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## PURPOSE

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The purpose of the Quality Clauses contained within this instruction is prepared as a means to flow down various quality requirements to Alliance Spacesystems, LLC sub-tier suppliers referred to as Alliance herein. These requirements may include regulatory and statutory requirements.

## SCOPE

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This instruction contains the Quality Clauses to be placed on purchase orders for the procurement of materials, goods, and services.

## APPLICATION

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These clauses apply to Alliance sub-tier suppliers.

This instruction and/or its associated process(s), complies with the AS9100 Quality Management Systems requirements of the standards document section 7.4.2 Purchasing Information.

## REFERENCE DOCUMENTS

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Parent document:

20016835 Procurement Handbook (internal)

Other documents:

20013776 Form, Supplier Temporary Deviation Request Form

20014814 Form, Supplier Notification of Process-Product Change

20014012 Digital Product Definition (DPD) process

20014013 Form, Supplier Digital Product Definition (DPD) Survey

D6-51991 Quality Assurance Standard for Digital Product Definition at Boeing Suppliers

## Quality Clauses

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### Q1 – Certificate of Conformance Required

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Supplier shall provide a certification with each shipment to attest that the parts conform to the Contract/Purchase Order requirements. When other documentation is required, each line item of the certificate shall have an identified and separate package. Certificates shall contain the following:

- Alliance Contract/Purchase Order number
- Line item number from the Contract/Purchase Order
- Part number as identified in the Contract/Purchase order
- Name and address of manufacturing or processing location
- Manufacturer's lot number, heat lot number, batch number, date code, and/or serial number(s), if applicable
- A certification statement stating that all requirements of the drawing, Contract/Purchase Order, and all associated specifications have been met
- A signature and date of a supplier representative
- List of any Alliance approved exceptions

### Q2 – Dimensional Inspection Report Required

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Dimensional inspection reports, of any written format with recorded actual measurements are required for all dimensions and all relevant notes as identified as critical by Alliance, for each individual item unless specifically stated on the purchase order. If no dimensions or notes are identified, than all dimensions and notes are considered critical. Multiple place features are to be reported as a range. All basic dimensions shall be reported with their actual value, but reference dimensions need not be reported.

### Q3 – Material Certifications Required

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Certifications of chemical, physical, mechanical and/or analytical test results are required in accordance with the applicable material specification for each item delivered. Certifications shall include:

- Reference to the specification(s) and revisions as noted.
- Shelf life and temperature sensitive material certifications shall include the storage conditions, maximum shelf life, and out time requirements.
- **ALL MACHINE SHOPS:** Full chain of custody certifications from the mill or manufacturer, through ALL distributors and/or processors to the supplier's facility. Certification packages shall include the following at a minimum (where such activities have occurred):
  - 1) Certificate of Conformance to **YOUR** shop from processor (paint, prime, clean, anodize, etc)
  - 2) Certificate of Conformance from metals distributor to **YOUR** shop.
  - 3) Certificate of Test/Conformance from the mill/manufacturer to **YOUR** distributor
  - 4) Certificate of Conformance from heat treat facility to **YOUR** distributor
  - 5) Certificate of Test/Conformance from third party chemical analysis test facility to **YOUR** distributor
  - 6) Certificate of Test/Conformance from ultrasonic inspection facility to **YOUR** distributor
  - 7) Certificate of Conformance from anneal process facility to **YOUR** distributor

**NOTE: There shall be no lapse in dates of transfer and receipt in chain of custody.**

#### Q4 – Special Process Certifications Required

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Certifications are required for each shipment of items from special processing (i.e. priming, painting, plating, anodize, heat treating, passivation, etc.). Certifications shall include:

- Supplier's name and address
  - If supplying per Boeing specification, supplier must be listed in D1-4426 database <http://active.boeing.com/doingbiz/d14426/index.cfm>
- Alliance purchase order number
- Part number(s)
- Serial number if applicable
- Reference to the process specification and revision
- Lot and/or batch number of the raw materials used as applicable (e.g., primer, paint etc.)
- Objective evidence, shall be available upon request, showing compliance with the applicable specification as required

#### Q5 – Right-Of-Entry

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Alliance, its customers and regulatory agencies reserve the right to examine the supplier's facility as necessary to ensure that quality of work, records, and material are being processed in accordance with contract requirements.

#### Q6A – Final Source Inspection Required

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Final Source inspection is required. Request shall be sent to Alliance Quality Engineering via [qualityengineering@alliancespacesystems.com](mailto:qualityengineering@alliancespacesystems.com) with a copy to the Alliance buyer issuing the Purchase Order no less than 2 working days in advance of the need date. Shipment is authorized only after receiving the Alliance representative's documented approval. All applicable Alliance Source Activity Reports or waiver emails are required to be included in documentation with the shipment.

#### Q6B – Source Inspection Required on First Article Part prior to Production Run

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Source inspection is required on-site at the supplier's facility on the First Article piece prior to production of subsequent parts. Alliance requests no less than 2 working days in advance of the FAI completion date. Requests shall be sent to Alliance Quality Engineering via [qualityengineering@alliancespacesystems.com](mailto:qualityengineering@alliancespacesystems.com) with a copy to the Alliance buyer issuing the Purchase Order. Full production run is then authorized only after receiving the Alliance representative's documented approval. All applicable Alliance Source Activity Reports or waiver emails are required to be included in documentation with the shipment.

#### Q6C – In-Process Source Inspection Required

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In-process source inspection is required and the manufacturing point(s) must be specified by the Purchase Order. Request shall be sent to Alliance Quality Engineering via [qualityengineering@alliancespacesystems.com](mailto:qualityengineering@alliancespacesystems.com) with a copy to the Alliance buyer issuing the Purchase Order no less than 2 working days in advance of the need date. Manufacturing is authorized to continue only after receiving the Alliance representative's documented approval. All applicable Alliance Source Activity Reports or waiver emails are required to be included in documentation with the shipment.

### Q7A – First Article Inspection Required prior to Production Run

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First Article Inspection (All 3 forms in AS9102 format) of all dimensions and notes shall be furnished to Alliance with recorded actual measurements for each part number listed on this purchase order. Multiple place features are to be reported individually each as a separate item on the first article inspection report. No ranges are acceptable. For example a hole called out (5x) must have all five places recorded for size and position with the actuals for all basic dimensions. The exceptions to this multiple place requirement are chamfers, fillet radii and corner radii, in which case ranges will be accepted. All basic dimensions shall be reported with their actual value, but reference dimensions need not be reported.

Reports shall be sent to Alliance Quality Engineering for approval via [qualityengineering@alliancespacesystems.com](mailto:qualityengineering@alliancespacesystems.com). Supplier shall not proceed with the production run(s) without Alliance approval. Approvals should be in the form of an e-mail reply to the supplier's representative.

### Q7B – First Article Inspection Required

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Same as Q7A except:

- 1) No Alliance approval is necessary prior to full production run, &
- 2) All completed reports are to accompany the first shipment of each part number.

### Q8 – Nondestructive Test Certifications Required

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Certifications are required in accordance with the applicable specifications. Certifications shall be included with each shipment. Certifications shall include:

- Reference to the Alliance purchase order number
- Name and address of the company performing NDI/NDT
- Date of inspection
- Reference to the specification and revision
- Inspector/name/stamp and NDI/NDT certification level
- Specification or other requirement defining the NDI/NDT accept/reject criteria
- Material or item identification
- Material or item traceability
- Inspection results

### Q9A – Certificate of Calibration

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Calibration shall be performed using equipment and standards fully traceable to NIST. A certificate of calibration is required which includes actual measured values, a statement of NIST traceability and a signature attesting to the correctness of the results. Calibration supplier shall be certified to ISO17025.

### Q9B – Certificate of Calibration – CMS Equipment

Calibration shall be performed using equipment and standards fully traceable to NIST. A certificate of calibration is required which includes:

1. “As Found” and “As Left” statement of conformance with OEM requirements including:
  - a. Actual measured values, particularly the Equipment Volumetric Measurement Uncertainty
  - b. Acceptance limits / criteria
2. Statement of calibration method used.
3. Statement of calibration of environmental measurement capability, as applicable to equipment type
4. Statement of what adjustments were performed, if applicable
5. Statement of NIST traceability
6. Signature attesting to the correctness of the results

Equipment Type/OEM	Equipment Serial Number	Required Calibration Method	OEM Acceptance Limits
CMM: Hexagon Metrology	0390-160	ASME B89	Repeatability: .024 mm (.000945 in) Volumetric: .110 mm (.00433 in)
CMM: Hexagon Metrology	0615-6115UA	ASME B89	Repeatability: 2.833 $\mu$ m (.000112 in) Volumetric: 9.0 $\mu$ m (.000354 in)
CMM: Mitutoyo	97050005	ASME B89 or ISO 10360-2	Repeatability: TBD Volumetric: TBD
Laser Tracker: FARO ION	Y01001103769	ASME B89	Accuracy: 0.015mm (0.0006 in)
Laser Tracker: API	LTS37801009	ASME B89	Accuracy: $\pm$ 10 $\mu$ m or 5 ppm (.00039 in)
Articulating Arm: FARO	E09-05-12-10687	ASME B89	Single Point: 0.0011 in Volumetric: $\pm$ 0.0016 in

### Q10 – End Item Data Package Required

EIDP is to be furnished with hardware shipment. The data package shall include (when applicable) as a minimum, a certificate of conformance, inspection data, test data, cure charts, and any other process documentation as specified on the purchase order.

### Q11 – Testing

Test results are to be furnished upon completion of the required tests. The report document can be in any format unless otherwise designated on the purchase order. Traceability shall be maintained on all lot(s) throughout processing.

### Q12 – Quality Management System Requirements

Supplier is required to maintain a quality system that complies with the requirements as set forth by Alliance at their time of approval. The supplier is further required to notify Alliance Quality Assurance of any change to the status of their registration, if so registered at the time of approval, change in Quality management personnel, and revisions to their Quality Management System.



### Q13 – NADCAP Accreditation of Special Process Sources

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Suppliers performing special processes, as identified below, shall be accredited by the National Aerospace and Defense Contractors Accreditation Program (NADCAP). Special processes requiring NADCAP accreditation:

- Heat treatment
- Non-destructive testing
- Chemical processes (e.g., chemical milling, chemical conversion coat, anodize, prime, paint)
- Welding
- Brazing
- Shot peening
- Material testing by independent test laboratories

### Q14 – Limited Life and Age Controlled Items

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Based on the specified method of shelf life determination this order requires submittal of date of manufacture when shelf life is based on such, or date of shipment from the manufacture when shelf life is based on date of shipment. Upon shipment, shelf life remaining shall meet the minimum shelf life specified on the purchase order. If no shelf life is specified, 75% of the shelf life shall be remaining on the product at the time of receipt.

### Q15 – Supplier (sub-tier) Process Controls

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The supplier is responsible for maintaining a system to control processes per this purchase order, not only at their facilities, but for the processes performed at lower-tier suppliers' facilities. This clause mandates that all requirements, which are invoked or applied per this purchase order, including this clause, shall be flowed down to sub-tier suppliers.

### Q16 – Electrostatic Discharge (ESD) Protection Program and Packaging

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Supplier shall document and implement an ESD protection program in accordance with ANSI/ESD S20.20, ESD Association Standard for the Development of an Electrostatic Discharge Control Program for protection of Electrical, Electronic, and Electromechanical (EEE) parts, assemblies and equipment. EEE Parts shall be properly packaged and identified as required in ANSI/ESD S20.20. All EEE parts shall be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, etc., for shipment. The packaging must be clearly labeled to indicate that it contains electrostatic sensitive parts and the level of sensitivity, if it is below 100 volts. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive.

### Q17 – Nonconformance Reporting

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The supplier shall upon discovery of a nonconformance to a product or process or within 24 hours of discovering the shipment of nonconforming product, complete an Alliance 20013776, Supplier Temporary Deviation Request and submit it to applicable Alliance Purchasing for disposition. Upon disposition the supplier should receive a copy of the dispositioned Alliance Corrective/Preventive Action Report (CPAR) of which a copy shall be sent with each shipment and referenced on the supplier's Certificate of Conformance. For "use as is" dispositions, the discrepancy shall be shown as nonconforming on the supplier AS9102 First Article Inspection report or on their inspection report with the CPAR number listed in the appropriate area. For rework dispositions, the supplier is required to rework the part to conform to the drawing requirements.

### Q18 – Third Party Material Test Report Required

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Supplier shall send a sample of the material to an independent third party laboratory for analysis. Certifications of chemical, physical, mechanical and/or analytical test results are required in accordance with the applicable material specification for each item delivered. Certifications shall include:

- Testing laboratories name and address
- Reference to the Alliance purchase order number
- Date of testing
- Reference to the specification(s) and revisions as noted.
- Reference to lot number, heat lot number and/or batch number of the raw materials

### Q19 – Prohibited Materials

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The use of zinc, cadmium or pure tin is expressly prohibited. For electrical or electromechanical (EEE) hardware, all tin finishes must be alloyed with a minimum of 3% lead (Pb). Supplier shall submit a certificate with each shipment stating compliance with this clause. Any deviations from this requirement shall be approved by Alliance Quality Assurance in writing prior to acceptance of the purchase order. All metallic hardware is scanned at incoming inspection at Alliance.

### Q20 – Export Control

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The information contained in this document may be controlled by U.S. Export Laws and Regulations. An export license or other legal authorization is required to transfer or re-transfer items or information to foreign persons. An export includes the following: physically transferring items or information, or providing technical assistance or export controlled information to any foreign person, whether the foreign person is located inside or outside the United States.

### Q21 – Quality Records Retention

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Supplier and sub-tier suppliers shall maintain verifiable objective evidence of all inspections and tests performed, results obtained, and dispositions of nonconforming articles. These records shall be clearly associated with the procured supplies, including heat lot number of materials and unit or lot serialization and made available to Alliance, its customer and/or government Representatives upon request. Records shall be retained in a safe, accessible location for a period of ten (10) years after date of delivery. The supplier's records associated with the manufacture of serialized or lot controlled articles will provide for continued traceability of serial number(s) or lot number identification through all phases of manufacture, commencing with raw material and continuing through final acceptance of the end item. Alliance requests a courtesy notification for records scheduled for disposal after the required retention period (10 years).

### Q22 – Packaging, Handling, and Labeling

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The supplier shall provide packaging that maintains the quality of the fabricated item and prevents damage, deterioration, substitution or loss in transit.

The supplier shall label the exterior of the package to ensure adequate identification of the precautions needed to ensure the integrity of the product being shipped. All supporting documentation required to accompany the shipment must be inside the container or one of the containers and the container clearly marked to its containing this documentation.

### Q23 – GIDEP Alert and Problem Advisories

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The supplier shall participate in the Government-Industry Data Exchange Program (GIDEP) per requirements of the GIDEP S0300-BT-PRO-010 and S0300-BU-GYD-010, available from the GIDEP Operations Center, PO Box 8000, Corona, CA 91718-8000. The supplier shall review GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories to determine if they affect the suppliers products/services provided to Alliance. For those that affect the program, the supplier shall take action to eliminate or mitigate any negative effect to an acceptable level. The supplier shall generate the appropriate failure experience data report(s) (GIDEP Alert, GIDEP Safe-Alert, GIDEP Problem Advisory) whenever failed or nonconforming items, available to other buyers, are discovered during the course of the purchase order.

### Q24A – Digital Product Definition (Obsolete)

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The supplier shall adhere to Alliance’s process specification 20014012, Digital Product Definition.

### Q24B – Digital Product Definition at Boeing Suppliers

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The supplier shall adhere to Boeing’s process specification D6-51991, Quality Assurance Standard for Digital Product Definition at Boeing Suppliers. This includes all process controls, sub-tier documents and first article reporting (FAI) requirements.

### Q25 – Changes in Approved Processes or Product

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The supplier shall not change any process or product approved /agreed to from the time of the submission of the quote to throughout the Purchase Order terms, without notification and approval by Alliance.

The supplier shall:

- Notify Alliance of nonconforming product,
    - Obtain Alliance approval for nonconforming product disposition,
  - Notify Alliance of changes to product and/or process, changes of suppliers (including sub-tier), changes of manufacturing facility location and obtain Alliance approval prior to implementation
    - Supplier is to submit 20014814 Form, Supplier Notification of Process-Product Change
  - Flow down to the supply chain the applicable requirements including customer requirements
- Note: All of the above shall occur within 24 hours. Suppliers may negotiate a mutually agreed upon time frame.

### Q26 – Right of Inquiry

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The supplier shall notify all sub-tier suppliers that they must accommodate any and all reasonable inquiries or requests pertaining to the materials and processes supplied in support of the completion of this Alliance purchase order. Including the right to review and request documentation up through the end of the record retention period prescribed on this purchase order.

### Q27 – Product Serialization

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Product must have serialization maintained throughout the manufacturing process. All documentation required must be clearly segregated and identified by serial number.

## Q28 – Material Batches and Lots

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For each part number, all material used shall be from the same heat lot or batch. When this is not achievable Alliance Engineering approval must be obtained in writing.

## Q29 – Suspect Counterfeit Parts

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Supplies furnished to Alliance under this contract shall not include suspect/counterfeit parts nor shall such parts be used in performing any work under this contract whether on or off the facility site.

I. Components and parts shall be procured only through Original Equipment Manufacturers (OEMs)/Original Component Manufacturers (OCMs) or their franchised dealer or distributors.

II. The supplier shall verify the procurement source and associated certifying paperwork.

III. Appropriate incoming inspection test methods shall be used to detect potential counterfeit parts and materials.

IV. The supplier shall flow this requirement down to all sub-tier suppliers to prevent the inadvertent use of counterfeit parts and materials.

V. The supplier shall not use unapproved brokers (any company, person, or entity who is not an OEM/OCM or not an OEM/OCM authorized franchised dealer or distributor) for the purchase of components and parts unless pre-approval has been granted by Alliance.

If suspect/counterfeit parts are furnished under this purchase order and are found in any of the goods delivered hereunder, such items will be impounded by appropriate Alliance personnel. The Seller shall promptly replace such suspect/counterfeit parts with parts acceptable to the Buyer and the Seller shall be liable for any and all costs relating to the removal and replacement of said parts, including without limitation Buyer's external and internal costs of removing such counterfeit parts, of reinserting replacement parts and of any testing necessitated by the reinstallation of Seller's goods after counterfeit parts have been exchanged. Seller shall be fully liable for all such costs, even if such cost might be considered indirect, special or consequential damages. Seller's liability for suspect/counterfeit parts shall not expire until the product is found to be in satisfactory operation after delivery for its implied warranty only if the product is used for non-space application (e.g., ground or airborne). At Buyer's request, Seller shall return any removed counterfeit parts to Buyer in order that Buyer may turn such parts over to its Government customer for further investigation. Seller agrees that any Government or quasi-Government directive, such as a GIDEP alert, DOE, or a directive from Alliance indicating that such parts are counterfeit, shall be deemed definitive evidence that Seller's parts contain counterfeit parts and such reports may be referred to the Department of Justice.

The rights of Alliance in this clause are in addition to any other rights provided by law or under this contract.

**CHANGE LOG**

Revision	Prepared By	Approved By	Change Description	Pages Affected	Issue Date
A	FEV	SVZ	Initial Release	All	08/12/08
B	FEV	SVZ	Total Re-write	All	12/10/09
C	MC	SVZ	Reworded and added Q29	All	2/24/2012
D	MC	SVZ	Q25 revised per Alliance CPAR 4209, replaced all MDA references to Alliance	All	1/30/2013
E	MC	SVZ	Added Q6A, Q6B, Q7A, Q7B; removed req'mt for mandatory notification in Q21; added Q24A, Q24B (DPD req'mt at Boeing Suppliers)	4-5, 7-8	9/3/2015
F	BB	MC	Changed from 20013774 to AP13774. Revised Q6A to designate Final Source Inspection, Added Q6C for In-Process Source Inspection, Changed Q9 to Q9A, Added Q9B for additional calibration requirements for Nadcap equipment	5, 6	11/8/2016
G	BB	TS	Added Table of Contents, Added requirements to Q9B per Nadcap M&I	All	12/8/2016
H	BB	JDD	Updated TOC, Q9A: Added ISO17025 requirement. Q9B: Updated the FARO ION Accuracy ratio to the current OEM specification, Q24A: Obsolete, Q29: Added requirements I-V and removed sample verbiage	7,8, 11, 12	1/31/2017