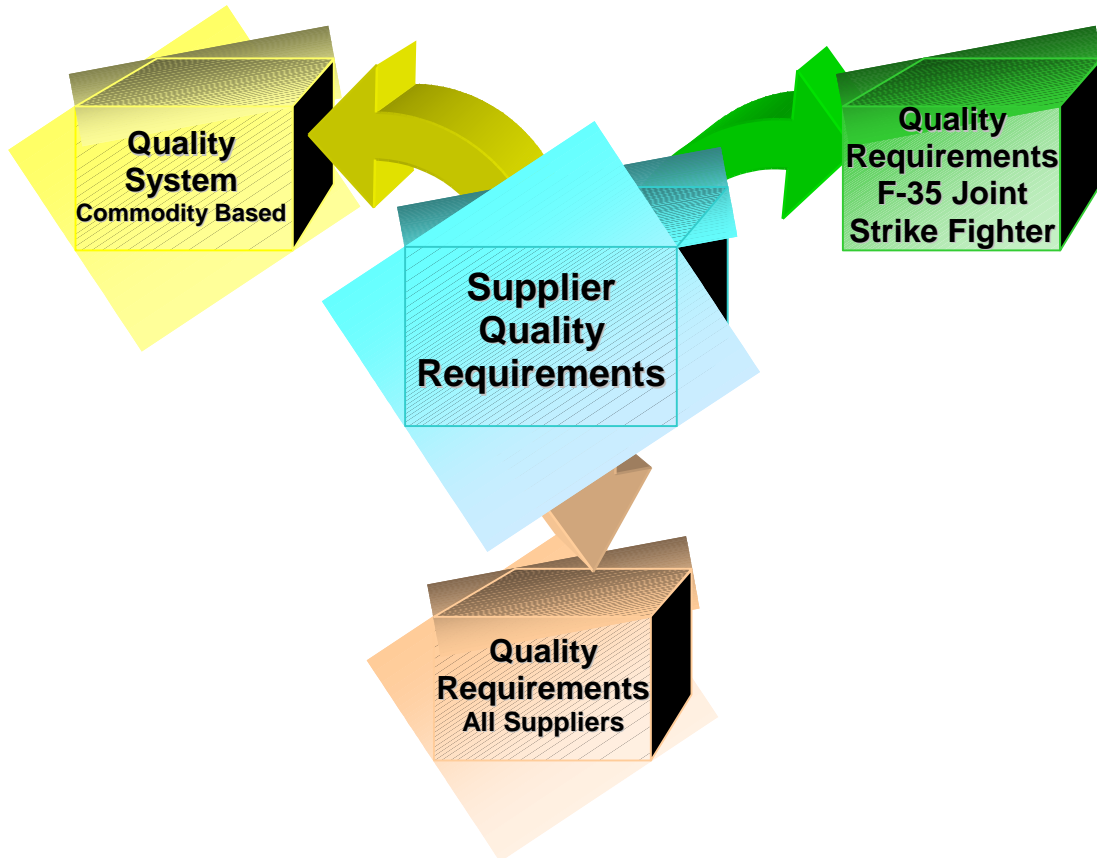


# Appendix QX

## Supplier Quality Requirements

### F-35 Joint Strike Fighter



## REVISION RECORD

The latest issue to this document is the version that is available on the Lockheed Martin Aero website: <http://www.lockheedmartin.com/material-management>.

Revision	Date	Changes
Original Issue	03/28/2002	Completely revised / replaced QR to separate and clarify Program, Commodity, and General application of Quality Requirements based on Program application. This serves as a “pilot” version for other procurements. Adds Revision Record, Table of Contents, and Tables to enable supplier to identify the LM Program and understand which quality system and quality requirements apply based on his product (commodity) type.
Revision A	5/31/2002	Added definition of “Item or Items” in Document Overview paragraph; clarified First Article Inspection (FAI) requirements in paragraphs 2.3.1, 3.3, & 3.4; added the words “as applicable” to paragraph 2.3.6.1.8
Revision 2	8/11/2003	Changed revision scheme to numbers to align with LM AeroCode guidelines. Removed references to all other Programs to dedicate QX to F-35 JSF suppliers only. Added COTS to Table 1B. Added Service Providers to Table 1A. Added Test Items to Table 1A and incorporate self-deleting requirements for Test Items. Refined Deliverable Software requirements in Table 1A. Enhanced FAI requirements in para. 3.3 to include instructions for FAI in 3D Model Environment. Incorporated tooling quality requirements. Added para. 3.5.4 prohibiting use of freeware, shareware, etc. without IPT approval. Aligned NCM control & QCS-001 sections with Appendix QR changes. Added F-35 JSF Critical Part categories to para. 4.13. Added additional calibration references to para. 4.19. Renumbered paragraphs and tables to align with changes. Updated web links to coincide with new websites.

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## **DOCUMENT OVERVIEW**

This Appendix QX sets forth the quality requirements applicable to the Items (the terms "Item," "Items," and "Work" to the extent used herein all shall have the same meaning except that "Item" is singular; "Items" is plural; and "Work" is either depending upon the usage context) to be delivered under the purchase order of which this Appendix QX is a part (this "PO"). The supplier is hereinafter referred to in this Appendix QX as "Seller". Lockheed Martin Aeronautics is hereinafter referred to in this Appendix QX as "Buyer"

The requirements of this Appendix QX further supplement those other quality requirements identified within this PO, if any, [e.g. *Integrated Management Plans (IMPs)*, *Integrated Management Schedules (IMS)*, *Supplier Data Requirements Lists (SDRLs)*, *Statement of Work (SOW)*, *Statement of Objectives (SOO)*, *technical specifications, etc.*], and do not reduce Seller's obligation to comply with all other requirements of this PO. Confirmation of any perceived conflict between this Appendix QX and the balance of this PO should be reported/resolved through the Buyer.

Appendix QX is separated into 4 distinct "Parts":

**Part 1 – Understanding the Buyer's Quality Requirements:** This section is designed to help Seller identify Buyer's Commodity classification / requirement applicable to this PO based on the Item being provided. Use Tables 1A & 1B to determine which specific Appendix QX Commodity paragraphs apply to this PO.

**Part 2 – F-35 Joint Strike Fighter Program Specific Requirements:** This section defines any unique Program quality requirements.

**Part 3 – Commodity Specific Requirements:** This section defines quality requirements based on the type Item being provided. (Tables 1A or 1B in Part 1 define the applicable quality requirements).

**Part 4 – General Quality Requirements and Instructions:** Unless otherwise specified in this Appendix QX, this section applies to all Items provided for and or to be delivered under this PO.

Questions regarding this Appendix QX or the applicability of this Appendix QX should be addressed to Buyer's Material Management representative who administers this PO. A copy of any written correspondence related to the requirements of this Appendix QX shall be provided to Buyer's Procurement Quality Assurance (PQA) Representative servicing the Seller's facility and / or PQA management. Contact information for PQA can be found at <http://www.lockheedmartin.com/material-management>.

## **PART 1 – Understanding the Prime’s Quality Requirements**

- 1.0 This section of Appendix QX is designed to assist Seller in identifying which commodity quality requirements apply to this P.O.**
- 1.1 If the Item is a casting, forging, machined casting/forging, sheet metal, composite part, or requires assembly, choose the commodity classification which best represents that Item from Table 1A. Upon selecting the Commodity/Product, move horizontally across the table to identify all applicable Appendix QX paragraphs of Part 3, which apply to this PO.
- Applicable paragraphs are marked with an “X” in the column of the specific Part 3 paragraph stated at the top of the column.
- 1.2 If the Item is not one of the commodity classifications stated in paragraph 1.1, select the commodity classification from Table 1B which best describes this PO Item(s).

**TABLE 1A – ISO Quality System Commodity Suppliers**

*Applicable QX Paragraphs of Part 3 Identified with “X”*

<b>Commodity / Product</b>	<b>3.1</b>	<b>3.2</b>	<b>3.3</b>	<b>3.4</b>	<b>3.5</b>	<b>3.6</b>	<b>3.7</b>
Castings & Forgings	X		X				X
Sheet Metal Parts	X		X				X
Machined Parts	X		X				X
Structural Assemblies	X		X				X
Electronic Systems / Sub-Systems (1)	X		X		X		
Electrical Harnesses	X		X				
Mechanical Systems /Sub-Systems (1)	X		X		X		
Composite Parts	X		X				X
Major Components/Assemblies	X		X				
Assembly Tooling	X		X				X
Software (1)	X				X		
Service Providers (2)	X						
Engineering Test Units, Engineering Brass Boards, Lab-Use-Units, or Non-Production Configuration Hardware	X			X	X		

**TABLE 1A NOTES:**

(1) Appendix QX does not apply to the software development process for programmable logic elements of microcircuits that perform combinatorial or sequential logic (Boolean) functions, which are developed using hardware development techniques. Items related to the software development process are subject to hardware development process requirements, e.g., Field Programmable Gate Array (FPGA) or Applications Specific Integrated Computer (ASIC). Appendix QX DOES apply to the development process for programmable devices used to store executable instructions or data operands which control the detailed operation of a microprocessor or integrated micro controller (commonly known as “firmware”).

(2) Supply Service Providers - A company whose specialty and core business is integration and management of supply chain operations. Services may include, but are not limited to, kitting, transportation, distribution & warehouse management, inventory management tasks such as tactical inventory forecasting & optimization, supplier management for selected classes of supplies, and global material deployment & distribution.

**TABLE 1B – Unique / Limited Quality System Suppliers**

*Applicable QX Paragraphs of Part 3 Identified with “X”*

<b>Commodity / Product</b>	<b>3.1</b>	<b>3.2</b>	<b>3.3</b>	<b>3.4</b>	<b>3.5</b>	<b>3.6</b>	<b>3.7</b>
Metallic Raw Material		X					
Non-Metallic Raw Material		X					
Standard Electrical/Mechanical Hardware		X					
Paints, Sealants & Chemicals		X					
Raw Material Cut-to-Size		X					
Distributors (1)		X				X	
Perishable Tooling		X					
Commercial Items or Commercial Off the Shelf Items (COTS) (2)		X					

**TABLE 1B NOTES:**

(1) “Distributor” is defined as any seller that is buying Items from other suppliers and selling them to Buyer without adding value to the Item. Repackaging shall not be considered a value-added task for the purpose of this definition.

(2) Commercial Items or Commercial Off The Shelf (COTS) - An item currently listed in a Manufacturer's or Distributor's catalog with an established part number. COTS normally are Component items or items that do not require a Parts List and may be procured as Catalog Items. The supplier defines the product performance, engineering specifications, reliability, industry certification and operational environments. Only the published catalog number and description is used to purchase.

## PART 2 – F-35 Joint Strike Fighter Program Specific Requirements

### 2. F-35 Joint Strike Fighter Program

#### 2.0 This section defines any unique Program quality requirements.

2.1 **Quality Requirements:** Seller shall meet the requirements called out in Tables 1A or 1B, as applicable, and the requirements stated in Part 4 of Appendix QX.

2.2 **Variation Management of Key Characteristics:** Seller shall comply with the requirements of AS9103, *Variation Management of Key Characteristics*. Copies of AS9103 can be obtained from the Society of Automotive Engineers at [www.sae.org](http://www.sae.org).

2.3 **Condition of Supply:** Seller shall comply with the Condition of Supply requirements to be developed by Seller and Buyer Integrated Product Team (IPT), as deemed necessary by the IPT installing/integrating the product (“Receiving IPT”), at no increase in price, estimated cost, or fee to this PO and at no change in delivery schedule.

2.3.1 The Condition of Supply document ensures the receiver and the supplier have a common understanding of the manufacturing process. The Condition of Supply document shall be owned by the Receiving IPT and agreed upon with the Seller responsible for the Item. It shall define and document the special manufacturing, testing, and/or certification instructions to be achieved prior to delivery of aircraft components, (e.g. Forward Fuselage, Wing, Center, Aft fuselage, etc.), Line Replaceable Components (LRC), systems/system build software, harness assemblies, and minor airframe components, (e.g., panels, doors etc.).

2.4 **Material Defect Information:** To provide post delivery support of the Air Vehicle, Seller shall provide to Buyer’s Product Data Manager (PDM) information in electronic format regarding each nonconforming Item, if any. The nonconformance information shall be provided to Buyer concurrent with Item delivery. If Buyer has granted Seller design authority, Seller shall report nonconformances on Items with “Use-As-Is” or “Repair” dispositions that affect a parameter controlled by Buyer’s drawing or specification or which affect form, fit, function, maintainability, Buyer designated KCs, Integrity Life, or reliability. If Buyer has not granted Seller design authority, Seller shall report all “Use-As-Is” or “Repair” dispositions provided by Buyer. Reported nonconformances shall address the following:

- 2.4.1 Nonconforming material document number
- 2.4.2 Part number
- 2.4.3 Serial number (if applicable)
- 2.4.4 Disposition code
- 2.4.5 Text description of defect
- 2.4.6 Text description of repair
- 2.4.7 Location on aircraft (fuselage station – FS, butt line – BL, and water line – WL) (if applicable)

## PART 3 – Commodity Specific Requirements

3.0 This section defines quality requirements based on the type Item being provided.

3.1 **Quality System:** Seller shall maintain a Quality System in accordance with ISO 9001:2000. The Quality System models AS/EN9100 are acceptable for use by Seller provided there is no additional cost, price, or fee in connection with this PO. Copies of AS/EN9100 may be obtained from the Society of Automotive Engineering at: [www.sae.org](http://www.sae.org). Currently and up through December 31<sup>st</sup>, 2003, Seller may utilize an ISO9001: 1994, AS/EN9000, AS/EN9100: 1999, or a military equivalent quality system.

3.2 **Quality System Limited:** Seller shall maintain a quality system that includes the following elements:

3.2.1 **Receiving / Source Inspection System:** Seller shall maintain a documented Receiving Inspection function to ensure material received from its suppliers is inspected to and meets Buyer's PO requirements. Verification of Item conformance to drawings, specifications and requirements of this PO shall be per inspection sampling plans, audits, and certifications of conformance at Seller or manufacturer's facilities, as appropriate. Seller shall properly segregate inspected Items from Items awaiting inspection.

3.2.2 **Work Instructions:** Seller shall utilize written instructions for all manufacturing, processing and inspection operations. Instructions may be in the form of planning, manufacturing operation sheets, work orders, shop orders, travelers or any other identifying document. Such instructions shall identify in sufficient detail, the controls and conditions of manufacturing peculiar to the Item being manufactured, assembled, inspected and tested. Changes to work instructions shall be traceable and approved prior to use.

3.2.3 **Sampling:** Seller may use sampling plans, provided the sampling plans are in accordance with existing military or government standards or have been approved by Buyer in writing.

3.3 **First Article Inspection – AS9102:** Seller shall perform First Article Inspection (FAI) on all Item part numbers, assemblies, sub-assemblies, detail parts, and special assembly tooling features, which support specific product/drawing characteristics that can be verified at the Seller's facility in accordance with AS9102. Within the 3D model verification environment, guidelines for FAI are outlined in QCS-005.

3.3.1 **The following Items are excluded from FAI:**

- Standard catalog hardware, i.e., MS/AN/NAS type hardware,
- Parts procured to a vendor part number,
- Commercial Off the Shelf (COTS) Items, and
- Metallic and non-metallic raw material.



3.3.2 Copies of AS9102 may be obtained from the Society of Automotive Engineers at: [www.sae.org](http://www.sae.org).

3.3.3 Seller shall notify Buyer's Field Representative prior to beginning the FAI so Buyer may make arrangements to witness FAI. This includes incremental FAI tasks as well.

3.3.4 Seller may tailor FAI requirements in accordance with AS9102, if agreed to by Buyer's Integrated Product Team (IPT) and Buyer's Procurement Quality Assurance (PQA), working as part of the Buyer's IPT, based on design, process, or intended use. No deviation to the AS9102 FAI requirement shall be allowed unless it is expressly called out in this PO.

**3.4 Conformance Verification for Engineering Test Units, Engineering Brass Boards, Lab-Use-Units or Non-Production Configuration Hardware:**

3.4.1 Prior to shipping test units, Seller shall perform the following Quality Assurance tasks:

- a. Verify correct detail parts are installed via parts list analysis
- b. Verify correct product marking
- c. Verify envelope dimensions
- d. Document the verification to this level only as a matter of record (not an FAI documentation)
- e. Verify operation performance per the current Acceptance Test Procedure (ATP), as applicable
- f. Verify performance against respective Performance Based Specification (PBS) or Statement of Work (SOW), as applicable
- g. Obtain Buyer acceptance of product as indicated on this PO

3.4.2 The following QX paragraphs are not applicable to Engineering Test Units, Engineering Brass Boards, Lab-Use Units or Non-Production Configuration Hardware:

- 2.2 – Variation Management of Key Characteristics
- 3.3 – First Article Inspection (for the JSF Program)

**3.5 Deliverable Software:** "Deliverable Software" is all software, other than un-modified commercially available software, to be delivered by Seller to Buyer under this PO.

3.5.1 Seller shall implement and maintain a documented software quality program acceptable to Buyer's Software Quality Engineering representative for the engineering design; development, testing and delivery of stand alone or embedded software products associated with this PO.

3.5.2 Seller's Software Quality Program Plan (SQPP) is subject to Buyer's approval or disapproval. Buyer shall have the right to perform periodic evaluations of Seller's compliance to the then approved SQPP.

3.5.3 Seller shall maintain objective evidence of program compliance. Seller's program shall also provide visibility into quality program trends.

3.5.4 Use or inclusion of pre-existent software products, freeware, shareware, public, or open source software, etc., or in source or object form, embedded into a deliverable software product design is prohibited, except when, if ever, specific Buyer authorization has been previously documented and approved.

**3.6** ***Distributor Requirements:*** When Seller is acting as a distributor for any portion of this PO, Seller shall comply with the following requirements of this section 3.6. If Seller adds value to an Item, Seller shall comply with the applicable requirements contained in the commodity-based matrix (Tables 1A or 1B and Part 4 as applicable) for such Item.

3.6.1 Seller shall ensure traceability to qualified product lists ("QPL"), Fort Worth Qualified Material Lists ("FQML"), the Engineering Purchasing Specification ("EPS") or any Buyer directed source, as applicable.

3.6.2 Seller is strictly prohibited from modifying supplies except where approved by the Original Equipment Manufacturer ("OEM") or this PO.

3.6.3 Seller shall establish membership in the Government Industry Data Exchange Program ("GIDEP") and notify Buyer upon receipt of any GIDEP information that affects Items shipped to Buyer. Information on GIDEP can be found at:  
<http://www.gidep.org/>

3.6.4 Seller shall include Appendix QX in its contracts or purchase orders to subcontractors and require compliance with it.

3.6.5 Seller may procure Items from other distributors as long as all OEM certifications and test reports traceable to the lot or batch number accompanies the Items to the point where Buyer accepts the material.

3.6.6 Sellers having more than one facility may transfer Items between those facilities as long as all OEM certifications and test reports traceable to the lot or batch number accompanies the Items to the point where the Items are presented to Buyer for acceptance.

3.6.7 Seller shall ensure the OEM's name and lot or batch number as applicable, are referenced on Seller's packing sheet that accompanies each shipment.

3.7 **Buyer-Furnished, Seller-Manufactured or Seller-Owned Tooling:** In addition to the requirements set forth in this document, Seller shall comply with the following:

3.7.1 **Buyer Furnished Tooling** – Seller shall comply with the requirements of Tooling Manual (TMS-MC-015) concerning Buyer-furnished controlled tooling, and production tools.

3.7.2 **Seller-Manufactured Tooling** – Seller shall comply with the requirements of Tooling Manual (TMS-MC-015) concerning Seller-manufactured tooling that is identified in this PO as having non-recurring cost.

3.7.3 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.

## PART 4 – General Quality Requirements and Instructions

4.0 Unless otherwise specified in this Appendix QX, this section applies to all Items provided for this PO.

4.1 **Reference Documents:** Buyer unique documents referenced in this PO may be obtained from Buyer’s Material Management representative or Buyer’s website at <http://www.lockheedmartin.com/material-management>.

4.2 **Point of Acceptance:** The point of acceptance is indicated in this PO. Items designated “Buyer Inspect at Source” or “Source Accept” will be subject to inspection and acceptance by Buyer’s Field Procurement Quality Assurance Representative (PQAR) at Seller’s facility prior to shipment. Items designated “Buyer and Government at Source” will be subject to being accepted by Buyer’s PQAR and the local Government Representative at Seller’s facility prior to shipment. Buyer shall have the right to inspect and accept or reject Items designated “Destination” or “Material Identification & Damage Check” (MIDC) upon receipt. The Point of Contact for Buyer PQARs can be found at: <http://www.lockheedmartin.com/material-management>. Highlight “Quality Requirements” and then select “Information.”

4.2.1 When this PO calls for Buyer Surveillance or Buyer @ Source or Buyer Accept, Seller, within a minimum of five (5) days of receipt of the PO, shall notify Buyer’s PQAR who normally services Seller's facility. The notification shall include the PO number, date of scheduled shipment and any special security clearance that might be required to perform Buyer activities. If Seller does not know Buyer PQAR assigned to this facility, follow the guidelines outlined in 4.2.

4.2.2 If Seller has received Buyer delegation, Seller must ship product under the guidelines of the specific delegation. When any of the following conditions exist, Seller shall obtain evidence of Buyer's Field Representative's final acceptance on the applicable form, prior to shipment:

- The Item(s) require First Article Inspection (FAI)
- The Item(s) require Government Inspection at Source
- The Item(s) were rejected by Buyer and returned to Seller for rework/repair and/or replacement

**4.3 Minimum Requirements:** Seller shall comply with the requirements found in this Appendix QX, Part 4, unless exceptions are stated in *PART 2 – F-35 Joint Strike Fighter Program Specific Requirements*.

**4.4 Facility Access:** Seller shall provide or obtain for Buyer, Buyer's Customers and regulatory agency personnel, access to any and all facilities, including those facilities of Seller's subcontractors, where work is being performed or is scheduled to be performed. Buyer shall have the right to perform in-process inspection, audits or system surveillance at Seller's and Seller's subcontractors' facilities as part of verification of conformance the requirements of this PO. Seller shall include the provisions of this facility access requirement in its purchase orders with its subcontractors.

**4.5 Records:** Seller shall maintain complete records of all manufacturing, inspection and test. Seller shall make records available to Buyer, upon request, for at least three (3) years after completion of this PO and for longer periods as may be specified elsewhere in this Appendix QX or otherwise in this PO. Upon request, Seller shall forward specific records to Buyer at no additional cost, price, or fee to Buyer.

**4.6 Nonconforming Material Control:** Seller shall maintain a documented procedure for the identification, documentation, segregation and disposition of nonconforming material. Seller shall ensure effective, positive corrective action is taken to prevent minimize, or eliminate nonconformances. When directed by Buyer, Seller shall document delivered Items on Buyer's or Seller's Variance form.

4.6.1 Seller has Material Review (MR) authority for Items that are of Seller's design, except for nonconformances that affect a parameter controlled by Buyer's drawing or specification or where form, fit, function, maintainability, Key Characteristic (KC), Integrity Life, or reliability is affected. Seller shall not have Material Review authority for Buyer designed Items unless specifically authorized in writing by Buyer.

4.6.2 Nonconformances outside the Seller's MR authority shall be processed in accordance with this PO and the Buyer website. To request Buyer MR disposition for production Items, Seller shall follow the instructions located at Buyer's website <http://www.lockheedmartin.com/material-management>. Highlight "Quality Requirements" and then select "Corrective Action". If Seller's MR request is for a "Repair" Item returned on a Repair PO, instructions are located at Buyer's website <http://www.lockheedmartin.com/material-management>. Highlight "Terms and Conditions" then select "Forms."

4.6.3 Seller shall document nonconformances and the dispositions. This documentation shall be considered part of Seller's records. Seller shall not incorporate any nonconforming Item into a next assembly until nonconformance has been properly dispositioned.

4.6.4 Prior to delivering Items that have Buyer MR dispositions, Seller shall ensure that root cause analysis and a corrective action plan for that discrepancy has been initiated and/or completed.

**4.7 Selection, Control and Contract Flow Down to Quality Control Specification (QCS)-001 Sources**

4.7.1 QCS-001 is used to identify both the process sources and the processes that require Buyer approval, prior to use for Items delivered to Buyer. A controlled process is an operation performed on an Item where the operation is not readily inspectable subsequent to its conclusion. Controlled processes have verifiable controls inherent to the process i.e. heat treat, plating, nondestructive testing, etc.

4.7.2 The controlled processes listed in QCS-001 are not applicable to standard hardware (nuts, bolts, washers, etc.) ordered to military, federal or industry specifications or standards (e.g., MS, AN, NAS, etc.) or to metallic raw material (plate, sheet, bar, extrusion, etc.) purchased from a mill.

4.7.3 Buyer accepts Seller's use of all Nadcap approved sources for Industry Standards controlled by QCS-001. Seller shall ensure that a source is currently approved by Nadcap, prior to a source performing work on Buyer's items. Seller can access Nadcap approved sources @ <http://www.pri.sae.org> or <http://www.eauditnet.pri.sae.org>. Upon request by Buyer, Seller shall provide Buyer with objective evidence that Seller selected and used a currently approved Nadcap source. Buyer does not mandate Nadcap and shall not be responsible for any cost associated with Nadcap accreditation or the use of a Nadcap approved source or process. Buyer shall have the right to validate, using normal survey, audit practices, any Nadcap approved source or process.

4.7.4 The lists of both Buyer-controlled processes and Buyer-approved sources can be found on Buyer's Internet Home Page at:

<http://www.lockheedmartin.com/material-management/>

- Highlight "Quality Requirements"
- Select "Supplier Quality Management System"
- Select "Supplier Quality Management" to view:
  - Specification Index
  - Inquire by Processor (Vendor) Name, Process code or name of process

4.7.5 Seller shall use Buyer-approved sources for Buyer-controlled processes.

4.7.6 Seller shall review the list of Buyer-approved sources for Buyer-controlled processes, prior to using a process source for a controlled process listed in QCS-001, and select process sources that are approved by Buyer.

4.7.7 If Seller performs or directs Seller's sub-tier to perform work controlled by QCS-001 without Buyer's approval, Buyer may disapprove Seller's quality system.

4.7.8. Seller's utilization of Buyer-approved sources does not relieve Seller from the obligations to ensure subcontracted sources are in full compliance with applicable process specifications and to deliver conforming Items. Upon request by Buyer, Seller shall provide objective evidence that such compliance was attained and that such conforming Items were delivered.

4.7.9 Seller shall be responsible for ensuring that Seller or QCS-001 sources have the appropriate revision level of the process standards/specifications prior to performing work in connection with the Items.

4.7.10 Seller shall maintain objective evidence that each Buyer-approved process source selected by Seller is being monitored to ensure compliance with all applicable process specifications. Upon request by Buyer, Seller shall provide Buyer with objective evidence of such compliance.

4.7.11 Seller shall ensure process controls are established and required process control tests are accomplished at required intervals to ensure continued compliance to process specifications.

4.7.12 Seller shall ensure all Seller purchase orders to Buyer-approved process sources include the following statements:

- a) A statement with the words, "Work to be accomplished in performance of this purchase order is directly related to a Lockheed Martin Aeronautics Company purchase order and must be accomplished in accordance with the process specification on this purchase order and Lockheed Martin Aeronautics Company Appendix QJ."

- b) A statement requiring the source to file and maintain a copy of all purchase orders containing the above statement and make these available for review by Buyer, upon request.
  - c) A statement requiring the source to submit a Certificate of Conformance "C-of-C") with a unique certification number containing the following information:
    - 1. title and specification number (including revision letter) of the process;
    - 2. name and address of the process or NDT facility;
    - 3. Lockheed Martin assigned processor number;
    - 4. date the C of C was issued;
    - 5. part number listed on Seller's purchase order to the source;
    - 6. quantity of parts (to include quantity accepted/ rejected);
    - 7. signature and title of authorized quality agent of seller; and
    - 8. fracture durability classification or serialization when required.
  - d) A statement requiring the source to ensure parts are suitably wrapped, boxed or racked to guard against shipping damage and to apply rust or corrosion protection.
  - e) A statement requiring the source to identify specification(s) title and specific revision level(s) and drawing(s) requirement(s) to be performed by a QCS-001 source.
- 4.7.13 Seller shall review testing lab C of C to ensure all required testing has been accomplished and meets all requirements of the testing specification.
- 4.7.14 Seller shall submit all requests for additional QCS-001 process approvals in writing to Buyer.
- 4.7.15 Seller shall maintain activity data on each QCS-001 process performed or any source utilized, if any, compile a quarterly report, and submit it to Buyer within 15 days of the end of each calendar quarter. The report shall contain the following information:
- A. source name;
  - B. process specification used by specification number; and
  - C. frequency of use

Seller shall send the report electronically to [LMAeroPQA.pf@imc7.ems.lmco.com](mailto:LMAeroPQA.pf@imc7.ems.lmco.com) or mail the report to the following address:

Lockheed Martin Aeronautics Company  
Attention: Process Audit Group  
P O Box 748  
Mail Zone 5809 (PQA)  
Fort Worth, TX 76101

**4.8. Seller's Performance of QCS-001 Processes**

4.8.1. When performing QCS-001 Controlled Processes in Seller's facility, Seller shall accomplish QCS-001 processes in accordance with the applicable process specification(s) and Lockheed Martin Aeronautics Company Quality Appendix QJ. Quality Appendix QJ can be found at:

<http://www.lockheedmartin.com/material-management/>

- Highlight "Quality Requirements"
- Select "Appendices"

**4.9 QCS-001 Requirements for Seller-Designed Items**

4.9.1 Seller has the responsibility and authority to approve and control its own processing sources, including in-house processes.

4.9.2 Seller shall ensure that the assignment of personnel is commensurate with their respective levels of experience, training and proficiency.

4.9.3 Buyer shall have the right to review and maintain surveillance of Seller's system for approval and control of Buyer-approved processes, including those performed in-house. If Buyer determines Seller's system has failed to control processing or testing, Buyer shall have the right to withdraw Seller's authority to approve and control Buyer-approved processes listed in QCS-001. In the event of withdrawal of such authority, Buyer shall have the right to direct Seller, at no increase in cost, price, or fee to Buyer, to use Buyer-approved sources listed in QCS-001.

**4.10 Certificate of Conformance:** Seller shall prepare a Certificate of Conformance (COC) stating that Items provided under this PO meet all applicable requirements. The COC shall be included with Seller's product shipper.

**4.11 Corrective Action:** Seller shall respond to all Buyer requests for corrective action by the requested due date. Seller shall maintain a documented system for determining root cause and obtaining corrective action both internally and from its suppliers, and be accountable for effectiveness of corrective and preventive actions taken

4.11.1 **Seller Nonconformance Review:** Seller shall immediately assess all Buyer reported / identified nonconformances and take the appropriate actions to ensure causes of nonconformances are corrected. Seller shall provide results of assessment to Buyer in writing within 30 days using the Supplier Confirmation and Action Report (SCAR) form. The SCAR form and instructions are located at Buyer's website <http://www.lockheedmartin.com/material-management/>. Highlight "Quality Requirements," select "Forms," and then select "Supplier Confirmation/Action Report (SCAR)" to view and print the form.



- 4.12 Supplier Control:** Seller is responsible for ensuring all Items procured for this PO, from its suppliers, conform to all requirements of this PO. Seller shall ensure all applicable provisions of this Appendix QX are flowed down to its suppliers.
- 4.13 Outsourcing:** Seller shall notify Buyer, in writing, when any KC, Interchangeable-Replaceable features, Fracture Critical features, Durability Critical features, Maintenance Critical features, Safety Critical features, Mission Abort Critical features, or changes affecting form, fit or function are to be subcontracted.
- 4.14 Sales Office:** If Seller utilizes a sales office to administer this PO, Seller shall ensure the applicable provisions of this Appendix QX are provided to all its relevant facilities. Seller shall ensure that Seller's manufacturing facilities are approved by Buyer, as applicable. If Seller is unsure if manufacturing facilities require Buyer approval, contact Buyer Material Management representative.
- 4.15 Inspection Stamps:** Seller shall maintain a system for control and issuance of inspection stamps.
- 4.16 Non-Deliverable Software:** When non-deliverable software is used in the manufacturing, qualification or inspection of deliverable software or hardware, Seller shall maintain a system, which provides for the evaluation and control of each non-deliverable software Item. Such system shall ensure that:
- 4.16.1 Required functions of the non-deliverable software are defined and objective evidence exists that such software performs the required functions.
- 4.16.2 Non-deliverable software is placed under configuration control prior to and during its use. The configuration control system shall ensure only the latest or approved version is being used.
- 4.17 Quality System Changes:** Seller shall notify Buyer, in writing, of any adverse change in its quality system status resulting in the loss of 3<sup>rd</sup> Party registrar's certification status, or an action taken by the Seller's customer, government, FAA or CAA. The Seller shall also notify Buyer upon any sale, relocation or transfer of Seller's manufacturing operations or upon any change in the quality organization, process or procedures that could affect conformity verification of supplies, products, or services. Notification by Seller shall be made within 30 days of such changes.
- 4.18 Language:** Unless otherwise authorized by Buyer in writing, all records, reports, specifications, drawings and other documentation shall be in English.
- 4.19 Calibration:** Seller shall maintain and deploy a documented calibration system for the calibration and maintenance of tools, jigs, inspection and test equipment. Seller shall use widely recognized Government or Industry calibration standards as guidelines, i.e., ISO 17025, ISO10012-1, ANSI Z540, etc.

- 4.20 FOD Prevention:** Seller shall maintain a Foreign Object Debris/Damage (“FOD”) prevention program, for the engineering design process and controls in manufacturing, to prevent introduction of foreign objects into any deliverable Item. Seller shall employ appropriate housekeeping practices to ensure timely removal of residue/debris, if any, generated during manufacturing operations or tasks. Seller shall determine if sensitive areas that may have a high probability for introduction of foreign objects should have special emphasis controls in place appropriate for the manufacturing environment.
- 4.21 Manufacturing Plan:** Prior to the start of manufacturing Items identified by Buyer as Interchangeable / Replaceable (“IR”), Fatigue/Fracture Critical (“F/FC”) or Fatigue/Durability Critical (“F/DC”), Seller shall submit a manufacturing flow diagram, including inspection points, to Buyer for Buyer’s review and approval.