

Appendix QX

Supplier Quality Requirements

REVISION LOG

The latest issue to this document is the version that is available on the Lockheed Martin Aero website:
<https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/quality-appendices.html>

Revision	Date	Changes
Revision 10	06/14/2023	<p>ADMINISTRATIVE CORRECTION: Reference to 1.1A does not align in QX10, appears to have aligned with 1.1A in QX9. Corrected to be 1.2.A.</p>
	01/01/2023	<p>Completely revised, reformatted, and reorganized document to bring it up to current standards and practices. As well as general language corrections and word choice, larger areas of change include:</p> <ul style="list-style-type: none"> (1) Definitions/Applicability, A – “Seller” is made to refer to LM first-tier suppliers that receive LM Pos (2) Definitions/Applicability, “bullet one” – ISO9001 cert is not required for COTS hardware and production parts (excluding F-35). (3) Definitions/Applicability, “bullet two” - Non-applicable requirements need not be removed; they're understood to be self-deleting. (4) Definitions/Applicability, “bullet four” – LM Pos will not specify applicable Quality Clauses on face of PO. Reference to QX is all that is needed and Clauses are invoked by Tables 1 & 2. (5) Definitions/Applicability, “bullet five” - Applicable Quality Clause requirements are in addition to General requirements of QX. If there are conflicts, Clause requirement supersedes General requirement. (6) Section 1.0.A.2.b & d – Requirements moved from Clause Q17 into QX to streamline process and understanding (7) Section 1.0.A.3.c & d – Updated language to clarify the requirement (8) Section 1.0.B & C - Requires use of OASIS database for AS-certified suppliers and Buyer access to Sellers OASIS and Nadcap data pertaining to PO Item. (9) Section 1.2 - Directs Seller to new online system for notification submittal. (10) Section 1.2.B - SCM requested 180 advance notice on required notification and a due date for submittals. (11) Section 1.4.B.1.a - Added to ensure traceability of Buyer's approval per para 1.4.B.1 is recorded and readily available. (12) Section 1.4.B.1.b - Informs Seller how to submit a NTOEM SPAR required by para 1.4.B.1.a. (13) Section 1.4.C.2 - Provides for record of no traceability, and instruction on how to proceed. (14) Section 1.5. B.1-11 - Added specific data elements to be included on the CoC consistent with requirements of AS9163 when it gets released. (15) Section 1.5.C - If shipping from a location other than the PO address, supplier is acting on behalf of PO addressee, and needs to include the information for both (name, location, etc.). (16) Section 1.7 - Added awareness that GIDEP membership alone is not sufficient. Sellers are expected to utilize GIDEP for assessing risks to the product. (17) Section 1.11 – FOD Requirement was formerly Clause Q4R in QX Table 1. Moved to General Requirements here because it applies to all commodities. (18) Section 1.12.D - Minor wording changes to advise SQE of changes to ECD, and allow 2 days for SQE to perform acceptance. (19) Section 1.13.C - Add clarity to the sampling and inspection requirements

		<p>To inform supplier that if directed by PO or drawing a 100% sampling requirement may be required.</p> <p>(20) Section 1.13.D - Supplier requirement to ensure any critical feature is provided the proper level of oversight and inspection and sampling.</p> <p>(21) Section 1.13.E - Alternate Inspection Frequency Plans shall be based on statistical principles and standards.</p> <p>(22) Section 1.14.B.1 - Shortens notification due date from 5 days to 3 business days.</p> <p>(23) Section 1.14.B.1.a - Requires follow up with additional details in 5 business days.</p> <p>(24) Section 1.14.B.2 - Requirement for notification of counterfeit work escapes affecting flight safety within 24 hours.</p> <p>(25) Section 1.14.B.2.a - Requires follow up with additional details in 5 business days.</p> <p>(26) Section 1.14.D - New requirement to ensure personnel involved in corrective action are trained and utilize proper tools to provide effective C/A. Also requires Seller to provide pertinent data upon request.</p> <p>(27) Section 1.14.F - now includes requirement for SRED submittal (formerly SCAR) needed to document Could Not Duplicate, No Fault Found, etc..</p> <p>(28) Section 1.15.B - Updated language to clarify the requirement.</p> <p>(29) Section 1.15.G.2 - Modified to state that MR authority does not extend to delivered product. Notification of NCM escapes to LM require notification IAW para 1.14.B.</p> <p>(30) Section 1.15.G.3 - Updated language to clarify the requirement.</p> <p>(31) Section 2.0. A-C - Added ZDP requirement for supplier(s) who are or have been "red" for 6+ months in an effort to redirect cost.</p> <p>(32) Section 2.1.F.10 - Language from LM Quality Clause QJ included to streamline process and understanding.</p> <p>(33) Section 2.3 – Added AS9162 industry standard-specific requirement to the supply base.</p> <p>(34) Section 2.4 – Added AS91452 industry standard-specific requirement to the supply base.</p> <p>(35) Table 1 – a) Modified COTS Footnote 1 to clarify requirements for modified COTS Hardware. b) Added new Clause QS1 to table</p> <p>(36) Table 2 – a) Description noting that Q17 applies to MRO at the Item level and QS1 applies to MRO at the aircraft level. b) Added new Clause Q40 for ADP requirements. c) Update to Table to include C-130, F-35, F-16, F-22, and ADP programs for Clause Q12R CSI requirements.</p>
Revision 9	03/09/2022	<p>ADMINISTRATIVE REVISION:</p> <p>(1) Section 1.11c – clarified the requirement by adding “material/product for any program other than F-35” so as to meet the requirements defined in AC-2057, Appendix A.</p>
	10/18/2021	<p>ADMINISTRATIVE REVISION:</p> <p>(1) Section 2.4.7 – revised the outdated link with up-to-date link address</p>
	07/22/2020	<p>ADMINISTRATIVE REVISION:</p> <p>(1) Section 1.6.a.5 – revised the outdated link to external documentation with up-to-date link address.</p>
	11/30/2017	<p>REVISED:</p> <p>(1) Table of contents notes – revised the link instructions for the Buyer-unique documents because without letting the supplier know they must go to Quality Requirements once they get to the website the instructions are incomplete. (2) Section 1.2 revised to say “Sale, Relocation, or Closure of Seller’s Facility or Transfer of Manufacturing Operations” due to interpretations that this section does not apply to Distributors, bullet points were clarified. (3)Section 1.3 revision clarifies the intent is a language requirement. (4) Section 1.4 Counterfeit Parts / Materials Prevention – complete re-write to comply with new DFARs. (5) Section1.5.d was revised to delete the need for documents to be included in the shipping container. (6) Section1.6 title was changed from “Records” to “Quality Records”. (7) Section1.6.a.2 revision changes length of time from “after completion of this PO” to “after item delivery”. (8) Section1.6.a.3 revision changes length of time from “after completion of this PO” to “after item delivery”. (9)Section 1.9 revised to include “ANSIZ540”. (10)Section 1.11.a revised to remove “non-value added”. (11) Section 1.11.b was revised to align with new requirements in AS9110. (12) Table 1 revisions: (a) Maintenance and Overhaul Center was renamed “Maintenance, Repair or Overhaul of Government-Owned Assets”. (b) Removed the</p>

		<p>check for FAI Q2A. (c) Commodity/ Product was revised to “Commodity/ Product/ Service”. (d) Software was renamed “Software/ Firmware”. (e) Q6R note was changed to say “(Applies to deliverable and non-deliverable software & firmware)”. (13) Section 2.0 Second Paragraph – complete re-write (14) Section 2.0.a clarifies the Seller does not have to provide name and location of all subcontractors. (15) Section 2.0.b revised to obtain acknowledgement from Buyer’s SQE prior to start of manufacturing activity and states that SQE acknowledgement signifies Seller’s compliance with para 2.0.a. (16) Section 2.1.a revised to remove punitive actions if supplier denies access. (17) Section 2.2.b now instructs Suppliers to submit SDL to Buyer on items in transit or delivered to Buyer or Buyer’s customers. (18) Section 2.2.f revised to have Seller notify Buyer’s SQE and buyer when the seller cannot verify a Buyer reported nonconformance. (19) Section 2.3.5 revised to include “or assemblies where BFE has become an integral, inseparable part of the assembly.”</p> <p>ADDED: (1) Section 1.0.e is a AS9100D 8.4.3m requirement that needs to be flown down. (2) Section 1.1 added link for DCMA Car submittal form to resolve DCMA issue where SQM is not in compliance to QX1.1 (3) Section 1.1.d states that the Seller shall permit LM Aero access to data in OASIS and NADCAP database and that LM Aero reserves the right to input repetitive escape data and major findings regarding the seller into the OASIS database for review by the Seller’s Registrar or Certification Body. (4) Section 1.5 Note was added to give further instructions. (5) Section 1.6.a.5 was added to replace section 1.6.b and provide further clarification. (6) Table 1 Additions: (a) Row “Product or Services controlled by FAA requirements” (b) Column “FAA Conformity Certifications” - Q1R (c) Column “FAA”-Q10R (d) Column “C130J / LM100J” – Q11R (e) Row “C130J/ LM100J Specific Quality Requirements”</p> <p>DELETED: (1) Table of Contents Notes-removed “Seller” from the note because defining “Seller” to mean the same as “Seller” is nonsensical. (2) Section 1.6.a.4 “at no additional cost, price, or fee to buyer” was removed from section. (3) Section 1.6.b was deleted and replaced by 1.6.a.5. (4) Table 1 Definitions – definition for MRO was deleted because it excluded OEM and is incorrect.</p>
<p>Revision 8</p>	<p>8/7/2015</p>	<p>Major Revisions: (a) Section 1.0 Supplier’s 3rd party quality management system registration must be by an accredited registrar listed in OASIS. (b) Section 1.1 Expanded the notification requirements for quality system changes and/or Customer findings; (c) Section 1.4 Counterfeit Parts/Materials Prevention – Complete re-write. (c) Section 1.6 Records – Added requirements for actions to be taken in the event of the dissolution of a business. (d) Added new Section 1.11 “Quality System Requirements” – this section replaced Table 1 from Revision in its entirety. Also removed requirements for Service Providers. (e) Table 1 (previous Table 2 from Revision 7) – Added requirement for Q17 “Maintenance, Repair and Overhaul”; removed P-3 program from Q3R Fit Check requirement; removed Q2B from FAI requirement (see new Q17); Removed requirement for Service Providers; Revised definition of Distributor; (f) Section 2.2 Consolidated section on reporting of potential or verified nonconformances. Notification specifically as Supplier Disclosure Letter. Revised wording for actions when Seller cannot verify Buyer-reported non-conformance.; (g) Section 2.3 For Sellers with delegated oversight/surveillance to a Government representative, reworded to require Seller to submit material review dispositions to Government representative “...when requested by the Government representative”. (h) Section 2.4 QCS-001 Requirements for Buyer-Designed Items – Major re-write. (i) Section 2.5 QCS-001 Requirements for Seller-Designed Items – removed paragraph addressing Buyer’s right to withdraw Seller’s authority to approve internal and external special processes. (j) Removed in its entirety Section 2.6 addressing Maintenance, Repair and Overhaul Activities – replaced with Quality Clause Q17 in Table 1.</p>
<p>Revision 7</p>	<p>8/20/2012</p>	<p>(1) Table 1 (a) contains requirements for 3rd party certifications; (b) specific commodities require AS9100 3rd party certification no later than July 1, 2013 – additional requirements for Alternate Repair Activity on Non-OEM Product and Non-Value Added Distributors; (c) additional quality requirements have been separated into Table 2 and are listed by commodity (e.g. Q2A “First Article Inspection”, Q4R “FOD”, etc.; (d) AS9100 certifications for non-value added Distributors will be accepted; however, AS9120 certification is preferred; (2) Table 2 –</p>

		<p>(a) Added separate Table 2 for additional quality requirements; (b) Added line for “Raw Castings & Forgings” to flow Quality Clauses Q6R “Software” and Q2A “FAI” only – removed FOD requirement for raw castings & forgings; (c) Added “Finished” to define castings & forgings in line where FOD is required; (d) Added P3 to Fit Check requirement; (3) Section 1.1 Listed minimum information to be provided in notification of sale, relocation or transfer of Seller’s manufacturing operations; (4) Section 1.3 “Counterfeit Parts Prevention” (a) rewritten to better flow quality requirements with regard to counterfeit parts prevention; (b) Added reference to AS-6174 for prevention/control plan; (c) added “raw material” to list of identifiable items; (d) While advance approval from Buyer is required prior to acquiring work from independent distributor or broker, this written approval is not required for raw material and standard hardware, however, products must be traceable to the original manufacturer; (e) Defined required elements of response to LM Aero when evidence of supply chain traceability is requested; (f) Deleted paragraph referencing costs associated with work delivered to LM Aero and subsequently identified as counterfeit; (5) Section 1.4 Certificate of Conformance – (a) Added provision for alternate acceptance of DD250 process; (b) Added requirement to include copy of CoC inside shipping container; (6) Section 2.0 – Added a list of minimum information to be provided in Seller’s notification plan in event of changes to sale, relocation or transfer to Seller’s manufacturing operations; (7) Section 2.2 – added requirement for Seller to initiate a SPaR for additional verification testing/disposition of parts for which it is unable to verify a reported nonconformance; (8) Section 2.3 (a) Renamed to “Control of Nonconforming Product/Material Review Process; (b) Major re-alignment of paragraphs; (c) <u>Major re-write</u> of Section 2.3; (9) Section 2.6 Added new section for Maintenance, Repair or Overhaul Activities; (10) Other sections with revisions marked by appropriate markings in the released version of Appendix QX; (11) Deleted redundant requirements flowed by other documents (e.g., Sampling is flowed by AS9100).</p>
<p>Revision 6</p>	<p>03/01/2010</p>	<p>REVISED: (1) Changed all Material Management references to Supply Chain Management; (2) Changed all Procurement Quality Assurance (PQA) references to Supplier Quality Management (SQM); (3) Section 1.0 Reworded to indicate Seller is to meet the requirements of the latest revision of Appendix QX – removed reference to Table; (4) Section 1.1 – Removed first reference to “adverse”; (5) Section 1.2 – Removed “Unless otherwise authorized by Buyer in writing”; (6) Section 1.4 – Enhanced language on Counterfeit Parts; (7) Section 1.5 – Removed “Buyer-identified” wording; (8) Section 1.6 – Removed “Seller shall provide Items under this PO that meet all applicable requirements of this PO” and re-worded to require Seller to ship Items that are in total compliance with all applicable requirements of this PO; (9) Section 1.7 – Added “unless otherwise stated in this PO” to first sentence; Also added paragraph stating that upon Buyer’s request, Seller shall forward specific records to Buyer at no additional cost, price or fee to Buyer; (10) Section 1.8 Added specific date for GIDEP membership requirement; (11) Revised Table 1 – Combined Q30 and AS9103 requirement for F35 under “Variability Reduction”; (12) Revised ISO9001:2000 to reflect ISO9001:2008 in Table 1 and Note 3; (13) NOTES - #3 – Clarified by added “Suppliers with F35 Commodities”; #5 – added “If Seller is a Service Center acting as a Distributor, Seller shall company with AS9120”; #6 – added “A Distributor cannot act as a Service Center unless the Distributor has a license in place”; (14) Para. 2.0.a,b,c. Added “and/or manufacturing site” to list of information required from Seller when Items manufactured, accepted or shipped from a location other than the contracted PO address; (15) Section 2.0.1 and 2.0.2 – Added Seller actions to take when Buyer has delegated end-item acceptance to Seller; (16) Para. 2.1 Added “Regardless of Buyer’s or Buyer’s Customer Point of Acceptance on this PO or whether Buyer’s Customer has issued a delegation for this PO” to requirement of Seller providing facility access; (17) Para 2.3.3 – Added process for submitting a Supplier Disclosure Letter utilizing on-line system; (18) Para 2.3.4 – Reworded requirement for Seller to respond to all Buyer requests for corrective action to read “Seller shall provide effective corrective and preventive action upon request by Buyer”; (19) Combined Sections 2.4, 2.5, 2.6, 2.7 and 2.8 into one Section 2.4 “Material Review Authority, Requests and Reporting” – additional revisions: Seller directed to follow instructions at provided URL if nonconforming Buyer Furnished Equipment has been identified; Buyer and Buyer’s customers have the right to refuse to accept any Seller nonconformances; Seller cannot continue processing Item(s) or incorporating any nonconformances into any Item, process, procedure or data that affects a parameter controlled by Buyer drawing or specification or affects form, fit or function, interchangeability, service life or reliability unless</p>

		<p>and until Seller has received prior written approval from Buyer. (20) Section 2.6 Revised to add “Seller has the authority and responsibility to approve and control its processing sources including in-house processes.”</p> <p>ADDED: (1) Section 1.7 – New sentence “Upon Buyer’s request, Seller shall forward specific records to Buyer at no additional cost, price or fee to Buyer”; (2) Table 1 – Distributors – Impose QMS Notes 1/6, Q2A “FAI” and Q4R “FOD”; Maintenance & Overhaul Centers – Impose QMS Notes 1/6; Service Centers – Impose Q4R “FOD”; added Note 7 – “A Contract Service Agency is considered to be a Distributor and shall comply with AS9120”; added Note 8 for Maintenance and Overhaul Centers; (3) Section 2.1.2 – Seller shall provide Buyer’s SQM SQE with high speed internet access (DSL or wireless); (4) Sections 2.4 – MRA for Seller-designed Items is not applicable to Buyer-Furnished Equipment/Items; Seller shall submit all material review dispositions for Buyer related work to the on-site Government representative for concurrence when oversight/surveillance delegated to an on-site Government representative at Seller’s facility; Seller shall provide MRB disposition information upon request by Buyer. (5) Section 2.4 – MRA for Buyer-Designed Items – Buyer and Buyer’s customers have the right to refuse to accept and all Seller nonconformances. When Buyer’s customer has delegated oversight/surveillance of Buyer’s work to an on-site Government representative at Seller’s facility, Seller shall submit all material dispositions for Buyer related work to the on-site Government representative for concurrence. When requested, Seller shall provide MRB disposition information related to Buyer’s Item(s). (6) Section 2.4 – If Buyer has delegated MRA to Seller on Buyer-designed Items, that MRA delegation is not applicable to Buyer-Furnished Equipment/Items.</p> <p>DELETED: (1) “Section 1.4 Supplier Control - Seller shall ensure all Items procured from its suppliers for this PO conform to all requirements of this PO” – redundant language; (2) Section 2.11 LMA D0010 Compliance on Composite/Bonded Products.</p>
Revision 5	12/2/2008	<p>Added: (1) Section 1.0 requirement of a 3rd party registered quality system; (2) Section 1.5 Counterfeit Parts Prevention; (3) Section 1.9 GIDEP Membership; (4) Section 2.0 Periodic surveillance of quality system, manufacturing processes or physical Item, possible full-time oversight, Buyer notification of shipment from a location other than the contracted PO address; (5) New Section 2.6 for Material Review Authority and Reporting of Nonconformances on Buyer-Furnished Equipment/Items; (6) Section 2.8 Compliance with DFARS 252.246-7003 on reporting nonconformances on CSI; (7) Section 2.11 Compliance with LMA-D0010 for composite or bonded products. Revised: (1) Table 1 – In heading for “QMS”, added “6” to the applicable notes – Reads “See Note 1 and 6”. Removed specific note reference from section on “Engineering Test Units, Brass Boards, Lab-Use-Units, Non-Production Hardware Buyer-Approved Distributors” – QMS column heading contains all applicable note references. (2) Note 1 for Table 1 – Compliance with a currently published and maintained consensus industry standard quality system; (3) Sections 2.03 and 2.04 Added verbiage to reflect these paragraphs apply when Buyer has not provided Seller with prior written authorization to act on Buyer’s behalf; (4) Revised 2.3.5 Removed verbiage related to completion of a SCAR form (5) Section 2.4.1 & 2.5.2 Added MRA exception for on Critical Safety Items (CSI); (6) Section 2.5.1 Added limitations when Seller continues processing nonconforming product prior to Buyer’s MRB disposition; (7) Revised references of Field Engineers to Supplier Quality Engineers (SQE). Removed: 2.1.2 - Requirement for Seller to provide Buyer’s SQE with high speed internet access</p>
Revision 4	3/30/2007	<p>Deleted: (1) Table 2, its Notes and any references within the document; (2) Requirement for a copy of written correspondence addressing QX requirements to be provided to Buyer’s PQA representative; (3) Para. 1.4.1, 1.12, 1.13.3, 2.04, 2.05, 2.8.1, 2.8.3 & 2.9 (4) 3rd and 4th bullets from 2.0 (5) Note 5 in Table 1 referencing F35 (6) Bullets from 2.1.2; (7) The word “segregation” from 2.3.1; Clarified: (1) 1.0 Quality Requirements; (2) 1.7 Records – added “tooling controlled per TMS-MC-015”; 1.10 Calibration – added “MIL-STD-45662”; (3) 1.11 Tooling as a Media of Acceptance – added requirement for Seller to periodically validate their manufactured/owned tooling used as a media of acceptance; (4) Table 1 – Added “buyer-</p>

		approved Distributors” to last item; Table 1 Notes – revised Note 1 to address Buyer-approved distributors; (5) Table 1, Note 1, added “Buyer-approved distributors must either meet ISO, AS, Military equivalent or QCS-122 Quality System; (6) Table 1, Note 5; (7) 2.01 changed “not less than 5 days” to “not more than 5 days; (8) 2.2 added “Industry” to standards; (9) 2.3.1 added “Repair” to disposition (10) 2.3.2 added “or Items in transit to Buyer”; (11) 2.3.4 changed “returned” to “rejected” (12) MRB 2.6.3 & 2.6.4 Re-Written: (1) 1.1 Quality System Changes; (2) Table 1, Note 5 “Service Centers; (3) 2.01 & 2.02 to incorporate 2.05 ; (4) Bulleted lines in 2.0 “Point of Acceptance” made sub-paragraphs; (5) 2.6.4 Seller corrective action plans Added: (1) 1.1 Notification requirement for Supplier relocations (2) Table 1, Note 6 for Buyer-approved Distributors and AS9210 compliance (3) 2.3.4 Requirement for Seller to identify true root cause findings and corrective actions (4) 2.7.2 Note for Sellers providing perishable tooling and Tool Service Requirements List
Revision 3	2/13/2006	Removed references which limited the entire Appendix QX to F-35 (JSF) suppliers only – Appendix QX replaces Appendix QR in its entirety. Major re-alignment of paragraphs to enhance flow of quality requirements. Revised tables to include industry standards and program specific requirements. Added AS9100 requirement for F-35 (by 1 Jan 2010) and AS9120 for Distributors (by 1 Jan 2008). Added Service Centers to listing of “Commodity/Product” in Table 1. Re-worded and re-named section on “Selection, Control and Contract Flow Down to Quality Control Specification (QCS)-001 Sources” to flow requirements of Appendix QJ, where applicable.
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 2. Added Service Providers to Table 1. Added Test Items to Table 1 and incorporate self-deleting requirements for Test Items. Refined Deliverable Software requirements in Table 1. 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.
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
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.