

1.0 Purpose

To define Insitu's Supplier Quality Requirements for items procured from suppliers by Insitu for use in the manufacture and repair of products.

2.0 Scope

Applies to all suppliers contributing to the product realization process (Goods and Services) based upon approval criteria as required. These requirements are in addition to the standard Insitu Purchase Order Terms & Conditions.

3.0 Definitions

- Certificate of Conformance (CoC) – A document certified by the original manufacturer that the supplied material, part or service was made/delivered and tested in accordance with (IAW) required specifications.
- Reconfiguration – A type of rework to convert an existing article to a new configuration or part number.
- Repair – Action to return an article to serviceable condition. Repairs require a process approved by the design authority, outside of ordinary production, to return the article to a serviceable state.
- Rework – Action to return an article to product definition conformity. Once rework is complete, no non-conformity exists.

4.0 References

4.1 Standards

- ANSI/ESD S20.20 – Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
- AS5553 – Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation, and Disposition
- AS9006 – Deliverable Aerospace Software Supplement for AS9100A
- AS9100 – Quality Management Systems – Requirements for Aviation, Space and Defense Organizations
- AS9102 – Aerospace First Article Inspection Requirement
- AS9103 – Aerospace Series – Quality Management Systems – Variation Management of Key Characteristics
- Federal Acquisition Regulation (FAR) 2.101 – Definitions “Commercially available off-the-shelf (COTS)”
- IPC-A-610 – Acceptability of Electronic Assemblies
- IPC-WHMA-A-620 – Requirements and Acceptance for Cable and Wire Harness
- ISO 9000 – Quality management systems — Fundamentals and vocabulary

- MIL-STD-130 – DoD Standard Practice ID Marking of U.S. Military Property
- NADCAP Certification – National Aerospace and Defense Contractors Accreditation Program) Special Process Certification
- NAS 412 – Foreign Object Damage / Foreign Object Debris (FOD) Prevention

4.2 **Insitu Documents**

- ENI-73-003 – Product Finish Specification
- ENI-73-007 – Part Marking and Serialization
- QAF-00605 – Supplier Nonconforming Material Request Form
- PUI-83-001 – Supplier Request for Nonconforming Material
- QAP-00121 – Supplier Requests for Engineering Assistance (SREA)
- QAP-00491 – Counterfeit Electronic Parts Avoidance Supplier Requirements

NOTE: Insitu documents/forms referenced in this document are available electronically to suppliers. Standards are copyrighted and need to be purchased from the standards organizations by the supplier.

5.0 **Supplier Requirements**

5.1 **General**

- 5.1.1 Suppliers shall ensure that raw materials, parts, assemblies, sub-assemblies and services conform to required specifications outlined in:
- Purchase Orders
 - Contracts
 - Product definitions outlined in drawings, functional product specifications, functional test requirements and any other applicable requirements provided by Insitu's authorized procurement representative.
- 5.1.2 Suppliers shall establish and maintain a documented quality management system (QMS) that is compliant with AS9100.
- 5.1.3 If a system other than AS9100 is used, the QMS shall be fully described in the supplier's proposal and be approved by the Insitu Supplier Quality Manager before issuance of contracts or purchase orders.
- 5.1.4 Fundamentals and vocabulary of the QMS shall be interpreted IAW ISO9000 and FAR 2.101 (COTS definition).
- 5.1.5 Suppliers are responsible for flowing product and quality requirements to their supply base and controlling the quality of materials, parts and services received from their sub-tier suppliers per Insitu requirements.
- 5.1.6 Suppliers shall establish a method to internally review and control nonconforming items and notify Insitu in a timely fashion of nonconformities.

NOTE: "Timely" is defined as hours or days, not weeks or months.

- 5.1.7 Nonconforming disposition decisions of Repair and/or Use-As-Is require approval from Insitu before shipment of the product. Reference item 3 in section 5.3.1 of this document for details.

NOTE: Suppliers are responsible for the quality of all products purchased from sub-tier suppliers, including sources designated by Insitu.

- 5.1.8 Suppliers shall accommodate in a timely fashion requests for on-site audits, on-site source inspections and completion of quality surveys of their QMS by Insitu.
- 5.1.9 When Source Inspection is required by contract or purchase order, the supplier shall notify the Insitu Purchasing Agent five (5) business days before the product is ready for inspection and acceptance.
- 5.1.10 The Supplier shall facilitate the product inspection and acceptance process at their site with Insitu and provide evidence that all product requirements have been met.
- 5.1.11 Where required by contract, U.S. Government Representatives shall be permitted to inspect any and all items at all stages of the production build at the Supplier's facilities or at sub tier supplier facilities.
- 1) Quality control, inspection and manufacturing processes are subject to review, verification and analysis. This includes any regulatory agency that requires access to the supplier's site.
 - 2) Supplier shall give the U.S. Government Representatives the right to make inspections while work is in process.

5.2 Certificate of Conformance Requirements

- 5.2.1 CoC shall contain:

- 1) Statement that the supplied material, part or service was made/delivered and tested IAW required approved specifications and provides for traceability back to the original source for all procured items.

NOTE: Because the NCMR notates exceptions to conformity, the NCMR number is required to be listed on the CoC as part of the statement.

- 2) Supporting documentation of compliance to contract or purchase order requirements
- 3) Calibrated equipment that was used to perform required tests and inspections
- 4) Part number and revision
- 5) Serial Number, Date of Manufacture (DOM), Lot Numbers, or Batch Code as noted on the drawing
- 6) Manufacturer name
- 7) Supplier contact information.
- 8) Signature, title and dated by an authorized representative of the supplier.

- 9) Stated adherence to AS5553 for electronic components/assemblies, when applicable.

5.3 Communications / Notification Requirements

NOTE: Insitu is committed to building strong supplier partnerships. This section provides instructions to suppliers for effectively communicating with Insitu.

Official communications shall be conducted with Insitu's Authorized Procurement Representative. Supplier shall not accept verbal directions to perform work. Only authorized agents from procurement may provide direction regarding potential contracts and/or changes to current procurements.

5.3.1 Supplier Communications

5.3.1.1 Supplier shall notify Insitu of:

- 1) Changes to their QMS and/or their Quality Management representative, and the effective date of the change.
- 2) Changes in their manufacturing process that require a first article inspection and the effective date of the change, e.g. move of equipment, move of manufacturing facility, and change in manufacturing process. Reference AS9102 and section 5.6 of this document.
- 3) Nonconforming product before delivery and shall obtain Insitu's documented approval to ship the material/product using QAF-00605.

NOTE: PUI-83-001 outlines the requirements for submitting an NCMR.

- 4) Nonconforming product detected after delivery.
- 5) Substitutions of materials, parts, testing, software or services. Substitutions are prohibited without prior written approval from Insitu Authorized Procurement Agent. All items shall conform to contract and/or purchase order requirements.
- 6) Counterfeit Item(s) delivered to Insitu. Supplier shall disclose to Authorized Procurement Agent in a timely manner when counterfeit items have been delivered to Insitu. Refer to QAP-00491.

5.3.2 Additional Communication

- 5.3.2.1 Respond to Supplier Corrective Action Request (SCARs) IAW the documented request.
- 5.3.2.2 Supplier may recommend design/process changes to Insitu using the QAP-00121. Approval shall be obtained in writing from Insitu before implementing changes.

5.4 Records

- 5.4.1 Supplier shall maintain all material and product related records required by Insitu for a minimum of four (4) years after final payment.
- 5.4.2 Records are required to identify the product, service, person, dates, and event to which they pertain.

5.4.3 Records shall be readily available for review by Insitu within 24 hrs of request and be stored in a manner to protect them from deterioration, damage and loss.

5.5 Documents

5.5.1 All documents required by Insitu shall accompany the product at the time of delivery. The following documentation shall be placed on the inside of the package and placed with the appropriate lot of material:

- Certificate of Conformance (CoC)
- Documentation proving all inspections and functional testing met specified acceptance criteria
- Repair documentation shall include: the results of an Insitu approved repair procedure including, the description of work complete, part numbers and serial numbers that were repaired, parts removed, parts installed, calibrated tools used, results of testing performed, reference specifications used that approved the work, who performed the work, date of when the work was performed
- Rework documentation shall include: description of work complete, part numbers and serial numbers that were reworked, parts removed, parts installed, calibrated tools used, results of testing performed, reference specifications used that approved the work, who performed the work, date of when the work was performed
- Reconfiguration documentation shall include: all requirements for rework as well as evidence of traceability between the starting configuration and the final configuration (part number and serial numbers before and after reconfiguration)
- Documentation required on purchase orders
- Inspection data for all critical, significant, and key characteristic identified by control plan(s)

5.6 First Article Inspection (FAI)

5.6.1 Suppliers shall use a representative item from the first production run of a new part or assembly to verify that their production processes, production documentation and tooling are capable of producing parts and assemblies that meet Insitu's requirements.

5.6.2 FAIs shall be performed by suppliers on build to print parts to verify that all items conform to Insitu's specifications.

5.6.3 FAI results shall be recorded during the production build process. The completed FAI report shall contain:

- 1) AS9102 forms 1, 2, & 3
- 2) Bubbled Drawing
- 3) CoC, Travelers, Material Certifications
- 4) Approved NCMR if required
- 5) IUID Quality Report for all IUID labels as specified by the drawing

5.6.4 AS9102 forms 1, 2 and 3 shall be used to record and transmit inspection results.

- 5.6.5 Items found to be nonconforming during the FAI process shall follow the NCMR process in item 3, section 5.3.1 of this document.
- 5.6.6 The Pack Slip shall note that an FAI was completed for the part.
- 5.6.7 All First Article Inspection Reports (FAIR) and supporting documents shall be submitted to Insitu via email: fair@insitu.com.

NOTE: Reference AS9102 for additional information on FAI/FAIR requirements.

- 5.6.8 The Supplier shall repeat the FAI process when changes occur that invalidate the original results, e.g., engineering changes, manufacturing process changes, tooling changes, facilities relocations.
- 5.6.9 Suppliers are responsible for flowing down product requirements and managing sub-tier supplier FAIs, FAI records and reporting.
- 5.6.10 Sub-tier supplier FAIRs shall be readily available and delivered to Insitu upon request.

5.7 Workmanship

Workmanship refers to the quality of the product and work performed on the product and shall be interpreted IAW the following:

- 5.7.1 Electrostatic Discharge (ESD): Protect all ESD sensitive products and components IAW ANSI/ESD S20.20.
- 5.7.2 Electrical, Electronic, and Electromechanical (EEE) components and assemblies:
 - Ensure that EEE components are compliant with IPC-A-610.
 - Ensure that EEE components and assemblies comply with AS5553.
 - Suppliers shall have processes to prevent the purchase and use of counterfeit parts.
 - Suppliers shall maintain traceability to the original source of all EEE components and devices including those items in assemblies/subassemblies being delivered to Insitu.
- 5.7.3 Special Processes: Perform special processes IAW NADCAP requirements or other Industry Standards.
- 5.7.4 Cables/Wire Harnesses: Ensure that cables/wire harnesses are compliance with IPC-WHMA-A-620.
- 5.7.5 Part Marking and Serialization: Mark items IAW ENI-73-007.
 - Part marking shall include Insitu part number, Insitu CAGE code, and lot or batch code of the item. Date of Manufacture (DOM) may be used as a lot or batch code.
 - Labels shall be applied in locations identified in the drawing
 - IUID label print quality shall be verified IAW ENI-73-007.

NOTE: Refer to MIL-STD-130 for information on IUID label print quality, grading and verification.

- 5.7.6 Product Finish: Ensure that parts are compliant with ENI-73-003.

5.8 Product Preservation

- 5.8.1 Supplier shall identify product that requires special care and have preservation processes that protect raw material and finished product from damage.
- 5.8.2 Preservation applies to raw materials, component parts, assemblies and services that affect the final product.
- 5.8.3 Suppliers shall have a process for cleaning, prevention, detection and removal of foreign object debris (FOD), special handling of ESD sensitive products and Hazardous Materials (HAZMAT), marking and labeling, and shelf life/stock rotations.
- 5.8.4 FOD prevention shall consider facilities, equipment, tooling and workstations. FOD methods shall focus on the prevention of introduction and detection of foreign objects in finished products and packaging.

NOTE: Refer to NAS 412 for implementing FOD programs.

- 5.8.5 Product and raw material shall be protected from damage during all stages of internal processing and delivery.
- 5.8.6 Supplier shall implement methods of handling product and raw material that prevent damage, deterioration and use of expired materials.
- 5.8.7 Product and raw material in storage shall be assessed at appropriate intervals in order to detect deterioration and prevent the use of damaged or expired materials.

NOTE: Supplier storage should have physical security and control of environmental conditions, e.g., temperature and humidity. Apply adequate first in, first out (FIFO) methods for shelf-life items to prevent use of expired materials.

- 5.8.8 Supplier is responsible for packaging products to assure its proper condition and quality upon delivery to an Insitu-specified destination. Packaging shall not be a source of contamination.
- 5.8.9 Supplier shall place additional labels on the outside of inner packaging material, e.g., bubble wrap and ESD bags, when the serial and/or part number is not visible through packaging material.

NOTE: Refer to ENI-73-007 for label contents and label placement on product.

5.9 Traceability Control

- 5.9.1 Suppliers shall maintain a material/product traceability system that assures traceability to applicable requirements from manuals, procedures, plans, specifications and drawings.
- 5.9.2 A traceability method shall be implemented to track materials and items back to the original source/supplier of all items supplied for use on the product requested on the contract or Purchase Order.
- 5.9.3 Suppliers are responsible for performing and/or ensuring all inspections, tests and calibrations are completed to confirm that the items or services supplied conform to contract or PO requirements. Records of conformance shall be maintained.

- 5.9.4 Commercial Off The Shelf (COTS) items do not have records of conformance. The Supplier CoC shall satisfy the contractual traceability requirement.

NOTE: A CoC is generally located on the packing list for COTS items and points to the catalog cut sheet that includes manufacturer specifications, material, hardness, finish, etc.

6.0 Revision History

Document Revision History		
Rev	Description	Author
9	Complete rewrite of requirements to streamline document. Include references to industry standards.	Dan Gardner, Ellen Shimada, Susan Baker, David Ooms, Patti Sherwin
10	Update to reduce paperwork that accompanies product, added CoC definition and reference to AS5553 counterfeit parts	Dan Gardner, Patti Sherwin, Susan Baker, Ellen Shimada, Wendy Viehmann
11	Added use of PUF-73-002 Supplier Request for NCM form in sec 5.4.5 and approval for SREA in sec 5.4.9.	Patti Sherwin
12	Included reference to PUI-83-001 Supplier request for NCM work instruction in sec 5.4.5 and changed document number PUF-73-002 to PUF-83-001. 5.7 Updated section to include reference to AS9102. 5.9 Updated, expanded requirements for product preservation.	Audrey Dickenson, Susan Baker, Patti Sherwin
13	Added FAI requirement for facilities relocations, and Sub-Tier FAI report management.	Patti Sherwin
14	Updated sec 5.3.3 NCM, 5.3.5 added Source Inspection, 5.5.2.5 Substitute parts, 5.5.2.6 Counterfeit parts, 5.6.1 change record retention from 3 yr to 4 yr, added new, 5.8 FAI to detail supplier requirements for FAI processing, new sections 5.8.2~5.8.6, 5.10.2 added FO, 5.11 added Traceability	Patti Sherwin, Mike Gillette
15	Updated Section 5.7.1 added documentation requirements for rework and reconfiguration. Added definitions of rework, repair, and reconfiguration in section 4.0. 4.5 Removed	Ray Culbertson
16	Updated reworked and repaired section 5.7.1 and updated NCMR requirements and added NOTE in section 5.4 Updated rev number. Updated formatting, updated all external document titles and uploaded most current versions to External Document Library; alphabetized Standards, Insitu Documents, and Definitions. Updates post publishing: Removed date column in rev history table.	Dan Gardner, Doc Control
17	Updated the Scope of the Document; clarification on supplier criteria Updated formatting; Added reference to PUP-74-013 to section 5.3.1.6.	Sara Manley, Doc Control
18	Updated rev number; accepted all changes from Rev 17; updated PUP-73-001 to QAP-00121 and PUF-73-001 to QAF-00122 (doc number updates) Added Date of Manufacture (DOM) to section 5.2.1 #5, added Note to 5.7.5 regarding part mark.	Doc Control, Sara Manley

Document Revision History		
Rev	Description	Author
19	Annual review. Updated rev number. Updated logo. Removed referenced document titles from body of document. Corrected cross-references. Minor verbiage updates. Defined previously undefined acronyms.	Doc Control
20	Replaced references to QAP-00121 to PUP-73-001 (document has not yet published with updated document number). Updated PUF-83-001 to QAF-00605 and updated title of QAF-00605.	Document Mgmt.
21	Added MIL-STD-130 reference	Patti Sherwin
22	Document format was updated and SmartDocs tags applied; for previous major revisions see the superseded previous version (or contact Document Management for assistance). All metadata and ownership updated and verified during DMS migration.	Document Mgmt.