

Appendix QX

Supplier Quality Requirements

TABLE OF CONTENTS

TITLE	PAGE
<u>DEFINITIONS AND APPLICABILITY</u>	2
<u>GENERAL REQUIREMENTS AND CONFORMANCES</u>	
<u>1.0 Quality Management System (QMS) Requirements</u>	2
<u>1.1 Quality Requirements</u>	3
<u>1.2 Notification of QMS Changes, Customer Findings, Sale, Relocation or Transfer</u>	3
<u>1.3 Language</u>	4
<u>1.4 Counterfeit Parts / Materials Prevention</u>	4
<u>1.5 Certificate of Conformance</u>	6
<u>1.6 Quality Records</u>	6
<u>1.7 Government-Industry Data Exchange Program (GIDEP) Membership</u>	7
<u>1.8 Buyer-Certified Materials</u>	7
<u>1.9 Calibration</u>	7
<u>1.10 Tooling</u>	7
<u>1.11 Foreign Object Damage (FOD) Prevention</u>	7
<u>1.12 Point of Acceptance</u>	8
<u>1.13 Facility Access</u>	9
<u>1.14 Corrective Action, Preventive Action, Request and Reporting</u>	9
<u>1.15 Control of Nonconforming Product / Material Review Process</u>	10
<u>TAILORED REQUIREMENTS</u>	
<u>2.0 Zero Defect Plan</u>	11
<u>2.1 Special Process Requirements for Buyer-Designed Items</u>	12
<u>2.2 Special Process Requirements for Seller-Designed Items</u>	14
<u>2.3 Competence Operator Self-Verification</u>	14
<u>2.4 Advance Product Quality Process/Part Approval</u>	14
<u>Table 1 – Additional Quality Clause Requirements</u>	15
<u>Table 2 – Program / Customer Requirements</u>	16
<u>REFERENCES</u>	16

DEFINITIONS AND APPLICABILITY

The latest issue of this document is the version available on the [Lockheed Martin Aeronautics website](#).

- A. Within Quality Appendix QX, “**Seller**” is defined as the Purchase Order (PO) recipient.
- B. The terms “**Item(s)**,” “**Work**” and “**Buyer’s Product**” are synonymous.
- C. The terms “**PO**” and “**Buyer**” as used herein, have the same meaning as the terms “**Contract**” and “**LOCKHEED MARTIN**,” respectively.
- For Commercial-Off-the-Shelf (COTS) hardware, this document’s requirements apply.
- Requirements of this document not applicable to the PO shall be considered self-deleting.
- Questions regarding this Appendix QX or the applicability of this Appendix QX shall be addressed to [Buyer’s Supplier Quality Engineer \(SQE\)](#).
- Appendix QX and all Quality Clauses referenced herein are a constituent part of the PO and shall not be considered subordinate documents.
- When a conflict arises between Appendix QX and one of the Quality Clauses referenced in Appendix QX, the Quality Clause takes precedence.
- Buyer-unique documents (e.g., Q2A, Q30, TMS-MC-015, etc.) referenced in this PO are available from Buyer or [Buyer’s website](#).

GENERAL REQUIREMENTS AND CONFORMANCE

1.0 Quality Management System (QMS) Requirements

- A. For all products/services, the Seller shall have a third-party certified AS/EN9100 Quality Management System (QMS), except as defined below:
 - 1. Distributors: AS/EN9120 Third Party Certification is required for Sellers performing as Distributors. Sellers acting as distributors with AS9100 certification must have a Scope of Approval that includes Distribution if AS9120 certification is not held.
 - 2. Sellers performing Maintenance, Repair or Overhaul (MRO) of Government/Foreign Military Sales (FMS) assets shall comply with one of the following:
 - a. AS9110 Third Party certification (or international equivalent). Seller shall comply with AS9110.
 - b. ISO 9001 Third Party certification (or international equivalent) with repair in the scope of approval and FAR Part 145 certification (or international equivalent). Seller shall comply with AS9110.
 - c. For OEM’s, AS9100 Third Party certification (or international equivalent) with the limitations of AS9110 Intended Application. Seller shall comply with AS9100.
 - d. For MRO activity on commercial product/components (e.g., FAA- or CAA-controlled), Seller shall comply with FAR Part 145 and 14 CFR 43, or

international equivalent, as applicable. Seller shall maintain a Type Rating on the FAA Part 145 certificate applicable to the airframe of record in this PO.

3. ISO 9001 Third Party Certification, as a minimum, is required for Sellers providing:
 - a. ground support equipment,
 - b. manufacturing support equipment
 - c. commercial-off-the-shelf (COTS) hardware, or
 - d. production parts (excluding F-35)
- B. Sellers certified to AS9100, AS9110 or AS9120 who are not providing COTS hardware, shall have a current third-party certification from an accredited registrar listed the "Online Aerospace Supplier Information System" (OASIS). Seller shall permit Buyer access to Seller's Tier 2 data in OASIS in accordance with AS9104, and to Seller's Nadcap data, including registration documentation, certification, audit reports, findings, corrective actions, etc.
- C. Sellers certified to ISO 9001 shall have a current third-party certification from an International Accreditation Forum (IAF) accredited registrar. Seller shall permit Buyer access to Seller's Nadcap databases, including registration documentation, certification, audit reports, findings, corrective actions, etc.

1.1 **Quality Requirements**

Seller shall meet the applicable requirements of the latest revision of Appendix QX in effect as of the date of the Request for Proposal (RFP) unless otherwise amended by Buyer and Seller prior to PO issuance. Seller shall:

- A. Ensure all applicable QX requirements herein and other quality requirements in this PO are imposed upon Sellers' external providers at all tiers working on Buyer's product. Seller is expected to utilize its approved QMS, processes and documentation to meet the applicable requirements of QX. Seller shall flow down its own unique quality requirement document(s) to their external providers.
- B. Comply with the applicable Quality Clauses corresponding to the Commodities/Services being provided and Buyer's Programs as shown in QX Tables [1](#) and [2](#).
- C. Ensure that Seller personnel are aware of:
 1. their contribution to product or service conformity;
 2. their contribution to product safety;
 3. the importance of ethical behavior.

1.2 **Notification of QMS Changes, Customer Findings, Sale, Relocation or Transfer**

Seller shall utilize Buyer's Notification Form available at [Supplier Risk Event Notification | Lockheed Martin](#) to inform the Buyer of events described below.

- A. For the following events, Seller shall submit Buyer's Notification Form within ten (10) business days of occurrence:

1. Change in Seller's Quality Management System, such as loss of third-party system certification, changes to Quality organization, processes or procedures that could affect conformity of Buyer Item, adverse action by US or International Government entity/agency, or Nadcap.
2. Issuance of any Level II or Level III government-issued Corrective Action Request associated with Quality Management System, processes or conformity of Buyer Item.
3. Issuance of a major finding by a third-party registrar.
4. Suspension of Government Source Inspection of Buyer's Items due to adverse cause.

NOTE: Seller shall provide within 30 calendar days of the written notification the approved corrective actions taken in response to any adverse actions reported in paragraph 1.2.A above.

B. Seller shall submit Buyer's Notification Form 180 calendar days in advance of the following:

1. Sale, relocation or closure of Seller's facility (subject to any legal or regulatory restrictions). **Relocation* includes reassignment of all or select products to new location (location other than stipulated on PO).
 - a. Seller shall provide risk mitigation plan that includes: Actual/Potential impact to PO schedule/performance; record retention/transfer plan; FAI (PPV/MPV) recovery plan; Inventory line of balance (LOB); Work In Progress (WIP); and Master schedule detailing timeline of critical changes, in accordance with guidance from the Buyer's Notification Form.

NOTE: To determine and prioritize risks within the Seller's Supply Chain, Buyer recommends Seller develop and implement a Risk Management process in accordance with ARP/AS9134. Additional information regarding risks is provided in the [IAQG Supply Chain Management Handbook](#).

1.3 Language

- Seller documents and records submitted to Buyer shall be in English.

1.4 Counterfeit Parts / Materials Prevention

Definitions:

- **"Original manufacturer"** (OM) means the original component manufacturer, the original equipment manufacturer or the contract manufacturer.
- **"Authorized supplier"** includes OM-authorized suppliers, distributors, or aftermarket manufacturers (including Mills and foundries) to produce, buy, stock, repackage, sell or distribute the part.
- For purposes of this clause, **"Work"** consists of those parts/materials delivered under this Contract that are the lowest level of separately identifiable items (e.g., articles, components, Commercial Off-the-Shelf items, standard hardware, goods, raw materials and assemblies).
- **"Counterfeit Work"** means Work that is or contains unlawful or unauthorized reproductions, substitutions, or alterations that have been knowingly mismarked, misidentified, or otherwise misrepresented as Work from an OM or OM-authorized supplier. Unlawful or unauthorized

substitution includes used Work represented as new, or the false identification of grade, serial number, lot number, date code or performance characteristics.

- **“Suspect Counterfeit Work”** means Work for which credible evidence (including, but not limited to, visual inspection or testing) provides reasonable doubt that the Work part/material is authentic.
- **“Commercial Off-the-Shelf”** (COTS) describes Products/items sold to commercial users for non-governmental purposes.

NOTE: Extending the functionality of COTS hardware products via customer development should be carefully considered due to the increased complications of: proper integration, long term support and maintenance implications, inconsistent and short-term availability, obsolescence of components, and essential additional integration and testing requirements.

- A. Seller shall establish and maintain a Counterfeit Prevention and Control Plan (CPCP) in accordance with AS5553, ARP6328, AS6496, DFARS 252.246-7007, IDEA-STD-1010, DFARS 252.246-7008, AS6174, AS6081 and/or AS6171, as applicable.
- B. For parts/materials to be delivered to Buyer as Work, the Seller shall only purchase from Authorized Sources of Supply.

NOTE: Authorized Sources of Supply include: The Original Manufacturer (OM) of the parts/materials, including mills and foundries, and Authorized Aftermarket Manufacturer (AAM) of the parts/materials, their Authorized Suppliers (AS), or suppliers that obtain such parts/materials exclusively from the OM/AAM/AS.

- 1. If Seller is unable to acquire parts/materials from the OM/AAM/AS, Seller may incorporate parts/materials from a Seller-approved source into Buyer's Product only if Seller has received advanced written approval from the Buyer.
 - a. Notification and permission shall be via a Seller-initiated NTOEM SPAR that will retain records of compliance to customer requirements.
 - b. Seller shall refer to [Lockheed Martin Aero Supplier Quality Management System](#) and follow instructions in the SQM User Guide to submit a NTOEM SPAR.
- C. Sellers shall, upon request from the SQE and Buyer, provide traceability from the OM/AAM/AS, to the Seller's Work.
 - 1. Seller's processes shall include the means to provide to the SQE and Buyer, upon request, the supply chain traceability from OM/AAM, including mills and foundries, to produce acceptance by Buyer, including the name and location of all supply chain intermediaries.
 - 2. If traceability is not obtainable, Seller shall provide notice via NTOEM SPAR prior to use.
- D. Seller shall notify the SQE and Buyer of noncompliance to these requirements in accordance with Appendix QX para 1.14.
 - 1. Work containing suspect counterfeit parts/materials shall be treated as nonconforming Work and the Seller shall utilize the notification process within Appendix QX para 1.14 to remedy the nonconformances.

- E. Sellers eligible for membership in Government-Industry Data Exchange Program (“GIDEP”) per Appendix QX para 1.7 shall utilize the GIDEP process to alert the Buyer and industry of counterfeit parts/materials.
- F. Seller shall include this clause, or equivalent provisions, in parts/materials/service subcontracts for items included in or furnished as Work to Buyer.

1.5 Certificate of Conformance

Seller shall:

- A. Prepare a Certificate of Conformance (CoC) asserting that the Items contained within this shipment meet all requirements of this PO.
- B. The CoC prepared for each shipment shall include at minimum the following data elements / information, or equivalent forms (e.g., FAA Form 8130, EASA Form 1):
 - Seller Facility name
 - Seller Facility address
 - Date issued
 - PO/Contract number
 - Part number
 - Traceability Data if applicable (e.g., serial number, date code/production lot number)
 - Quantity of parts
 - Variance Number and details of variance, if applicable, and applicable SQAR number(s)
 - Special Handling (e.g., Hazmat, temperature sensitive, shelf life limited, etc.), if applicable
 - Signature and title of authorized Seller Representative (Electronic Signatures are acceptable)
 - Seller Representative printed name adjacent to the signature
- C. If Seller’s Item manufacture, acceptance or shipment occurs at location other than the contracted PO address, include that Supplier name and location in addition to Seller’s information on the shipping document and CoC.
- D. Include a copy of the CoC inside the box even if a copy is included with shipping details on the outside of the box.

1.6 Quality Records

Seller Shall:

- A. Maintain complete records of the following:
 - 1. all manufacturing, inspection, test, process capability (if applicable), CoC, shipping and tooling controlled per TMS-MC-015; and

- 2. all nonconforming material, dispositions, corrective and preventive actions, assignable causes and effectiveness of corrective actions.
- B. Make such records available for at least three (3) years after final payment of this PO or for longer periods if specified elsewhere in this PO.
- C. Maintain records of all Special Process "Work" performed or procured in accordance with Appendix QX para 2.1 and 2.2 for at least seven (7) years after final payment of this PO or for longer periods if specified elsewhere in this PO.
- D. Provide an electronic copy of quality records upon Buyer's request.

1.7 Government-Industry Data Exchange Program (GIDEP) Membership

- If Seller is eligible for GIDEP membership, Seller is required to be a member of GIDEP.
- The Seller shall implement a process for reviewing and evaluating problems identified in GIDEP alerts.

1.8 Buyer-Specified Materials

- Seller shall establish and maintain controls to prevent the use of materials from unapproved sources when Buyer-Approved sources (e.g., Engineering Materials and Approved Products [EMAPs]) are required. See A83 on PO as required.

1.9 Calibration

- Seller shall maintain a system for calibration and maintenance of tools, jigs, inspection and test equipment that is compliant with an industry-recognized standard (e.g., ISO 17025, ISO 10012-1, ANSI Z540).

1.10 Tooling

- A. Seller shall include in its documented quality system written procedures for the control, maintenance, and calibration of special tooling, jigs, inspection and test equipment and other devices used in manufacturing processes.
- B. Seller shall comply with the applicable requirements of Buyer's tooling manual [TMS-MC-015](#) for tooling used in the manufacturing or verification of Buyer's product.

1.11 Foreign Object Damage (FOD) Prevention

- A. Seller shall maintain a FOD Prevention Program compliant to Aerospace Standard AS9146, Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space and Defense Organizations.
- B. Whenever or wherever Foreign Object Debris (FOD) can be entrapped or Foreign Objects (FO) can migrate, Seller shall ensure that applicable FOD prevention requirements are flowed down to Seller's subcontractors at every tier.
- C. Prior to closing inaccessible or obscured areas and compartments during assembly, Seller shall inspect for FO/materials and ensure no protective devices (e.g., bags, caps, covers, plugs) remain embedded. Seller shall ensure tooling, jigs, fixtures and test or handling equipment are maintained in a state of cleanliness and repair sufficient to prevent FOD and FOD.

- D. By delivering Items to Buyer, Seller shall be deemed to have certified to Buyer that such Items and packaging are free from any FO/FOD.

1.12 Point of Acceptance

- The point of acceptance is indicated for each PO line item.
 - When the PO designates “**BUYER ACCEPT AT SOURCE**,” Buyer acceptance can involve periodic surveillance by Buyer of Seller’s quality system, manufacturing processes or physical Item, including work at Seller’s sub-tiers. Based on Seller’s performance, Buyer acceptance activities may result in the requirement for full-time oversight of Seller’s or Seller’s agents and subcontractors. Buyer acceptance, prior to shipment, shall be performed at the Seller’s facility address referenced on Buyer’s PO, unless Seller has complied with Appendix QX para 1.2.B.
- A. Prior to shipment of Items designated “**BUYER ACCEPT AT SOURCE**,” Seller shall:
1. Request and obtain authorization from Buyer’s SQE for shipment, or
 2. Sign or stamp and date Seller’s shipping document to indicate acceptance of Item(s) by Seller’s **Delegated Quality Representative (DQR)**, when Buyer has delegated end item acceptance/**Product Release** in writing to Seller.
 - a. Seller must receive approval to participate in Buyer’s Delegated Quality Representative/Delegated Product Release Verification (DQR/DPRV) programs using Buyer’s designated portal. Upon receiving Buyer’s approval, Seller shall comply with AS9117. Seller’s DQR personnel must complete the Buyer-required training within the specified timeframe to receive authorization to release product on behalf of Buyer. Buyer recommends Seller develop and implement a training plan in accordance with AS13001.
 - b. Sellers delegating product acceptance to their sub-tiers shall comply with AS9117. Buyer recommends Seller develop and implement a training plan in accordance with AS13001; or
- B. Obtain final acceptance from Buyer’s SQE by packing slip with SQE signature or acceptance code, which is entered in the Lockheed Martin internal systems. Prior to shipment of Items designated “**BUYER AND GOVT ACCEPT AT SOURCE**,” Seller shall comply with Appendix QX para 1.12.A and obtain final acceptance from the assigned Government representative. Supplier must provide SQE with an electronic copy of the shipping document bearing a DCMA signature, whether ink or electronic, validating that GSI has been completed.
- C. When Buyer has not provided Seller with prior written authorization to act on Buyer’s behalf and PO calls for “**BUYER ACCEPT AT SOURCE**” or “**GOVT & BUYER ACCEPT AT SOURCE**,” Seller shall notify Buyer’s SQE assigned to Seller’s facility no more than five (5) business days after Seller acceptance of this PO. Seller’s notification shall include PO number, date of scheduled shipment and any special security clearance required to perform Buyer activities.

- D. When Buyer has not provided Seller with prior written authorization or electronic notification to act on Buyer's behalf, Seller shall notify Buyer's SQE when Items are ready and allow a minimum of two (2) business days for SQE to perform acceptance.

1.13 Facility Access

- A. Regardless of Buyer's or Buyer's Customer Point of Acceptance in this PO or whether Buyer's customer has issued a delegation for this PO, Seller shall provide or obtain access to any and all facilities where work is being performed or is scheduled to be performed for Buyer, Buyer's customers and regulatory agency personnel, including those facilities of Seller's agents and subcontractors, in order to perform Item inspections, surveys or system/process surveillance as part of verification of conformance to the requirements of this PO. Seller shall include the provisions of this facility access requirement in its POs with its agents and subcontractors, for this PO.
- B. Seller shall provide the following to Buyer, Buyer's customers or regulatory agencies:
 - 1. Suitable facilities at Seller and Seller's subcontractors' manufacturing locations for Buyer, Buyer's SQE, Buyer's customer and regulatory agency representatives to perform Item inspections, surveys or system/process surveillance, and
 - 2. High-speed internet access for Buyer's SQE, Buyer's customers or regulatory agencies.
- C. Seller and Seller's sub-tier shall comply with Buyer's inspection requirements. Product acceptance inspection may require up to 100% for all characteristics. See Buyer's additional requirements document, if applicable, as specified elsewhere in the PO (e.g., per drawing, per Program Direction, PPV, Flight Safety Items).
- D. Seller shall ensure sampling is performed per AS9100 paragraph 8.5.1.c.2 to ensure that when sampling is used as a means of product acceptance, the sampling plan is justified on the basis of recognized statistical principles and appropriateness of use (per ANSI Z1.4, ANSI Z1.9 and MIL-STD-105E, as applicable; i.e., matching the sampling plan to the criticality of the product and to the process capability).
- E. Buyer's inspection plan requirements may require the Seller to request and obtain approval of alternate inspection frequency plans. See Buyer's additional requirements document(s) if applicable as specified elsewhere in the PO (e.g., per drawing, Per Program Direction, PPV, Flight Safety Items). Additional documents may be included in plans (i.e., AS13002 as a guide).

1.14 Corrective Action, Preventive Action, Request and Reporting

Seller Shall:

- A. Ensure effective corrective and preventive action is taken (including repetitive nonconformances dispositioned "**Use-As-Is**" or "**Repair**" by Buyer's or Seller's Material Review Board ["MRB"] actions) to prevent, minimize or eliminate nonconformances.
- B. Evaluate each nonconformance for its potential to exist in previously produced items and notify Buyer by submitting a Supplier Disclosure Letter (SDL) on items in transit or delivered to Buyer or Buyer's customers in accordance with the following:

1. Provide buyer with Initial notification within three (3) business days if Seller's assessment reveals it likely that an escape has occurred, except as noted below for flight safety and counterfeit. Provide preliminary disclosure information on the following, at a minimum: facility, part number(s), preliminary affected number of parts, discrepancy and containment action.
 - a. Within five (5) business days after initial notification, provide buyer with additional information, including: purchase order number(s), purchase order line item(s), affected Lockheed Martin program(s), preliminary root cause(s) and updated scope of escape. Design authority Sellers are required to provide disposition recommendation for product. Lockheed Martin shall have final authority for all delivered products.
2. Notify Buyer within 24 hours of the Seller's discovery if potential exists for a non-conformance escape to affect flight safety or if delivered product is Suspect Counterfeit Work. Provide preliminary disclosure information on the following, at a minimum: facility, part number(s), preliminary affected number of parts, discrepancy and containment action.
 - a. Within five (5) business days after initial notification, provide buyer with additional information, including: purchase order number(s), purchase order line item(s), affected Lockheed Martin program(s), preliminary root cause(s) and updated scope of escape. Design authority suppliers are required to provide disposition recommendation for product. Lockheed Martin shall have final authority for all delivered product.
- C. Utilize the instructions located at the [Lockheed Martin Aero Supplier Corrective Action](#) page.
- D. Ensure employees that are leading continuous improvement projects, resolving customer complaints, etc. are properly trained in the execution of Problem-Solving techniques, provide effective corrective and preventive action upon request by Buyer and, when requested by Buyer, provide trend data and perform a Problem-Solving analysis using AS13000 or ARP9136 as guidance.
- E. Assess all Buyer-identified nonconformances, regardless if Item(s) was/were returned to Seller and take appropriate actions to ensure cause(s) of nonconformance are corrected.
- F. Notify Buyer's SQE and buyer when Seller cannot verify a Buyer-reported nonconformance by submitting the [Supplier Responsibility Evaluation Document \(SRED\)](#).

1.15 Control of Nonconforming Product / Material Review Process

- A. Buyer and Buyer's customers have the right to refuse to accept all Seller nonconformances.
- B. Buyer has the right to limit or eliminate Material Review (MR) processing on work defined by this PO.
- C. Seller shall ensure Seller's quality system has capability to report nonconformances on Critical Safety Items (CSI) in full compliance with Defense Federal Acquisition Regulation Supplement ("DFARS") 252.246-7003 and, as applicable, Q12R.
- D. When Buyer's customer has delegated oversight/surveillance of Buyer's work to a cognizant Government representative at Seller's facility, Seller shall submit all material review

dispositions for Buyer-related work to the cognizant Government representative for concurrence when requested by the Government representative.

- E. Seller MR is not applicable to Buyer Furnished Material (BFM). BFM is material, equipment or Items provided to Seller from Buyer and, therefore, not procured or produced by Seller. Seller shall not scrap BFM without prior written authorization from Buyer. If prior written authorization is not obtained, Seller must request Buyer's disposition by submitting a discrepancy within the [Lockheed Martin Aero Supplier Quality Management System](#).

See Appendix QX para 1.14.B for additional direction regarding supplier disclosures.

- F. Upon Buyer's request, Sellers who receive and use BFM are required to provide data regarding failure details, yields, shipment/return dates, etc.
- G. For Seller-designed Items:
1. Seller does not have MR authority for Government-owned assets. Nonconformances must be submitted to the Government for disposition.
 2. Seller MR dispositions are limited to nonconformances that do not affect a requirement defined by Buyer technical data package (Model Based Engineering, Drawing, etc.) or specification, where form, fit, function, interchangeability, Critical Safety Characteristic (CSC) related to CSI, service life or reliability is affected. Seller shall submit requests for recommended disposition of nonconformances, if any, affecting any such parameters to Buyer for Variance approval as defined in this PO. Seller's MR authority does not extend to delivered product. Reference Appendix QX para 1.14.B for disclosure.
 3. Seller's request for Buyer MR disposition shall be submitted in accordance with Buyer instructions.
- H. For Buyer-designed Items, Seller MR processing is limited to scrapping of Items, eliminating the nonconformance by rework to engineering, or returning to vendor. Seller shall request repair or Use-as-Is from Buyer's MRB by submitting a discrepancy within the [Lockheed Martin Aero Supplier Quality Management System](#). Seller's continued processing shall be limited to subsequent operations that do not hide, alter or limit the ability to inspect, disposition or repair Item unless Seller has received written approval from Buyer.
- When Buyer has delegated MR to Seller for Buyer-designed Items, Seller's process shall be limited to the scope provided in the MR delegation, and Seller shall comply with the terms of Appendix QX para 1.15.D as stated herein.
- I. When requested by SQE or Buyer, Seller shall provide Buyer's SQE with Seller's or Seller's external providers' MRB disposition information related to Buyer's Items.

TAILORED REQUIREMENTS

2.0 Zero Defect Plan (ZDP)

- A. Buyer reserves the right to require Seller to implement a Zero Defect Plan (ZDP) or a Buyer-approved alternative methodology to protect Buyer from receiving quality escapes.
- B. The proposed plan and corresponding measures of effectiveness (Key Performance Indicators [KPI]) require review and acceptance by Buyer's SQE.

1. Upon Buyer's request, Seller shall provide KPI data as measures of effectiveness for ZDP.
- C. Upon Buyer's request, Seller shall provide Buyer access for review to Seller's ZDP or alternate Buyer-approved methodology.

NOTE: ZDP expectation is derived from the Lockheed Martin Aeronautics PO that expects delivery and quality of 100% conforming parts and quality certification such as AS9100. Lockheed Martin Aeronautics Sellers are expected to prepare and execute a ZDP that is inclusive to Lockheed Martin Aeronautics products. For additional information, guidance and example standard tools for development, see the [Lockheed Martin Aero Supplier Portal](#).

2.1 Special Process Requirements for Buyer-Designed Items and Alternate Repair Sources repairing OEM items

- A. QCS-001 sets forth both the special process sources and the special processes that require Buyer approval prior to use for Items delivered to Buyer. Special Process documentation is located at Lockheed Martin Aeronautics Supplier Portal ([qcs-001.pdf \(lockheedmartin.com\)](#)). For special processes not covered by QCS-001, the Seller shall have a system for approving and controlling special process sources. Seller is not required to utilize QCS-001 sources or provide Special Process Quarterly Usage Reports when processing the following:
1. standard hardware (nuts, bolts, washer, etc.) ordered to military, federal or industry specifications or standards (e.g., MS, AN, NAS, etc.); or
 2. metallic raw material (plate, sheet, bar, extrusion, etc.); or
 3. perishable tooling and Tool Service Requirements List ("TSRL") Items
- B. Seller, its agents and subcontractors at all tiers working on Buyer's product shall meet all requirements of the latest version of [Appendix QJ](#) in effect as of the date of the Request for Proposal (RFP) unless otherwise amended by Buyer and Seller prior to PO issuance when performing any Buyer-controlled process identified in QCS-001.
- C. Seller's utilization of Buyer-approved or Nadcap-accredited 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 Buyer's request, Seller shall provide objective evidence that compliance was attained and that delivered items were conforming.
- D. Buyer authorizes Seller to use Nadcap-accredited special process sources. Seller may access Nadcap approved sources at <http://www.pri.sae.org> or <http://www.eauditnet.pri.sae.org>. Buyer shall have the right to validate any Nadcap-approved source or process using normal survey practices and shall have the right to disapprove Seller's use of any such source relating to this PO.
- E. Seller shall be responsible for providing special process source with the appropriate revision level of the process standards/specifications prior to performing processing on Buyer's product.
- F. Seller shall ensure all Seller sub-tier POs or associated PO documents for Buyer-controlled processes include the following data elements:

1. Seller's unique Lockheed Martin Aeronautics identification number ("vendor code"); and
 2. All QCS-001-controlled specifications, including revision, for which processing will be performed; and
 3. Buyer-unique "process codes" for each Buyer-controlled process to be performed; and
 4. Applicable program Finish Specification and revision; and
 5. A statement with the words, "Processing directly related to a Lockheed Martin Aeronautics Company Purchase Order (PO) must be accomplished in accordance with process specifications in this PO and Lockheed Martin Aeronautics Company [Appendix QJ](#);" and
 6. A statement that Seller's sub-tier must file and maintain a copy of all POs containing the above statement and make these available for review by Buyer, upon request; and
 7. A statement that Seller's sub-tier must submit a CoC with a unique certification number which contains the elements listed in [Appendix QJ](#); and
 8. Fracture durability classification or serialization, when required; and
 9. A statement to ensure Seller's sub-tiers suitably wraps, boxes or racks parts to guard against shipping damage and to apply rust or corrosion protection; and
 10. Maintain and provide records of all QCS-001 "Work" performed in accordance with Quality Appendix QJ Section II, paragraph G
- G.** Seller shall maintain special processing activity data on each Buyer-approved process performed for Buyer including processes performed by Seller on Buyer Items, or any Special Process source utilized, and Seller shall compile a quarterly Usage Report of this activity data and submit it to Buyer from the link at [Lockheed Martin Aero Supplier Quality Management System](#). Seller shall also complete any special process source data collects that are part of the inspection lot that is created prior to shipment of product to Lockheed Martin Aeronautics.

Seller shall also include all special processing activity accomplished in this Usage Report. Seller shall submit the Quarterly Usage Report within fifteen (15) calendar days after the end of each calendar quarter, even if no Special Process sources were utilized during a calendar quarter. Usage Reports shall not be input prior to the end of each calendar quarter. Seller's Usage Report shall consist of processing activity accomplished in the following activity categories:

1. Seller subcontracting special processing activity to Special Process or Nadcap approved sources, or
2. Seller performing special processes on Buyer Items for other Buyer suppliers, or
3. Seller performing special processes on Buyer Items the Seller manufacturers, or
4. Seller's sub-tier manufacturing sources who subcontract special processing activity to Special Process or Nadcap approved sources.

NOTE: Usage Reporting is not required when Seller is performing Special Process processes for non-Buyer PO's.

2.2 Special Process Requirements for Seller-Designed Items

- A.** Seller has the authority and responsibility to approve and control Seller's special processing sources including in-house processes. At Buyer's discretion, Buyer may schedule surveillances/audits of Seller's special process sources per Appendix QX para 1.13.A. Facility Access as needed to ensure all outlined requirements are met. Seller shall have a process for ensuring that special processes are controlled and approved, as appropriate, at all sub-tier suppliers for any work under this PO.

2.3 Competence Operator Self-Verification

- A.** When Seller utilizes Operator Self-Verification, the Seller shall develop and implement an Operator Self-Verification program compliant with AS9162.

2.4 Advance Product Quality Planning (APQP)

- A.** When required on the purchase order, contract or as a program requirement, Seller shall comply with AS9145 and customer-defined requirements, including record retention and submission.
- Requirements shall be maintained and updated as required per AS9145 with notification or submittal to customer as agreed.

NOTE: Additional information can be obtained through the [IAQG SCMH](#).

Table 1 – Additional Quality Clause Requirements

Commodity / Product / Service	<u>Q6R</u> Software & Firmware - Deliverable & Non-Deliverable (AS9115)	<u>Q2A</u> First Article Inspection (AS9102)	<u>Q16</u> Engineering Directed Standard Tool/Perishable Tool Inspection Requirements	<u>Q17</u> Maintenance, Repair or Overhaul Activities (Components) (AS9110)	<u>QS1</u> Maintenance, Repair, and Overhaul & Upgrade (Sustainment Air Vehicle)
<ul style="list-style-type: none"> • Buyer Special Hardware¹ • Buyer Build-to-Print Metallic & Non-Metallic Parts • Finished Castings & Forgings • Sheet Metal • Machined Parts • Structural Assemblies/Details • Honeycomb Core • Composite Parts • Modified COTS Hardware / Standard Catalogue Items² 	X	X			
<ul style="list-style-type: none"> • Electrical, Mechanical, Avionics (equipment, assemblies, sub-assemblies, details, harnesses and major components), including jet engines and propellers 	X	X			
<ul style="list-style-type: none"> • Ground Support Equipment 	X				
<ul style="list-style-type: none"> • Raw Castings & Forgings 		X			
<ul style="list-style-type: none"> • Perishable Tooling 	X		X		
<ul style="list-style-type: none"> • Software 	X				
<ul style="list-style-type: none"> • Maintenance, Repair and Overhaul (MRO) of Government/ Foreign Military Sales (FMS) assets 	X			X	
<ul style="list-style-type: none"> • Customer owned Air Vehicle level, including field service repair of components on or off AV 	X				X
<ul style="list-style-type: none"> • Distributors³ 		X			

Table 1 Describes the commodities, products, and services covered in additional Quality Clauses.

- Buyer Special Hardware¹ – Hardware defined by Lockheed Martin Company designed standards (JSF & C standards are two common examples, but the definition is not limited to these). In cases of Buyer Special Hardware where **both** of the following conditions exist, an FAI exemption can be utilized:
 - Part is one inseparable component (typically referred to as a Detail part)
 - Part only re-identifies a non-Lockheed Martin designed part without adding additional design characteristics (i.e., all requirements must be identical except for the part number marking)

NOTE: Any Buyer Special Hardware that does not fit into the above definition shall require a Q2A & AS9102 compliant FAI (as indicated in their respective commodity type in Table 1).
- Modified COTS Hardware / Standard Catalogue Items² - Requires seller to execute a partial FAI encompassing differing design characteristics to the baseline configuration.
- Distributors³ – This standard is for use by organizations that procure parts, materials and assemblies and resells these products to a customer in the aviation, space and defense industries. This includes organizations that procure products and split them into smaller quantities including those that coordinate a customer-controlled service on the product.

NOTE: For additional questions regarding commodities not listed in Table 1, contact the Buyer.

Table 2 – Program / Customer Requirements

Commodity / Product/ Service	<u>Q1R</u> Commercial Conformity Certifications	<u>Q3R</u> Fit Check	<u>Q10R</u> Commercial Quality Requirements	<u>Q11R</u> C130J and LM100J Programs – Specific Quality Requirements	<u>Q12R</u> Critical Safety Item – Specific Quality Requirements	<u>Q30</u> Advanced Quality Requirements for F-35 Airframe Suppliers Process Capability Data Submittal (AS9103)	<u>Q40</u> Advanced Development Programs – Specific Quality Requirements
C130/LM100J		X		X	X		
Product or Services controlled by FAA requirements	X		X				
F35					X	X	
F16					X		
F22					X		
ADP					X		X

Table 2 Describes the program and customer requirements by commodities, products, and services covered in additional Quality Clauses.

REFERENCES

- A. AS/EN/JISQ 9100 – Quality Management Systems – Requirements:
For Aviation, Space and Defense Organizations
- B. AS/EN/JISQ 9110 – Quality Management Systems – Requirements:
For Aviation Maintenance Organizations
- C. AS/EN/JISQ 9120 – Quality Management Systems – Requirements:
For Aviation, Space and Defense Distributors
- D. ISO 9001 – Quality Management Systems Requirements
- E. ISO/IEC 17025 – General requirements for the competence of testing and calibration
laboratories
- F. ISO 31000 – Risk management – Guidelines
- G. FAA 21.137 (c) – Supplier Control
- H. FAA 21.137 (c1) – Ensure that each supplier-furnished product or article conforms to its
approved design
- I. FAA 21.137 (d) – Manufacturing Process Control
- J. FAA Form 8130
- K. EASA Part 21 – Initial Airworthiness - Commission Regulation (EU) No 748/2012 of 3 August
2012, Airworthiness and Environmental Certification

- L.** EASA Part 145 – Continuing Airworthiness - Commission Regulation (EU) No 1321/2014 of 26 November 2014 – Continuing Airworthiness
- M.** SAE AS5553 – Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation, and Disposition
- N.** SAE AS6174 – Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming
- O.** SAE AS/EN/JISQ 9102 – Aerospace First Article Inspection Requirements
- P.** SAE AS/EN/JISQ 9103 – Key Characteristics
- Q.** SAE AS/EN/JISQ 9117 – Delegated Product Release Verification
- R.** SAE AS9115 – Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations - Deliverable Software
- S.** SAE AS/EN/JISQ 9131 – Non-conformance Data Definition and Documentation
- T.** SAE ARP 9134 – Supply Chain Risk Management Guideline
- U.** SAE ARP 9136 – Root Cause Analysis and Problem Solving
- V.** SAE AS/EN/JISQ 9145 – Requirements for Advanced Product Quality Planning and Production Part Approval Process
- W.** SAE AS/EN/JISQ 9146 – Foreign Object Damage (FOD) Prevention Program
- X.** SAE AS 9162 – Aerospace Operator Self-Verification Programs
- Y.** SAE AS 13000 – Problem Solving Requirements for Suppliers
- Z.** SAE AS 13002 – Requirements for Developing and Qualifying Alternate Inspection Frequency Plans
- AA.** SAE AS 13003 – Measurement Systems Analysis Requirements for the Aero Engine Supply Chain
- BB.** SAE AS 13004 – Process Failure Mode and Effects Analysis (PFMEA) and Control Plans
- CC.** SAE AS 13006 – Process Control Methods

Hyperlinks

- **Lockheed Martin Aeronautics website:** <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/quality-appendices.html>
- **Buyer's Supplier Quality Engineer (SQE):** <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/information.html>
- **Buyer's website:** <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements.html>
- **Supplier Risk Event Notification | Lockheed Martin:** <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/supplierriskeventnotification.html>

- [IAQG Supply Chain Management Handbook](https://iaqg.org/tools/scmh/): <https://iaqg.org/tools/scmh/>
- [Lockheed Martin Aero Supplier Quality Management System](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/supplier-quality-management-system.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/supplier-quality-management-system.html>
- [TMS-MC-015](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/control-specs.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/control-specs.html>
- [Lockheed Martin Aero Supplier Corrective Action](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/corrective-action.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/corrective-action.html>
- [Supplier Responsibility Evaluation Document \(SRED\)](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.lockheedmartin.com%2Fcontent%2Fdam%2Flockheed-martin%2Faero%2Fdocuments%2Fscm%2FQuality-Requirements%2FForms%2FSupplierResponsibilityEvaluationDocument.docx&wdOrigin=BROWSELINK):
<https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.lockheedmartin.com%2Fcontent%2Fdam%2Flockheed-martin%2Faero%2Fdocuments%2Fscm%2FQuality-Requirements%2FForms%2FSupplierResponsibilityEvaluationDocument.docx&wdOrigin=BROWSELINK>
- [Lockheed Martin Aero Supplier Portal](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics.html>
- [qcs-001.pdf \(lockheedmartin.com\)](https://www.lockheedmartin.com/content/dam/lockheed-martin/aero/documents/scm/Quality-Requirements/Control-Specs/qcs-001.pdf): <https://www.lockheedmartin.com/content/dam/lockheed-martin/aero/documents/scm/Quality-Requirements/Control-Specs/qcs-001.pdf>
- [Appendix QJ](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/quality-appendices.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/quality-appendices.html>
- [IAQG SCMH](https://www.sae.org/servlets/registration?PORTAL_CODE=IAQG&OBJECT_PKG=iaqg.businessClasses&OBJECT_TYPE=SCMHGeneral&PAGE=gotoSCMH):
https://www.sae.org/servlets/registration?PORTAL_CODE=IAQG&OBJECT_PKG=iaqg.businessClasses&OBJECT_TYPE=SCMHGeneral&PAGE=gotoSCMH
- [Quality Requirements Documents](https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements.html): <https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements.html>