



United Space Alliance

Distributor Quality Assurance Requirements

Products and Services for Human Space Flight – Safe, On Time, and Error Free

USA Safety and Quality Policy Statement

PREFACE

This document defines United Space Alliance (USA) Quality Assurance (QA) provisions for Distributors.

The provisions of this document are applicable to distributor organizations that provide products but do not perform any manufacturing, repair, or refurbishment operations to satisfy the requirements of the USA Procurement document.

INDEX

PARAGRAPH
PAGE

1.0	SCOPE	4
2.0	APPLICABLE DOCUMENTS	4
3.0	REQUIREMENTS	4
3.1	QUALITY SYSTEM	4
3.2	PROCEDURES	5
3.3	ORGANIZATION	5
3.4	QUALITY AUDITS BY BUYER	5
3.5	RECORDS	5
3.6	INSPECTION STATUS IDENTIFICATION	5
3.7	DOCUMENT CONTROL	5
3.8	PURCHASING	6
3.9	CALIBRATION OF MEASUREMENT AND TEST EQUIPMENT	6
3.10	STOCK CONTROL	7
3.11	LIMITED LIFE/AGE/ENVIRONMENT CONTROL	8
3.12	NONCONFORMING ARTICLES	8
3.13	CORRECTIVE ACTION	8
3.14	FINAL/PRE-SHIP INSPECTION	8
3.15	PACKAGING/SHIPPING	9
3.16	ELECTROSTATIC SENSITIVE DEVICES (ESD) PROTECTION	9
3.17	COUNTERFEIT PARTS CONTROL PLAN	10
	APPENDIX A – GLOSSARY	11
	APPENDIX B – SUPPLY CHAIN TRACEABILITY CERTIFICATION	12

1.0 SCOPE

This specification establishes the quality system requirements for organizations that procure parts, materials and assemblies and re-sells these products to a customer in the aviation, space and defense industries. This includes distributors that procure products and split them into smaller quantities. This specification pertains to management, procedures, systems, test & inspection and controls necessary to assure conformance to drawings, specifications, purchase order requirements, and procurements from approved manufacturers and approved sources.

- a. Seller shall provide and maintain a documented quality system manual acceptable to the Buyer. The system shall assure that all products submitted to Buyer conform to Purchase Order (PO) requirements. The Seller shall perform, or have performed, inspections and tests required to substantiate product conformance to drawing, specification, and Purchase Order requirements. At a minimum the quality system shall be in compliance with the appropriate requirements of this document.
- b. Where restricted sources are specified (e.g. QPL, ASL, QSL, etc.) in Buyer's PO, the seller shall obtain products from the original manufacturer or approved supplier. Delivery of products procured from any another source is strictly prohibited.

2.0 APPLICABLE DOCUMENTS:

- 2.1 The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of the other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

ANSI/ESD S20.20 Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)

ANSI/NCSL Z540.1-1994 (R2002), U.S. General Requirements for Calibration Laboratories and Measuring and Test Equipment

AS9100 Quality Management System – Requirements for Aviation, Space and Defense Organization's

AS9120 Quality Management Systems – Requirements for Aviation, Space and Defense Distributors

OMB Policy Letter 91-3 – Reporting Nonconforming Products

3.0 REQUIREMENTS:

- 3.1 **QUALITY SYSTEM:** Seller shall document, implement and maintain a quality system using AS9100 (Quality Management System – Requirements for Aviation, Space and Defense Organization's) or AS9120 (Quality Management Systems – Requirements for Aviation Space and Defense Distributors) as guidance to assure that all articles offered to Buyer for acceptance conform to purchase order (PO) requirements and this specification.

- 3.2 PROCEDURES:** Seller shall document the policy, organization, assignments, functions, and procedures pertinent to the quality system and shall include any specific inspection instructions, which may be required to supplement technical information. Quality system documentation shall be made available to Buyer for review at Seller's facility.
- 3.3 ORGANIZATION:** Effective management for quality shall be clearly prescribed by Seller. Personnel performing quality functions shall have sufficient, well-defined responsibility, authority and the organizational freedom to identify and evaluate quality problems and provide effective corrective action(s).
- 3.4 QUALITY AUDITS BY BUYER:** Seller shall permit Buyer to conduct quality audits, including audits of Seller's suppliers, as required, to evaluate the degree of compliance with this specification and PO. Seller shall make available to Buyer at Seller's facility a copy of each specification, instruction, procedure, record or special requirement deemed by Buyer to be necessary and pertinent to the conduct of such quality audits.
- 3.5 RECORDS:** Seller shall maintain a documented process for generation, verification, and retention of records associated with articles and materials throughout procurement, inspection, handling, storage, packaging and shipping.
- 3.5.1 Records shall be identified and traceable to associated articles, including unit or lot serialization and configuration, when applicable, and shall be made available to Buyer upon request.
- 3.5.2 Seller shall retain records as objective evidence of the quality of any items supplied (i.e., manufacturing, assembly, inspection, physical/chemical test reports, test and special process records and material certification records, as applicable) until directed otherwise by Buyer. Under no circumstances should these records be destroyed without the prior written approval of Buyer. Records shall be made available to Buyer upon request.
- 3.6 INSPECTION STATUS IDENTIFICATION:** Seller shall document and maintain a system for identifying the inspection status of all articles throughout the procurement, storage, inspection, packaging, and shipping operations.
- 3.6.1 Identification may be accomplished by means of stamps, tags, routing cards, labels or other control devices.
- 3.6.2 A record of inspection stamp issuance to designated personnel shall be maintained. If signatures or initials are used, in lieu of stamps, they must be controlled to the same extent as stamps.
- 3.6.3 A stamp bond period shall be specified for terminated personnel or lost and damaged stamps.
- 3.7 DOCUMENT CONTROL:** Seller shall document, implement and maintain procedures which will assure the adequacy and completeness of all documents which affect Buyer's PO. These documents may include, but are not limited to:
- a. engineering drawings
 - b. specifications
 - c. procurement documents / PO
 - d. inspection procedures
 - e. government/military specifications
 - f. manufacturer's specifications
 - g. source control drawings
- 3.7.1 Seller shall assure that obsolete documents are removed from use.

3.8 PURCHASING

The seller shall ensure that purchased product conforms to specified requirements. The seller shall be responsible for the quality of all products purchased from suppliers including customer-designated or restricted sources.

- 3.8.1 The sellers purchasing process shall include
- a. List or register of approved suppliers
 - b. Periodic review of supplier performance
 - c. Define the actions required when dealing with suppliers that do not meet requirements
 - d. Ensure that the sellers function having responsibility for approving suppliers has the authority to disapprove suppliers.
 - e. Requirement to procure from Original Component Manufacturer (OCM), authorized suppliers,
- 3.8.2 Verification of Purchased Product: The seller shall establish and implement inspection or other activities necessary to ensure products meet specified purchasing requirements.
- a. Verification activities may include
 1. Obtaining objective evidence of the quality of the product from suppliers (e.g., accompanying documentation, certificate of conformance, test reports, statistical records, and process control.
 2. Inspection and audit at supplier's facility
 3. Review of required documentation
 4. Inspection of products upon receipt
 5. Delegation of verification to the supplier.
 - b. Purchased material and articles shall not be used, processed or delivered to the buyer until verification of conformance to specified requirements
 - c. When verification of conformance utilizes test reports to verify purchased articles or materials the data in the test reports shall be verified against the applicable specification. The seller shall periodically validate test reports for raw material.
- 3.8.3 Where directed sources are specified (e.g. QPL, ASL, QSL, etc) by the Buyer the Seller shall verify the manufacturing source is as directed.
- 3.8.4 The receiving inspection process shall ensure, when required, that the articles and materials exhibit evidence of initiation of useful life, the life or cycles used, and the date and test time or cycle at which useful life will be expended.
- 3.8.5 Articles and materials and their records clearly indicate their acceptance or nonconformance status when released from receiving inspection and test.
- 3.8.6 Receiving inspection shall implement controls to prevent the acceptance of counterfeit and suspected unapproved parts

3.9 CALIBRATION OF MEASUREMENT AND TEST EQUIPMENT

The supplier shall ensure that all measurement and test equipment calibration activities are performed under the specific requirements of ANSI/NCSL Z540.1-1994 (R2002), U.S. General Requirements for Calibration Laboratories and Measuring and Test Equipment. This may also include the use of an outside calibration agency.

3.9.1 Inspection, Test and Acceptance

- a. Measurement and test equipment selection shall assure that random and systematic errors in any article or material measurement does not exceed ten percent of the tolerance of the article or material characteristic being measured.
- b. Prior to use for acceptance of articles and materials, the Supplier shall ensure that all measurement and test equipment are inspected and/or tested to ensure conformance with requirements.
- c. Documented results of the inspection and/or tests shall be maintained by the Supplier.

3.9.2 Instrument Handling and Storage

All measurement and test equipment shall be handled, stored, and transported in a manner that will not adversely affect the calibration status.

3.9.4 Identification and Labeling of Measurement and Test Equipment

All measurement and test equipment shall be uniquely identified and labeled, tagged, or coded to indicate calibration status and due date of next calibration.

3.9.5 Recall System

- a. All measurement and test equipment shall be recalled and recalibrated at established intervals.
- b. Measurement and test equipment not recalibrated before the recall due date shall be removed from service or otherwise restricted from use until recalibration is accomplished. Authorization for exception shall be obtained from USA prior to use.
- c. Any measurement or test equipment which is damaged, which affects product quality adversely, or which is suspected of affecting product quality adversely, shall be removed from use until repair and/or recalibration is accomplished.

3.10 STOCK CONTROL: Seller shall document and maintain a system of stock control which includes provisions for identification, handling, storage, and rotation of stock to ensure:

- a. Manufacturer's identification of raw materials by process, batch, heat, melt, lot, type, class, etc., is maintained by Seller on the materials or in correlated records.
- b. Inspection status, identification and traceability to procurement documents is maintained on the articles and associated records.
- c. Handling procedures are adequate to prevent damage, loss of identity or traceability, intermingling and material or article degradation throughout handling and storage process.
- d. Access is limited to storage and handling areas to prevent unauthorized material withdrawal.
- e. Articles with special storage and handling requirements; e.g. frozen adhesives, ESD devices, rubber products, etc., are managed, handled and stored to prevent material or article degradation.
- f. The stockroom is subjected to periodic audits or surveillance for compliance with handling, storage and stock control procedures.

3.11 LIMITED LIFE/AGE/ENVIRONMENT CONTROL: Seller shall document and maintain a system to inspect, identify, monitor, recall, and control materials and articles which have limited storage life

and/or environmental requirements. The age control system must include a method of identifying such materials or articles with an expiration date and traceability to date of manufacture/cure date, date of receipt or date of shipment depending on the conditions of purchase.

- 3.11.1 The system will correlate calendar age with environmental exposure when special environments are a part of the limited life stipulation, e.g., cold storage, opened versus unopened, exposure to light, etc.
- 3.11.2 Seller will assure that materials with an expired shelf life are segregated to preclude such materials from being delivered to Buyer.
- 3.11.3 Seller shall not deliver limited life/age materials or articles with less than 75% life/age unless specifically authorized by the Buyer.
- 3.12 NONCONFORMING ARTICLES:** Seller shall maintain a documented system for identification, segregation, control and disposition of articles which do not conform to Buyer's or Seller's documented requirements. Nonconforming articles include counterfeit and/or suspected unapproved parts.
 - 3.12.1 Procedures shall require documentation of each instance of nonconformance and final disposition.
 - 3.12.2 When material or articles are initially found to be nonconforming, they shall be examined by Seller's appointed personnel to determine if the nonconformance:
 - a. Requires scrapping of the material or article because it is obviously unfit for use.
 - b. Requires return of the material or article to Seller's supplier.
 - c. Requires submittal to Buyer for disposition.
- 3.13 CORRECTIVE ACTION:** Seller shall maintain a documented system of positive corrective action to eliminate the causes and prevent recurrence of nonconformances. This system shall encompass all phases of quality activities from material procurement through delivery of articles to Buyer. Seller shall respond promptly to Buyer's request for actions taken to correct deficiencies found in articles submitted or delivered to Buyer.
- 3.14 FINAL / PRE-SHIP INSPECTION:** Seller shall document, implement and maintain a system of final/pre-ship inspection that ensures:
 - a. Where restricted sources are specified (e.g. QPL, ASL, QSL, etc.) in Buyer's PO, seller shall verify the manufacturing source is as specified and the source is reflected in the deliverable documentation.
 - b. The supply chain traceability shall be verified (Reference 3.15.3 Special Certification)
 - c. Visual examination of the articles to be shipped shall ensure:
 - 1. Article identification is as specified in Buyer's PO or appended documents, specifications, drawings, etc.
 - 2. Articles are traceable to associated deliverable documentation (test reports, certifications, etc.) by part number, specification number, type, class, batch, heat, lot, date code, etc. (if applicable)
 - 3. Articles exhibit no physical damage. (e.g.; chips, cracks, dents, scratches, bent leads, etc.)
 - 4. Articles are free of contamination, corrosion, or other degradation.
 - 5. Articles with limited shelf-life meet purchase order requirements.
 - c. The articles and/or associated documentation exhibit evidence of inspection acceptance.

3.15 PACKAGING/SHIPPING: Seller shall document and maintain procedures for inspection of packaging and shipping operations.

3.15.1 The system shall assure:

- a. Packaging and marking is as required by PO.
- b. Deliverable documentation is available, correct, and complete.
- c. Required quantity is contained within the package(s).
- d. Packaging is sufficient to preclude damage during handling and shipping to Buyer.
- e. Transportation and destination are as specified in PO.
- f. Applicable packaging specifications are available.
- g. The proper articles are contained within the package.

3.15.2 The system shall assure that special packaging and marking provisions are complied with.

- a. Labels are applied to environmentally critical component packages (e.g., moisture content levels, gas pressures, etc.).
- b. Hazardous materials (carcinogenic, corrosives, Beryllium, toxic chemicals, flammable) are prominently identified as such.
- c. Electrostatic sensitive devices are packaged in accordance with applicable ESD specifications.

3.15.3 **SUPPLY CHAIN TRACEABILITY CERTIFICATION:** A Source Certification document shall be submitted with articles controlled by a government qualified Products List (QPL), by Buyers Qualified Source List (QSL), Approved Source List (ASL), or Source/Specification Control Drawing (SCD). This document shall identify the manufacturing source by name, address and will list the corresponding specification number and revision letter. Seller's statement shall provide the information and certification statement as shown in the sample format of Appendix B. Seller's use of a direct reproduction of Appendix B as Seller's certification document will be acceptable to Buyer

3.16 ELECTROSTATIC SENSITIVE DEVICES (ESD) PROTECTION: Where applicable, Seller shall document and implement procedures for the control and protection of Electrostatic Sensitive Devices (ESD) during procurement, receipt, inspection, storage packaging and shipping in accordance with ANSI/ESD S20.20.

3.16.1 Seller's ESD procedures shall provide for a training/certification program (with periodic recertification) with records of employees trained/certified. The program shall cover areas of ESD awareness and proper handling.

3.16.2 Seller shall certify and periodically recertify protected areas and shall periodically monitor protected areas to assure continued ESD effectiveness. Records of periodic recertification/ monitoring shall be documented.

3.16.3 Seller shall provide adequate packaging of ESD devices when not in a protected area. Packaging and shipping containers must be identified with an approved ESD caution label.

3.17 CONTERFEIT PARTS CONTROL PLAN

3.17.1 Seller shall implement a counterfeit parts control plan that documents the methods used to detect, report and disposition suspected counterfeit / unapproved parts. The control plan shall include:

- a. Purchasing - contract/purchase order quality requirements to minimize the risk of being provided counterfeit parts.
 1. Assessment and approval of sources of supply through survey, audit, review of product alerts (e.g. Government-Industry Data Exchange Program (GIDEP), Electronic Resellers Association International (ERAI) and/or evaluation of supplier quality data.
 2. Maintain list of authorized suppliers, including scope of approval.
 3. Specify preference to procure directly from Original Component Manufacturer's (OCM) or authorized suppliers on the authorized supplier list.
 4. Assess and mitigate risk when procuring from sources other than OCM or authorized supplier list.
 5. Specify supply chain traceability to the OCM or contract manufacturer that provides the entire chain of intermediaries from manufacturer to the direct source of supply.
 6. Flow down of applicable requirements of this document to applicable contractors and their sub-contractors.
- b. Verification of purchased product - Examples of verification actions include: review of data deliverables, visual inspection, measurements, non-destructive evaluation and destructive testing (e.g., marking permanency, x-ray, physical analysis, thermal cycling, hermeticity, or burn-in).
- c. Material Control – Documented process to control nonconforming parts to prevent re-entry into supply chain.
- d. Reporting – Documented process to assure that detection of counterfeit parts are reported internally, to customers, government organizations (GIDEP), industry reporting programs (ERAI) and criminal authorities (OMB Policy Letter 91-3).

APPENDIX A

GLOSSARY

APPROVED SUPPLIER: Suppliers that are formally assessed, determined to provide low risk of providing counterfeit parts, and entered on a register of approved suppliers.

AUTHORIZED SUPPLIER: Aftermarket manufacturers as defined above, and OCM authorized sources of supply for a part (i.e., franchised distributors).

FRANCHISED DISTRIBUTOR: A distributor with which the OCM has a contractual agreement to buy, stock, re-package, sell and distribute its product lines. When a distributor does not provide products in this manner, then for the purpose of this document, the distributor is considered an independent distributor for those products. Franchised distributors normally offer the product for sale with full manufacturer flow-through warranty. Franchising contracts may include clauses that provide for the OCM's marketing and technical support inclusive of, but not limited to, failure analysis and corrective action, exclusivity of inventory, and competitive limiters.

INDEPENDENT DISTRIBUTOR: A distributor that purchases new parts with the intention to sell and redistribute them back into the market. Purchased parts may be obtained from original equipment manufacturers (OEMs) or contract manufacturers (typically from excess inventories), or from other independent distributors. Re-sale of the purchased parts (re-distribution) may be to OEMs, contract manufacturers, or other independent distributors. Independent distributors do not have contractual agreements or obligations with OCMs.

STOCKING DISTRIBUTOR: A type of independent distributor that stocks large inventories typically purchased from original equipment manufacturers (OEMs) and contract manufacturers. The handling, chain of custody, and environmental conditions for parts procured from stocking distributors are generally better known than for product bought and supplied by broker distributors.

SUPPLIER: Within the context of this document, a blanket description of all sources of supply for a part (e.g., OCM, franchised distributor, independent distributor, broker distributor, stocking distributor, aftermarket manufacturer, Government Supply Depot).

BROKER DISTRIBUTOR: A type of independent distributor that works in a "Just in Time" (JIT) environment. Customers contact the broker distributor with requirements identifying the part number, quantity, target price, and date required. The broker distributor searches the industry and locates parts that meet the target price and other customer requirements.

ORIGINAL COMPONENT MANUFACTURER (OCM): An organization that designs and/or engineers a part and is pursuing or has obtained the intellectual property rights to that part.

Notes: 1. The part and/or its packaging are typically identified with the OCM's trademark.
2. OCMs may contract out manufacturing and/or distribution of their product.
3. Different OCMs may supply product for the same application or to a common specification.

APPROVED SOURCE LIST (ASL) Approved registry of approved sources of supply,

QUALIFIED SOURCE LIST (QSL) Registry of industry approved sources of supply; OCMs and authorized suppliers,

QUALIFIED PRODUCTS LIST (QPL) Registry of Government/Industry approved sources of supply for industry standard products

**APPENDIX B
SUPPLY CHAIN TRACEABILITY CERTIFICATION**

Manufacturer/Customer Part Number	Customer Purchase Order Number

APPROVED SOURCE

QPL Specification _____ Revision _____

ASL Customer Source Control Drawing (SCD) _____ Revision _____

ASL Customer Specification _____ Revision _____

ASL Customer Item Identification Document (IID) _____ Revision _____

ASL Other _____ Revision _____

NOTE: ASL and QSL are synonymous and may be used interchangeably.

Manufacturer/ OCM	Purchase Order	City	State

Seller certifies that, as required, articles furnished by Seller were procured by Seller from a manufacturer listed in the specified ASL or QPL and such source is noted above.

Seller's Name	Street Address	City	State

Signature Authorized Seller's Representative