root Cause Analysis (CA/PA – RCA)

Suppliers requiring training in the proper completion of CA/PA – RCA should utilize the Northrop Grumman “Corrective Action / Preventive Action and Root Cause Analysis Tools” available on OASIS at [https://oasis.northgrum.com/contract/qualdocs.htm](https://oasis.northgrum.com/contract/qualdocs.htm). These tools are intended to communicate Northrop Grumman’s expectations for effective supplier corrective actions to prevent defect recurrence. Onsite training assistance from Northrop Grumman is available by contacting Supplier Quality Assurance.

3. Corrective Action Response Extensions

Northrop Grumman may grant the supplier an extension for their corrective action response on a case-by-case basis. Suppliers may formally request a time extension at least forty-eight (48) hours prior to the assigned corrective action response due date. Request must be in
writing with adequate justification documenting the status of the investigation, revised corrective action completion dates and a listing of previous actions taken toward implementation of effective preventative action, as applicable.

4. Verification of Corrective Action (VCA)
Northrop Grumman retains the right to conduct corrective action verification at the supplier and/suppliers sub-tier supplier’s facility to assess effectiveness of implemented corrective action. Northrop Grumman may grant the supplier an extension for their VCA response on a case-by-case basis.

Note: Delegated Suppliers are not exempt from on-site verification of corrective action. Material currently undergoing corrective action investigation processing up to and including verification of corrective action shall not be shipped without the authorization of Northrop Grumman Supplier Assurance.

F. U.S. GOVERNMENT SOURCE INSPECTION
For procurements made under U.S. Government contracts, the U.S. Government shall have the right to inspect any and all of the work contracted through the Procurement Document, at Seller’s facilities or at sub-tier supplier’s facilities. Seller quality control or inspection system and manufacturing processes are subject to review, verification, and analysis by authorized U.S. Government representatives.

G. MEASURING AND TEST EQUIPMENT
1. As applicable to this procurement, the Seller shall be responsible for validating the accuracy and stability of tools, gages, and test equipment used to demonstrate that any item conforms to the requirements specified in the Procurement Document.
2. Documented schedules shall be maintained for periodic calibration to adequate standards.
3. Objective evidence of calibrations shall be recorded and made available for Buyer’s review.

H. NONCONFORMING MATERIALS
Nonconforming material must be identified and documented, segregated or bonded, pending disposition when found, to prevent its unintended release or use, and evaluated to determine the actions necessary to contain its effect on other processes or products.
1. Seller shall provide and maintain a corrective action and disposition program for non-conforming materials.
2. Seller shall provide for control, segregation, and identification of non-conforming materials detected at Seller’s facilities.
3. Seller shall not have MRB disposition authority without Buyer’s written authorization.
4. No Repair shall be allowed outside of the specific specification limits unless prior written approval is obtained by Seller from Buyer.
5. No Rework shall be allowed unless prior written approval is obtained by Seller from Buyer.
6. The RC/I process noted in 3.1 above shall not be used to document nonconforming material

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I. INSPECTION RECORDS
1. Seller **shall** maintain records of all inspections and tests performed on any item delivered to NGTS.
2. Records **shall** identify any non-conformance and **shall** be made available for Buyer’s review.
3. Seller and subcontractors **shall** ensure records are available for review by Customers and Regulatory Authorities in accordance with contract or regulatory requirements.

J. SAMPLE INSPECTION
1. Seller, prior to implementation of a sampling plan, **shall** receive written approval from Buyer.
2. Seller **may** use sample inspection plans, when tests are destructive, or when the records or inherent characteristics of the product indicate that a reduction in inspection/testing can be achieved without jeopardizing product quality.
3. Sample inspection **shall** be in accordance with the applicable Buyer specification. When not specified by Buyer, military standard sampling plans, e.g., from ANSI/ASQCZ1.4-1993, MIL-STD-414, or handbooks H016, H017, and H018, **may** be used.
4. All sample inspection plans **shall** provide valid confidence in specified quality levels.

K. IDENTIFICATION
1. All materials **shall** be identified by a part number and revision, permanently and legibly affixed directly to the surface of each article,
2. In the event this is not possible due to physical size or nature of material, an identification tag **shall** be securely affixed to each article, or
3. If articles are supplied in individual or multi-unit containers the container **shall** reveal the appropriate identification.

L. PACKAGING, PRESERVATION, AND STORAGE
1. Seller **shall** incorporate good commercial practices for preservation and packaging of all articles that apply to this Procurement Document.
2. Seller **shall** identify each package permanently and legibly with Procurement Document number, manufacturer's name, date shipped, and packing sheet number.
3. Packaging **shall** be selected, to the extent necessary, to provide protection from physical and environmental damage during shipping and handling.
   a. Cushioning materials **shall** be applied, as required, to protect and to restrict movement of items.
4. All materials which are volatile, toxic, or emit fumes, which are harmful to human health, **shall** be properly contained in accordance with applicable health and safety requirements.
   a. Containers **shall** be plainly marked as to its contents with appropriate warnings, precautions, instructions, and storage conditions.
   b. Material Safety Data Sheet (MSDS) **shall** be included with each shipment.

M. STORAGE AND SHELF LIFE
1. Seller **shall** identify materials and articles having definite characteristics of quality degradation or drift with age and/or the environment.

2. Seller **shall** provide a copy of the manufacturers Certificate of Conformance (C of C) that defines the shelf life characteristics of any material that fits into this category. Identification **shall** include the following information as a minimum:
   a) Date of manufacturer
   b) Batch and/or lot numbers
   c) Date of expiration
   d) Procurement Document number
   e) Any special storage conditions for the material

   If a material has no identified shelf life the certificate **shall** note this condition. Seller’s certificate should be traceable to the place of procurement or manufacturer. A manufacturer’s certificate that is traceable to the material provided is acceptable.

3. If environment is a factor in determining useful life, identification **shall** also include the storage temperature, humidity, etc., required to achieve the stated useful life.

4. In no case **shall** materials or articles be supplied to NGTS with less than 75% of its useful life or cycles remaining; however, Seller **shall** verify that sufficient operating life and environmental margin remains to meet the specified requirements of the procurement document.

5. If Buyer so chooses they may accept material with less than 75% of the shelf life remaining due to critical need and will document this action on the Procurement Document directing the seller to ship the material.

N. SELLER’S BASIC CERTIFICATE OF CONFORMANCE

1. A Certificate of Conformance **shall** be provided with each shipment with the following information at a minimum:
   a. Procurement Document and Line Item Number
   b. Identifying nomenclature such as Item Name, Part Number, Revision, Serial Numbers
   c. Quantity shipped
   d. Conformance Clause: “The items furnished per Buyer’s procurement document have been manufactured, tested, and inspected in accordance with the requirements of the applicable specifications/drawings and the results of such tests and inspections meet the requirements thereof.” (or equivalent wording)
   e. The Certification of Conformance **shall** be signed by Seller’s duly authorized representative.

O. CERTIFICATE OF GOVERNMENT APPROVED QUALIFIED PARTS LIST (QPL) ITEMS

When the items supplied are required to be Qualified Parts List (QPL)/Qualified Manufacturers Line (QML) parts the following **shall** apply:
1. Seller **shall** submit a certification identifying that the manufacturer of the material described herein has been granted qualification by the Defense Supply Agency (DSA) in accordance with the applicable military specification.

2. The inclusion of products from the QPL **shall** not relieve the manufacturer of their responsibility for providing items, which meet all specification requirements, or for performing the qualification, inspections, and tests specified for such items.

**SQ-2 Buyer Inspection/Surveillance**

**Guidance:** Select each section that is required A, B, C, D, E, F, G, or H.

**A. SOURCE INSPECTION**

1. Buyer **shall** be present (or provide a representative) to perform source inspection at Seller's facilities or where designated in the Procurement Document prior to shipment.

2. Inspection and test of the articles defined in this contract **shall** be performed by Seller, and **shall** be subject to witnessing by Buyer (or representative).

3. Seller **shall** provide reasonable inspection facilities for Buyer (or representative) to verify conformance to requirements.

4. Seller **shall** provide inspection/test data and reports to Buyer’s Source Inspector indicating which characteristics, parameters, dimensions, etc., were actually tested/inspected for validation to Buyer’s specification/drawing requirements.

5. After Buyer’s Source Inspection, any rework or test of the item, including any nonscheduled entry, such as removal of a panel, cover, or enclosure **shall** void the source inspection.

6. For any nonscheduled entry, rework, or test, Seller **shall** request Buyer to repeat source inspection.

7. Buyer **shall** be notified at a minimum of seven (7) workdays prior to commencement of these activities to allow for arrangements for Buyer and/or Buyer’s quality representative to be present during inspection and test.

**B. BUYER IN-PROCESS INSPECTION**

1. Buyer or Buyer’s representative **shall** perform in-process inspection at Seller’s facilities.

2. Seller **shall** submit to Buyer an inspection plan or traveler designating in-process source inspection points.

3. Buyer **shall** designate required in-process source inspection points and inform Seller in writing.

4. Seller **shall** provide reasonable inspection facilities for Buyer or Buyer’s representative to verify conformance to requirements.
5. After Buyer’s Source Inspection, any rework or test of the item, including any nonscheduled entry, such as removal of a panel, cover, or enclosure shall void the source inspection.

6. For any nonscheduled entry, rework, or test, Seller shall request Buyer to repeat source inspection.

7. Seller shall notify Buyer at a minimum of 48 hours prior to the time in-process inspection coverage is required.

C. BUYER PRECAP INSPECTION

Items in the procurement document shall require pre-cap inspection by Buyer’s Quality Field Engineering subsequent to the 100 percent pre-cap visual inspection performed by Seller.

D. BUYER SCANNING ELECTRON MICROSCOPE ANALYSIS

1. Buyer’s approval of Scanning Electron Microscope (SEM) analysis shall be required for wafer lots to be incorporated in parts supplied to Buyer’s Quality Field Engineering.

2. SEM analysis shall be performed by Seller and shall be approved by Buyer prior to the incorporation of wafers in parts.

E. BUYER SOURCE SURVEILLANCE

1. Buyer’s Quality Field Engineering shall perform surveillance at Seller’s facilities during the contract period.

2. Surveillance shall be scheduled by Buyer, and coordinated with Seller prior to implementation.

3. Surveillance activities shall include all functional areas necessary for Buyer or Buyer’s representative to verify the quality of the procured product.

F. BUYER SOFTWARE AUDITS

Buyer or Buyer’s representative shall perform audits, reviews, and/or verifications at Seller’s facilities during the development and test of software to be furnished for this procurement.

G. Electronic Source Inspection

1. Seller shall provide electronic source inspection.

2. Electronic source inspection shall consist of photos sent to Buyer via electronic media. Test data shall also be sent electronically when Q-7 is required on the Purchase Order.

3. Buyer shall review and provide authorization to ship predicated on the results of the photos and test data when test data is required with Q-7 on the Purchase Order.

H. VERIFICATION OF PURCHASED PRODUCT

1. Verification activities performed by the Buyer or Buyer’s customer at any level in the Seller’s supply chain shall not be used by the Seller as evidence of effective control of quality and
does not absolve the organization of its responsibility to provide acceptable product and comply with all requirements.

2. Verification activities can include:
   a. Obtaining objective evidence of the conformity of the product from the Seller (e.g. accompanying documentation, certificate of conformity, test records, statistical records, process control records)
   b. Inspection of the required documentation
   c. Inspection of products upon receipt, and
   d. Delegation of verification to the supplier or supplier certification

3. Where purchased product is released for production use pending completion of all required verification activities, it shall be identified and recorded by the Seller to allow recall and replacement if it is subsequently found that the product does not meet requirements.

4. If the Buyer delegates verification activities to the supplier, the requirements for delegation shall be define by the Buyer and a register of delegated shall be maintained by the Seller

**SQ-3 U.S. Government Source Inspection (NASA)**

**Guidance:** A, B, C, D and E all apply when SQ-3 is required.

A. All work under the procurement document shall be subject to inspection and test by the U.S. Government at any time and place.

B. The U.S. Government representative, who has been delegated NASA quality assurance functions for the procurement document, shall be notified immediately upon receipt thereof.

C. The U.S. Government representative shall be notified three working days in advance of the time the items are ready for inspection or test.

D. In the event the U.S. Government representative cannot be contacted, Buyer shall be notified immediately.

E. Seller, without additional charge to the procurement document, shall provide all reasonably required facilities and assistance for the convenience and safety of the U.S. Government representatives in the performance of their duties.

**SQ-4 U.S. Government Source Inspection (DoD)**

**Guidance:** A, B, C, D and E all apply when SQ-4 is required.

A. U.S. Government source inspection shall be required prior to shipment from Seller’s facility.

B. Upon receipt of this procurement document, Seller shall immediately notify and provide a copy of the procurement document to the U.S. Government representative, who normally services Seller’s facility, so appropriate planning for U.S. Government source inspection can be accomplished.
C. If a U.S. Government representative does not normally service Seller’s facility, the nearest Army, Navy, Air Force, or Defense Agency inspection Office shall be contacted.

D. In the event a U.S. Government representative cannot be contacted, Buyer shall be notified immediately.

E. Seller, without additional charge to the procurement document, shall provide all reasonably required facilities and assistance for the convenience and safety of the U.S. Government representatives in the performance of their duties.

**SQ-5 Raw Material Documentation Requirements**

**Guidance: Select each section that is required A or B.**

A. Shipment of materials, whether raw, semi-finished, or finished, shall be accompanied by a Certificate of Conformance from Seller, stating at a minimum:

1. Material identification by specification number and material conditions, where applicable.
2. The raw material manufacturer’s or mill’s lot or batch number.
3. A statement of raw material conformance to applicable requirements.
4. The name and location of the raw material manufacturer or mill.

B. All items defined in SQ5-A with the addition of actual chemical/physical test results that substantiate compliance with the applicable raw material and/or specification requirements shall be provided.

**SQ-6 Control of Processes**

**Guidance: A and B apply when SQ-6 is required.**

A. Buyer shall approve special processes performed by Seller, or any of its sub-tier suppliers, including the system/procedures used to control special processes. Processes requiring Buyer approval include:

1. Welding, destructive physical analysis, brazing, dye penetrant inspection, painting, radiographic inspection, plating, heat treating of metals, casting, chemical surface treatments, forging, contamination control, bonding, magnetic particle inspections, conformal coat, composites, soldering, pressure test, and ultrasonic inspection
2. Any other processes defined in the Procurement Document

B. Buyer approval of special processes shall not relieve Seller of responsibility for exercising the control measures necessary to ensure delivered items conform to the requirements of the Procurement Document.

**SQ-7 Inspection / Test Data**
**Guidance:** A and B apply when SQ-7 is required.

A. When Buyer’s specifications or Procurement Document require test data to be recorded during the performance of acceptance testing, a paper or preferably electronic copy of the recorded data, showing evidence of Seller's inspection and verification of performance, **shall** accompany each shipment.

B. Data **shall** meet the requirements of Buyer’s specifications or Procurement Document and, at a minimum, be identified with:

1. Buyer’s Procurement Document number and change notice number
2. Part number
3. Lot numbers, serial numbers, or date codes of items tested
4. Drawing/specification and revision used
5. Type of test performed
6. Identification number of test equipment used
7. Total quantity of items tested, quantity of items accepted, and quantity of items rejected
8. Any codes, keys, or other information necessary to interpret Seller data

**SQ-8 Radiographic / Computer Tomography Inspection**

**Guidance:** A, B, C, D, and E apply when SQ-8 is required. Exclusion of B or C is acceptable based on inspection method.

A. Seller **shall** be approved by Buyer to perform the radiographic/computer tomography inspection applicable to this Procurement Document or **shall** use a facility approved by Buyer.


C. Unless otherwise specified by the parts specification, computer tomography **shall** comply with ASTM-E1441 “Standard Guide for Computer Tomography Imaging”.

D. The radiographic film / image and a copy of the report **shall** accompany the shipment of the items to NGTS.

E. Serial number location and x-ray position **shall** be recorded as part of, or attached to, the report.

**SQ-9 Requirements for Distributors**

**Guidance:** A, B and C apply when SQ-9 is required.
A. The Distributor (a Seller other than the Manufacturer) shall certify that the articles delivered under this Procurement Document conform to the applicable requirements of Buyer’s or Manufacturer’s specifications for the article ordered.

B. The Distributor certification of conformance shall include the following information:
   1. The origin of manufacture
   2. Part number
   3. Applicable traceability information (date lot code, etc.)
   4. Results of testing or special inspection, as required.
   5. Dated signature of authorized Seller Representative
   6. Items identified by Buyer number shall have complete information as to the original manufacturer and original manufacturer's part number

C. The Distributor shall maintain and provide evidence of material authenticity (chain of custody) back to the OCM/ OEM/ AAM shall be provided. The Certification shall clearly identify the name and location of all of the supply chain intermediaries from the original manufacturer to the final source of the product delivered to Northrop Grumman.

SQ-10 Seller Inspection Reporting Requirements

Guidance: A, B, C, and D apply when SQ-10 is required.

A. Seller shall submit, with each shipment of items, one copy of an inspection report reflecting 100 percent inspection verification of all drawing characteristics, including notes, for all products.

B. The report shall delineate each drawing characteristic and specify the corresponding actual measurement results.

C. Inspection record traceability shall be maintained by either serializing each item, if allowed, or tag identification. The item identification is then matched with the corresponding inspection report.

D. The only exception to the above procedure applies to items machined under tape-controlled or automatic conditions. In that case, the 100 percent inspection report shall be limited to the first and last item procured from one continuous set-up.
   1. The inspection report shall state that the items were machined under tape-controlled or automatic conditions.

SQ-11 Calibration System Requirements

Guidance: A and B apply when SQ-11 is required – Buyer shall specify applicable calibration standard in B (1, 2, or 3).
A. Seller **shall** be responsible for the calibration, accuracy, validation, and maintenance of any equipment, tooling, or gauges utilized by Seller to produce, inspect, or test articles to be delivered under this Procurement Document.

B. Seller’s equipment calibration system **shall** be in accordance with one of the three requirements listed below:

1. MIL-STD-45662A or
2. ANSI/NCSL Z540-1 or
3. ISO 11012-1

**SQ-12 Control of Software**

**Guidance:** Select any combination of A, B, and C that apply. A Software Quality Assurance Program **shall** be selected when using A: SQ12A-b, SQ12A-b, SQ12A-c, or SQ12A-d.

A. SOFTWARE QUALITY PROGRAM

1. Seller **shall** establish a Software Quality Assurance Program that conforms to the standards specified below, and is subject to Buyer review and approval:
   a. AS9006, Deliverable Aerospace Software Supplement for AS9100A,
   b. ISO/IEC 12207, Software Life Cycle Processes,
   c. Capability Maturity Model Integration (CMMI) - Level 3 or higher, or

B. SOFTWARE DELIVERY DOCUMENTATION

1. Seller **shall** deliver software documentation as specified in the Procurement Document.

2. Software documentation **shall** be sufficient to ensure:
   a. All requirements are achieved or waivers are submitted
   b. Configuration is correct and deliverables are properly identified and marked
   c. Planned level of acceptance is achieved and/or approved deviation/waivers are made part of the deliverable documentation package
   d. Operating instructions accompanying the developed software are sufficient to enable loading, initialization, and operation by Seller’s personnel

C. CONTROL OF TEST SOFTWARE

1. Seller **shall** provide and maintain a system for the control of software used in the qualification/acceptance testing of deliverable hardware, software, and firmware to be furnished for this procurement.
2. Seller **shall** maintain procedures and test records for items delivered to NGTS and these records **shall** be available for Buyer review.
SQ-13  Electrostatic Discharge Control

**Guidance:** A, B, C and D apply when SQ-13 is required.

A. Seller **shall** provide and maintain a program for Electrostatic Discharge (ESD) control for hardware items to be furnished for this procurement in accordance with one or more of the following standards:

1. MIL-STD – 1686 Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (excluding Electrically Initiated Explosive Devices)
2. ANSI-S20.20 Parts, Electrical and Electronic, Assemblies and Equipment, Protection of (excluding Electrically Initiated Explosive Devices), for the Development of an Electrostatic Discharge Control Program
3. EIA 625 Requirements for Handling Electrostatic Discharge Sensitive Devices
4. MSFC-STD-1800 ESD Control for Propellant and Explosive Devices
5. DoD 4185.26m Contractors Safety Manual for Ammunition and Explosives

B. Seller’s ESD control program **shall** be subject to review and approval by Buyer.

C. Items **shall** be packaged with ESD protective material.

1. ESD protective caps **shall** be used on equipment external connectors or contacts that connect to ESD parts and assemblies within the equipment.
2. All packages **shall** be identified with a suitable precautionary label.
3. The label **shall** not be utilized as a sealing device.

D. Any ESD components or assemblies received by NGTS that are not in an ESD protective material **shall** be subject to return to Seller. NOTE: ESD requirements are defined as applicable to any active or passive components.

SQ-14  NASA Quality Program Provisions

**Guidance:** Select A or B.

A. Seller **shall** provide and maintain a quality assurance program in accordance with NASA Quality Publication NHB 5300.4 (1B), “Quality Program Provisions for Aeronautical and Space System Contractors”.

B. Seller **shall** provide and maintain a quality assurance program in accordance with NHB 5300.4 (1B), “Quality Program Provisions for Aeronautical and Space System Contractors”, that have been tailored as specified in Buyer’s Procurement Document.

**Guidance:** Select A or B.

A. Seller **shall** provide and maintain an inspection system in accordance with NASA Publication NHB 5300.4(1C), “Inspection System Provisions for Aeronautical and Space System Material, Parts, Components, and Services”.

B. Seller **shall** provide and maintain an inspection system in accordance with NHB 5300.4(1C), “Inspection System Provisions for Aeronautical and Space System Material, Parts, Components, and Services,” that have been tailored as specified in Buyer’s Procurement Document.

SQ-16 DELETED

SQ-17 Prohibited Material

**Guidance:** Buyer will specify A and/or B. C always applies when SQ-17 is required.

A. All constructions and finishes containing pure cadmium or pure zinc **shall** be prohibited.

B. Constructions and finishes containing pure tin **shall** be prohibited unless they contain a minimum of 3 weight percent alloying element(s), i.e., lead, silver, etc..

C. Seller **shall** submit a certificate with each shipment stating that no prohibited materials are present in their deliverable product.

SQ-18 Semiconductor Certification

A. Shipment of electronic devices using semiconductors **shall** be accompanied by a certification of conformance from Seller, stating at a minimum:

1. The name and location of the original manufacturer of any semiconductor used in the fabrication of the end item.

2. The semiconductor lot number.

SQ-19 Quality Management System

**Guidance:** Select A or B, C or D, or E, F, G, H, or I.

A. ISO 9001 Compliant

1. Seller **shall** provide and maintain a Quality System that is compliant to ISO 9001.

2. Seller’s capability to perform satisfactorily to these requirements **shall** be demonstrated by having a successful audit performed by Buyer or Buyer’s representative.
B. ISO 9001 Registered

1. Seller shall provide and maintain a Quality System that is registered to ISO 9001.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having an ISO Certification from an accredited registrar.
   
   a. Buyer shall reserve the right to conduct an assessment of Seller’s Quality System.

C. AS9100 Compliant

1. Seller shall provide and maintain a Quality System that is compliant to AS9100.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having a successful audit performed by Buyer or Buyer’s representative.

D. AS9100 Registered

1. Seller shall provide and maintain a Quality System that is registered to AS9100.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having an AS Certification from an accredited registrar.

E. Capability Maturity Model Integration (CMMI) - Level 3

1. Seller shall provide and maintain a Quality System that meets the requirements of CMMI Level 3.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having Software Engineering Institute (SEI) CMMI 3 rating from an accredited appraiser.
   
   a. Buyer shall reserve the right to conduct an assessment of Seller’s Quality System.

F. Capability Maturity Model Integration (CMMI) - Level 4

1. Seller shall provide and maintain a Quality System that meets the requirements of CMMI Level 4.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having Software Engineering Institute (SEI) CMMI 4 rating from an accredited appraiser.

3. Buyer shall reserve the right to conduct an assessment of Seller’s Quality System.

G. Capability Maturity Model Integration (CMMI) - Level 5

1. Seller shall provide and maintain a Quality System that meets the requirements of CMMI Level 5.

2. Seller’s capability to perform satisfactorily to these requirements shall be demonstrated by having Software Engineering Institute (SEI) CMMI 5 rating from an accredited appraiser.
a. Buyer **shall** reserve the right to conduct an assessment of Seller’s Quality System.

H. FAA FAR Part 145 Repair Station

1. Seller **shall** provide and maintain a Quality System that is compliant to FAR Pt. 145 requirements approved by the regional FSDO or higher level FAA office.

2. Seller’s capability to perform satisfactorily to these requirements **shall** be demonstrated by having a successful audit performed by Buyer or Buyer’s representative.

3. Seller shall maintain a type rating on the FAA FAR Pt. 145 certificate applicable to the airframe and/or commodity affected by the procurement document.

I. Quality Management System

1. Seller **shall** have a formalized Quality System.

2. Buyer **shall** have the right to conduct surveys, audits, and surveillance of the Seller’s capability to perform satisfactorily to these requirements.

**SQ-20 First Article Inspection**

**Guidance:** A and B apply when SQ-20 is required.

A. Inspection and acceptance by Buyer of the first article **shall** be required prior to the start of fabrication of a new product, if it has been 24 months or more since last product was produced, or a change to form, fit, or function of the product has occurred.

B. Seller **shall** submit a First Article Report to Buyer demonstrating compliance with the requirements in the Procurement Document and referenced documents (refer to AS9102 and ASME Y14.41 for guidance).

1. The report **shall** reflect 100 percent inspection verification of all drawing characteristics.

2. The report **shall** delineate each drawing characteristic and specify the corresponding actual measurement results.

**SQ-21 Inspection data for Critical to Function (CTF) Drawings**

A. Model Based Product Defined designs and CTF drawings **shall** require recorded data for all defined critical dimensions per ASME Y14.41.

**SQ-22 Contamination / Foreign Object Debris (FOD) & Tool Control**

**Guidance:** A, B, C, D and E apply when SQ-22 is required.

A. Seller **shall** maintain an FOD prevention program, including tool control.
B. 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.

C. Seller’s Tool Control program shall include identification, inventory and location control to reduce the risk of lost tools.

D. Buyer shall have the right to perform inspections, verifications, tool control, and FOD prevention program audits at Seller’s facility to ensure program documentation and effectiveness.

E. Articles ordered under this Procurement Document shall be protected by Seller from contamination or damage from foreign objects or tool control during processing, testing, inspection, handling, and packaging prior to delivery to Seller.

**SQ-23 Unique Identification (UID) (DFARS 252.211-7003)**

**Guidance:** A and B apply when SQ-23 is required. C and D are required only when they are specified.

A. Defense Federal Acquisition Regulation Supplement (DFARS) clause 252.211-7003, Item Identification and Valuation shall be applied to this Procurement Document.

B. UID shall be in compliance with MIL-STD-130 (latest revision).

C. Certification of individual Matrix verification shall be supplied by the UID processor to attest that electro-optical scanning and legibility of the UID is consistent with recording standards of UID marking and identification systems.

D. Certification of Registration for individual and/or itemized UID nameplates and identification plates shall accompany shipment which affirms accountability and traceability into the U.S. Government web database – website – https://iuid.logisticsinformationservice.dla.mil/.

**SQ-24 Solder Workmanship Standard**

A. Soldering and processing of electronic assemblies shall be in accordance or equivalent with IPC-A-610 “Acceptability of Electronic Assemblies” or J-STD-001 “Requirements for Soldered Electrical and Electronic Assemblies”.

**SQ-25 Solderability**

**Guidance:** A, B, and C apply when SQ-25 is required.

A. Material submitted with each shipment shall have had solderability testing performed in accordance with one or more of the following specifications:

1. MIL-STD-750, Method 2026
3. MIL-STD-202, Method 208
4. MIL-P-55110
5. MIL-P-50884
6. J-STD-001
7. J-STD-002
8. J-STD-003

B. Seller shall supply a copy of the certification by an accredited agency to one or more of the specifications listed in paragraph A with each order.

C. If, during the life of that Procurement Document, the certification is revoked or the certification expires, all efforts against this Procurement Document shall be stopped.

1. Buyer shall be notified in writing within twenty four hours.

SQ-26 Material Outgoing to Seller (Customer Furnished Property)

Guidance: A, B, C, and D apply when SQ-26 is required.

A. Materials furnished to Seller, by NGTS, shall require accountability by Seller.

B. Materials shall be stored and handled in such a manner to ensure the integrity of the material is maintained.

C. Seller shall obtain direction from Buyer concerning the disposition of rejected and/or unused quantities, or usable trimming remaining at the end of the procurement activity.

D. Seller shall be responsible for maintaining records of identity and the assurance of continued suitability of the tooling, test equipment, etc., while such materials are in their possession.

1. Return of the equipment shall be arranged through Buyer.

SQ-27 Cable Workmanship Standard

A. Workmanship shall be in accordance with IPC/WHMA-A-620 "Requirements and Acceptance for Cable and Wire Harness Assemblies."

SQ-28 Printed Wiring Board

Guidance: A and B apply when SQ-28 is required.

A. Printed Wiring Boards fabricated under this Procurement Document shall comply with the requirements of IPC-A-600 Class 3 “Acceptability of Printed Boards”.

B. Coupons shall be included if defined on the drawing with each shipment.
SQ-29  **Test Coupon**  
A. Test coupons **shall** be provided per the specification for each shipment.

SQ-30  **Printed Wiring Board Testing**  

**Guidance:** A and B apply when SQ-30 is required.

A. Seller **shall** perform bare board testing with these values: Test voltage -10-250V, continuity -10 ohm maximum, insulation resistance -10K ohm minimum.

1. Acceptable boards **shall** be acceptance stamped.

2. Rejected boards **shall** be identified with the from/to path of failure and annotated either short or open.

3. Seller **shall** not repair.

B. Automated electro-optical inspection **shall** be required with this order if the boards have 4 or more layers.

1. Layer defects **shall** be reported to Buyer for authorization to repair.

SQ-31  **Electronic Supplier Information Request**  
A. Seller **shall** utilize the Electronic Supplier Information Request (Form 2212) for authorization to ship nonconforming material or to request clarification or change of a drawing / specification requirement. Access to this form **shall** be requested by Seller.

SQ-32  **Variation Management AS9103**  
A. Seller **shall** implement a Variation Management program in accordance with AS9103, Variation Management of Key Characteristics.

SQ-33  **Drop Ship**  

**Guidance:** A and B apply when SQ-33 is required.

A. Seller **shall** deliver parts/material to address identified on the Procurement Document.

B. A copy of all required documentation **shall** be sent to Buyer for receipt and review.

SQ-34  **Documentation**  

**Guidance:** A, B and C apply when SQ-34 is required.

A. An End Item Data Package (EIDP) **shall** be developed, maintained, and provided, which incorporates the following information:

1. Seller Certificate of Conformance (refer to section N of SQ1)
2. Specification/drawing number and revision

3. As-built configuration (Indentured Parts List – may not be required for software)

4. Proof of traceability requirements compliance (serial numbers, lot numbers, batch number, software version, etc.)

5. Documented non-conformances

6. Documented open action items

7. Incorporated Change Orders (Engineering Change Proposals (ECPs))

8. Certificate of Conformances from sub-tier suppliers with objective evidence to validate the certificates

9. Type of inspection performed and recorded results

10. Type of test performed and recorded results

11. Total quantity of items tested, quantity of items accepted, and quantity of items rejected

12. Applicable Government Industry Data Exchange Program (GIDEP) alerts, waivers, deviations, and incident reports

13. Verification of compliance with useful life requirements, e.g., total operating time, thermal cycles, vibration time.

B. Buyer shall refuse to accept item if Seller fails to submit certifications, documentation, test data, or reports specified in the procurement document. Documentation shall include Buyer’s source inspection if such source inspection is performed.

C. Written approval shall be obtained from Buyer for any deviations to the EIDP.
## 4.0 Acronyms

The following acronyms are used in this plan.

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AS</td>
<td>Aerospace Standard</td>
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<tr>
<td>AAM</td>
<td>Authorized Aftermarket Manufacturer</td>
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<td>CMMI</td>
<td>Capability Maturity Model Integration</td>
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<td>CoC</td>
<td>Certificate of Conformance</td>
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<tr>
<td>CTF</td>
<td>Critical to Function</td>
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<td>Defense Federal Acquisition Regulation Supplement</td>
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<td>DoD</td>
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<td>End Item Data Package</td>
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<td>ESD</td>
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<td>FOD</td>
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<td>GIDEP</td>
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<td>GSC</td>
<td>Global Supply Chain</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>Military</td>
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<td>SEM</td>
<td>Scanning Electron Microscope</td>
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## ATTACHMENT A

### Applicable Quality Requirements For F-5/T-38 Program

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<tr>
<th>Commodity Description</th>
<th>Fabricated Parts</th>
<th>Structural Assemblies</th>
<th>Castings and Forgings</th>
<th>Kits</th>
<th>Electronic Assemblies and Sub Assemblies</th>
<th>Functional Assemblies</th>
<th>Mechanical and Electrical Standard Parts/Hardware</th>
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# ATTACHMENT B
## Quality Clauses BY Commodity

<table>
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<tr>
<th>Technical Services, Supplier Quality Requirements, Q Clauses Matrix</th>
<th>* AS REQUIRED BY REQUESTER/REQUIREMENT DOCUMENTS (I.E. PO, SOW, CSOW, CONTRACT, ETC.)</th>
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</table>

|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| **Metallic and Non-Metallic Raw Materials** | X | X | * | * | X | * | * | * | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Casts and Forgings** | X | X | * | * | * | X | * | * | * | X | * | * | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Kits** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Fabricated Parts** | X | X | * | * | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Mechanical and electrical Standard Parts/Hardware** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Structural Assemblies** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Functional Assemblies** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Electronic Assemblies and Sub-Assemblies** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Non-Metallic and Composit Detail Parts** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Paints, Sealants and Chemicals** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Major Components and Assemblies** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Special Processing** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Technical Services** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Tooling** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Repairs** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Software** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Exempt from Q-Clause, except as defined by Program** | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -
| **Commercial Items (COTS), (T-2, T-6), End Item Deliverable** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Research and Development/Advanced Programs** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Custom/Modified Off The Shelf** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **On-Site Service Suppliers** | X | X | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * | *
| **Commercial Items (COTS), (T-2, T-6), Non End Item Deliverable** | X | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | -

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