Supplier Quality Requirements

QAQ-82-001

Rev 8

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1.0 Purpose and Scope

1.1 Purpose: Insitu is committed to building strong supplier partnerships. This manual provides instructions and guidance for suppliers to be able to deliver product and services compliant to Insitu drawings and or specifications.

This document is to ensure that Insitu suppliers shall have a documented quality management system (QMS) in place composed of quality management plans and processes that assures drawing and specification compliant products and services are delivered and performed to Insitu requirements. Additionally, it is to provide a means for suppliers to request authorization for changes to existing Insitu requirements.

These requirements may be in *addition to* the standard Insitu Purchase Order Terms & Conditions.

1.2 Scope: This document applies to Insitu, and Insitu suppliers and subcontractors that are subcontract manufacturers or fabricators and/or laborers (all definitions hereinafter referred to as “suppliers”) that provide non-Commodity product or services to Insitu that is intended for sale or lease to an Insitu customer.

2.0 Definitions

2.1 Bubble: A circled or boxed character that identifies a characteristic which corresponds with an item number on the First Article Inspection Report (FAIR).

2.2 Certificate of Conformity (CoC): A certificate stating a product purchased by Insitu, when shipped by the supplier, meets documented requirements.

2.3 Commodity Item: Hardware (e.g. nuts, bolts. screws, batteries. etc) or software that are not made specifically for Insitu or Insitu suppliers, are commercially available to the general public, and require no modification by Insitu or Insitu suppliers

2.4 Components Conformity Report: An index listing sub-tier level FAIRs stored either at Insitu or at the supplier. This Index shall be submitted with the FAI Report from the supplier

2.5 Conformity: The fulfillment of all requirements.

2.6 Contract Fabricators: Suppliers that perform processes to Insitu defined requirements that will be part of final assemblies. This includes but is not limited to manufacturers of composite materials, metal fabrications, electronic subassemblies and custom packaging materials.

2.7 Contract Manufacturers: Suppliers that perform final and sub assemblies that go into or are used by Insitu's products. This includes, but is not limited to, final wing and winglet assemblies, final avionics unit, final engine assembly, launcher, retriever, final ground control unit assemblies, and finished carrying cases

2.8 Control Plan: A management tool to identify and monitor the activity required to control the critical or key inputs/outputs for a process so the process will continually meet its product or service requirements. It includes an inspection plan/rate/method and reaction plans for potential defects.

2.9 Critical Product Characteristic(CPC ▷): Those product characteristics that if not controlled within the specified limits, may have an unacceptable affect to form, fit, function, safety, performance, agency approvals, or any governmental regulations.

2.10 Critical to Quality (CTQ): Those product or process characteristics identified as CPC,SPC, Critical Items, or Key Characteristics. CTQ characteristics mandate quality or control plan use to assure CTQ's are delivered.

2.11 Critical Items: Those items (e.g., functions, parts, software, characteristics, processes) having significant effect on the product realization and use of the product; including safety, performance, form, fit, function, producibility, service life, etc.; that require specific actions to ensure they are adequately managed. Examples of critical items include safety critical items, fracture critical items, mission critical items, key characteristics, etc.

2.12 ESD: Electrostatic discharge

2.13 First Article Inspection: The initial inspection to the first production part. It is the source of data for a First Article Inspection Report.

2.14 First Article Inspection Report (FAIR): Is the initial inspection report that is to accompany the first production parts. The FAIR is used as the means to verify the capability of a production process to manufacture a product that meets all drawing requirements and functional product specifications.

2.15 Gage Repeatability and Reproducibility (GR&R): A statistical tool that measures the amount of variation in the measurement system arising from the measurement device and the people taking the measurement.

2.16 Key Characteristic: An attribute or feature whose variation has a significant effect on product fit, form, function, performance, service life or producibility, which requires specific actions for the purpose of controlling variation.

2.17 Non-commodity item: Systems, subsystems or components specifically designed or adapted for use in Insitu products or as an Insitu product. Examples: unmanned aerial systems, avionics modules, payloads, training/simulation devices, wings, cameras, engines, igniters, controls, wiring harnesses, etc.

2.18 Product Characteristics: Drawing or specification entities such as dimensions, tolerances, assembly interfaces, surface contours or shapes, materials,

requirements for materials that would be an exception to an identified material specification, processes, surface preparations, etc.

2.19 Part Number: Configuration control of product definition is maintained by both part number and revision level controls. Insitu designed products must be identified with both part number and revision level which is considered the part number..

2.20 Significant Product Characteristic (SPC ◇): Those product characteristics that if not controlled within specified limits will negatively affect form, fit, function, safety, performance, flight worthiness (as applicable), agency approvals, or any governmental regulations

2.21 Site Quality Acceptance Rate: A calculated rating defined as the minimum of either:

1) The ratio of the number of non-compliant parts divided by the total number of parts received by Insitu in 3 consecutive calendar months. Example:

   3 Parts rejected in a quarter

   100 parts received during a quarter

   3% Rejection Rate

   - Or -

2) The number of lots received with defective parts, divided by the total number of lots received, in 3 consecutive calendar months. Example:

   10 Lots received with defective parts

   100 Lots received

   10% Rejection Rate

2.22 SM&P: Insitu Supplier Management and Purchasing

2.23 Special Requirements: Those requirements identified by the customer, or determined by the organization, which have high risks to being achieved, thus requiring their inclusion in the risk management process. Factors used in the determination of special requirements include product or process complexity, past experience and product or process maturity. Examples of special requirements include performance requirements imposed by the customer that are at the limit of the industry's capability, or requirements determined by the organization to be at the limit of its technical or process capabilities.

2.24 Traceability: Ability to trace the history, application or location of that which is under consideration, for origin of material and parts, processing history, and distribution and location of product after delivery..

3.0 References

3.1 ENI-73-007 - Part Marking and Serialization Standard

3.2 QAF-82-005 First Article Inspection Forms

3.3 PUP-73-001- Supplier Requests for Engineering Approval (SREA)

3.4 QAF-82-008 – Design and Process FMEA Template

3.5 SAE J1739 Jan2009 copyright © 2009 SAE International (FMEA Standard)

NOTE: Forms referenced in this procedure may be used by the supplier. Any Insitu document referenced in this procedure will be made available electronically to our suppliers by emailing a request to procurement@insitu.com. SAE documents may be purchased from SAE directly.

4.0 Requirements for Insitu to support Insitu Supplier Quality Management

4.1 Provide input for supplier qualification and on-going quality-performance monitoring.

4.2 Issue Supplier Corrective Action Requests (SCAR) when required**.**

4.3 Accept/reject SCAR responses.

4.4 Identify and analyze quality data.

4.5 Maintain records of supplier quality performance, and conduct monitoring including non-conforming material reports via the Insitu on-line system and Supplier Corrective Action Request (SCAR).

4.6 Collaborate with SM&P to review supplier quality performance. Include in the periodic supplier performance reports as part of the management review process.

4.7 Reviews all FAIR's and notify Insitu SM&P, and Insitu Engineering of any specifications or dimensions that are not met on the FAI submission.

4.8 Communicate with suppliers using Insitu SM&P as the single point of contact for all official Insitu communications with suppliers. No contractual commitments are to be made with suppliers outside Insitu SM&P channels

- 4.8.1 Insitu SM&P will request the FAI by purchase order.
- 4.8.2 The Insitu SM&P contact shall ensure that a copy of the electronically submitted FAIR be sent to fair@insitu.com for review.
- 4.8.3 If supplier submits a FAI without an Insitu Purchase Order, the report will be considered a preliminary report until Insitu issues a Purchase Order for the FAI.

4.9 Perform Second Party QMS and product process/quality assessment of suppliers.

4.10 Provide suppliers with revised Insitu contract language to require:

- 4.10.1 Level 1 suppliers and selected level 2 suppliers will operate a documented QMS composed of quality management plans and processes that demonstrates provision of systematic Quality Assurance covering all products the supplier provides to Insitu.
- 4.10.2 Batch delivery with lot identification and traceability when required
- 4.10.3 On site supplier support to resolve quality issues and/or reimbursement for Insitu QC, when sample inspection identifies a containment gap in the supplier pre-delivery/QA requiring Insitu QC

4.11 Receive products requiring a CoC, only when the CoC is provided by the supplier and linked to the product governed by the CoC.

4.12 Provide suppliers with adequate product definition to support supplier pre-delivery inspection/QA

5.0 General Supplier Requirements

For all products produced to Insitu supplied or approved requirements, Insitu suppliers shall:

5.1 Comply with Insitu drawings, specifications and requirements and contractual requirements. Insitu requirements take precedence in the following order:

1) Insitu Purchase order or Contract
2) Referenced Insitu provided product definition, e.g. drawings and specifications
3) Industry Specifications not listed
4) Supplier Specifications e.g. a spec sheet

5.2 Provide CoCs for all Insitu purchased non-commodity product used for sale or service. The CoC shall include certification of conformity to documented requirements, CoCs may include but are not limited to BOM, material, processing, inspection, calibration, testing results, and traceability.

5.3 Establish and maintain a documented Quality Management System. Level 1 suppliers, and Level 2 Suppliers as designated by SM&P, shall operate a documented QMS composed of quality management plans and processes that demonstrates provision of systematic Quality Assurance covering all the products the supplier provides to Insitu. Minimum documentation requirements are:

1) Personnel organization, job descriptions, qualifications and training
2) Purchase order / contract review
3) Document and data control(Configuration Management)
4) Product identification and traceability
5) Customer property safeguarding and identification
6) Process control
7) Product quality assurance/control, inspection and testing
8) Production Process Verification
9) Verification of Purchased Product process
10) Internal quality metrics supporting systematic quality improvement.
11) Control of monitoring and measuring equipment
12) Control of nonconforming product
13) Corrective and preventive action
14) Storage, handling and packaging

5.4 Insitu reserves the right to audit a supplier's quality management system upon request.

5.5 Notify Insitu of any change to their quality management system and/or their Quality Management representative, and the effective date of the change.

5.6 Notify Insitu of any change requiring a First Article Inspection, and the effective date of the change.

5.7 Provide Insitu, within 30-calendar days of initial receipt of the requirement listed in Paragraph: 5.6, an implementation plan for product conformity that is acceptable to Insitu. When specifically requested by Insitu, the supplier will make specified quality data and or approved design data available in the English Language.

5.8 Implement a pre-delivery quality assurance system for all product delivered to Insitu. This is to provide assurance that delivered product will be in conformity with all contractual, product definition, industry and supplier specifications.

5.9 Provide Insitu with on-site supplier support to resolve quality issues and/or reimbursement to Insitu for quality containment, when sample inspection identifies a containment gap in the supplier pre-delivery/QA requiring Insitu QC.

6.0 Records and Documents

Insitu suppliers shall:

6.1 Retain and keep available for review at the supplier's facility all documentation generated as a result of this specification for a minimum of three (3) years from the date of delivery to Insitu unless stated otherwise in the T&Cs of the contract.

6.2 Transfer ownership of all records, if the supplier ceases to deliver product or services to Insitu within the three (3) year period, unless stated otherwise in the T&Cs of the contract. Insitu may request possession of said documents.

6.3 Maintain records.

6.3.1 Records shall include the following:

1) *Who* completed the baseline documentation
2) *Date* the record was made
3) *Who* made additions or corrections and *the date* they were made
4) Rationale for the change if not evident. Additional documentation is recommended for explanation to explain the change. A note to the side or memo to the file may serve this purpose.
5) Legible Handwritten entries recorded in ink. Any correction shall be crossed out with a single line, initialed and dated with current date. This is so the original entry is not obscured
6) All fields completed, if a field is not applicable use "N/A" or give a reason for leaving the field blank.

6.3.2 Non-acceptable record keeping practices:

1) *Additions to source documents that are not initialed or signed and dated.*
2) *Write-overs of the original entry*
3) *Correction fluid (white-out)*
4) *Pencil*
5) *Blank spaces*

7.0 'Supplier Qualification for Quality' Requirements

The supplier shall establish and maintain a Quality Management System acceptable to Insitu.

7.1 To become quality qualified as an Insitu supplier, the supplier shall have an established and maintained quality management system (QMS) acceptable to Insitu for the product purchased under an Insitu contract.

7.2 To maintain a quality qualification as an Insitu supplier, the supplier shall:

1) *Continue to meet the criteria listed in paragraph 5.3 above*
2) *Maintain a 98% site quality acceptance rate as calculated in paragraph 2.1*
3) *Promptly notify Insitu of any violation of or deviation from Supplier's approved inspection/quality management system and to advise Insitu of the quantity and specific identity of any product delivered to Insitu during the period of any such violation or deviation.*

7.3 Failure to comply with paragraph 7.1 & 7.2 above may cause a supplier to be placed on probation or be removed from the authorized suppliers list

7.3.1 Suppliers that are in a quality probation status may be required to:

1) Provide a plan acceptable to Insitu, within 30 days of notification of being in quality probation, that when achieved, will bring the supplier into a qualified status.
2) Perform 100% inspection and provide inspection documentation on 100% of the supplier's product delivered to Insitu.

8.0 Process Control

8.1 Suppliers shall develop and maintain effective methods of quality assurance. A control plan and documented work instructions are the minimum requirement.

8.2 Insitu templates for control plan and failure mode and effects analysis (FMEA) forms are available to suppliers by sending a request to Procurement@insitu.com for:

QAF-82-005 First Article Inspection Forms - *Control Plan*

QAF-82-008 *Design and Process FMEA Template*

The FMEA standard is in SAE J1739 Jan2009

8.3 Other recommended methods of control include documented: production travelers or routers, control charts, the use of fixtures, and numerically controlled equipment.

8.4 Where the supplier uses material with limited shelf-life control, a method for ensuring that the material has not exceeded the recommended shelf life prior to use is required.

8.5 When Insitu requires specific methods of production process control due to the critical nature of the process or product, these requirements will be stated on Insitu engineering drawings and specifications and shall be addressed in the written work instructions used by the supplier and the supplier control plan.

9.0 Inspection and Testing

9.1 Incoming Inspection

9.1.1 Suppliers are responsible for the performance of an inspection prior to performing release of components/material for further processing or assembly. This inspection is to include verification that quantities/part descriptions match and that there is no damage or non-conformities. Suppliers shall verify that any required certifications, test reports and sub-tier FAIs are included.

9.1.2 Suppliers are fully responsible for controlling the quality of their suppliers (sub-tier) of subcontracted materials and processes. Suppliers shall declare to Insitu their QMS flow down for their sub-tier suppliers.

Note: **Insitu-supplied items:** For damage, non-conformities or paperwork discrepancies, the supplier shall notify Insitu Quality within three (3) working days of discovery by contacting the Insitu Supplier Manager. The Insitu Material Review Board will determine what action is required.

9.1.3 If during the latest period of performance with actual work awarded by Insitu, the supplier fails to achieve and maintain 98% site quality acceptance rate, they may become subject to additional requirements as directed by Insitu:

1) Required source inspection from an Insitu qualified subcontractor at the supplier's expense.

2) Reimbursement to Insitu for reasonable Insitu costs incurred at the point of manufacturer (i.e. supplier site) to verify product conformity, including reasonable labor and transportation costs to Insitu.
3) Reimbursement to Insitu for reasonable Insitu costs incurred at the point of receipt to verify product conformity.
4) Reimbursement to Insitu for additional Insitu labor required to make the hardware acceptable for Insitu's use.

10.0 First Article Inspection (FAI)

10.1 For Supplier manufactured designs: systems, sub-systems or components (build to print items), the Supplier shall perform First Article Inspections and submit results, linked to the inspected first article, to Insitu for review and approval.

10.2 Insitu suppliers, who purchase non-commodity parts with Insitu part numbers, are responsible for providing First Articles with FAIRs from their sub-tier suppliers

10.3 The supplier shall perform a FAI prior to release of product to verify that all dimensions (excluding Reference and Basic dimensions), features, notes and product attributes meet specified requirements. Documentation of first article inspection (First Article Inspection Report - FAIR) and the First Article part or assembly shall be submitted for review and approval by Insitu Quality prior to Insitu accepting the first production shipment.

NOTE: *Optional Review*

1) The Supplier may submit for pre-review, a FAIR, to fair@insitu.com. This may be done prior to submitting the First Article.

2) Insitu Quality may pre-review the FAIR for completeness and accuracy and report the results to the Supplier through the appropriate SM&P channels.

3) The Supplier may collaborate with Insitu to develop a corrective action plan for those characteristics found to be non-conforming and subsequently rejected.

10.4 If multiple parts are shipped with the FAI part, the FAI part shall be clearly marked for identification.

10.5 First article inspection shall be performed from the first production run of a new part or following any subsequent change that invalidates the previous first article inspection result:

1) The part is being introduced into production for the first time as a result of a new product development.
2) The part is being sourced from a new supplier.

3) The part manufacturing location has changed.
4) In the judgment of Insitu Engineering or Quality, changes have been made to the manufacturing process/work instructions that could affect product conformity.
5) Part changes have been made to features or characteristics identified by Insitu on the released drawings or specifications, as “Critical to Quality”.
6) The part has been released at a new revision level.
7) There has been a material change (e.g. as a result of a cost reduction, warranty reduction or producibility improvement effort).
8) The part has not been manufactured in it’s current site for two or more years.
9) As requested by Insitu.

10.6 On existing parts, a partial FAI may be acceptable to Insitu and if stated on the purchase order.

10.7 Templates for first article inspection forms are available to suppliers by sending a request to Procurement@insitu.com for: QAF-82-005 First Article Inspection Forms

10.8 The supplier may use the above forms, the AS9102 FAIR form, a modified version, or use its own equivalent documents. Any modified form or supplier form, shall meet Insitu’s needs and provide the all the data required to fill in QAF-82-005.

10.9 FAIR documentation shall include:

1) Part number and revision level
2) Insitu Part description
3) Part serial number, if applicable
4) Product definition used for the inspection
5) Characteristic number (bubble) – a unique number for each requirement (e.g. design characteristic, drawing note, etc.)
6) Bubbled product definition
7) Reference location (e.g. drawing zone, page number and section, specification, paragraph number, etc.)
8) Requirement of the design characteristics including tolerances if applicable
9) Measured results for all design requirements and specifications
10) Identification of acceptance or non-conformity of each bubbled characteristic
11) Type, identification and qualification (calibration date and/or certification traceable to NIST) of measurement equipment used for each measurable bubbled characteristic
12) Who measured each bubbled characteristic Date each bubbled characteristic was measured
13) CoC and/or Material Analysis Report for materials and/or

unique processes required.

14) The Control Plan that documents the supplier's plan to assure that all CTQs, critical items, and key characteristics are met

15) The results of the measurement studies/Gage R&Rs that validate the measured results on all the CTQs. (Form QAF-82-005 – First Article Inspections Forms - Gage R&R template may be used)

NOTE: Complete all fields in the record, if a field is Not Applicable use "N⁄A" or give a reason for leaving the field blank.

10.9.1 First article characteristics found to be nonconforming are to be handled per paragraph **14**

10.10 Supplier Sub-tier First Article Responsibilities

10.10.1 Insitu suppliers, who purchase parts with Insitu part numbers, are responsible for implementing a First Article Inspection system for their sub-tier suppliers.

10.10.2 Insitu suppliers shall provide the data listed in paragraph 10.9 above, traceable to the First Article.

10.10.3 Sub-tier First Article Inspection Reports (FAIR) along with proof of Supplier part verification shall be submitted in electronic, non-editable, read-only format to Insitu fair@insitu.com. The Top Level FAIR and the sub-tier FAIRs shall be kept on file at the Supplier's site and available within one business day for audit by Insitu whenever requested.

10.10.4 The Supplier shall be able to produce a copy of the FAIR and verification and provide it to Insitu within 1 business day of request.

10.10.5 The Supplier shall provide a listing of all sub-component FAIRs by submitting a CCR (QAF-82-005 First Article Inspection Report Forms) or equivalent list of sub-tier supplier FAIRs kept on file at the supplier's facility with the FAIR.

NOTE: Optional Review

1) The Supplier may submit a sub-tier supplier FAIR to Insitu Quality at fair@insitu.com for review prior to submitting the First Article parts.

2) Insitu Quality will review the FAIR for completeness and accuracy and report the results to the Supplier through the appropriate channels.

11.0 In-Process Inspection

11.1 Once approved for production, the supplier shall monitor, at a minimum, all features in the provided Quality Assurance Instructions/standards or features identified as Critical, Significant, Required, or Desired Product Characteristics on the drawings, functional product specifications, or production work

instructions.. The supplier shall maintain appropriate process control and pre-delivery inspection to assure that all products provided to Insitu meets contractual requirements. QAF-82-005 – First Article Inspection Report Forms - Control Plan is recommended as a form for use to document the in process quality inspection process.

11.1.1 When sampling inspection is used by the supplier, the sampling inspection plans shall be statistically valid and preclude the acceptance of lots whose samples have known nonconformities. See Appendix A for an approved sampling plan. Sampling AQL shall be a minimum of 2.5.

11.1.2 Should the supplier use a different sampling plan than supplied in Appendix A, the sampling plan shall meet the minimum requirements listed above.

12.0 Inspection Records

Inspection documentation shall include:

1) PO number with revision number from the drawing or specification as specified in the PO.
2) Insitu Part number(s) /Drawing number with revision level, as applicable
3) Number of parts inspected.
4) Dimension or attribute being inspected.
5) Criteria for acceptance and/or rejection.
6) A record of the measurement/inspection result.
7) Type and identification of measurement instruments used (tool numbers are acceptable in lieu of description of the tools).
8) Calibration date and/or certification traceable to NIST of measurement instrument
9) Name of the inspector performing the inspection and date of the inspection.
10) *See paragraph 10.0 for specific requirements for FAI's.*

13.0 Manufacturer's/Supplier's Certificate of Conformity (CoC)

CoCs shall contain the following information (Suggested form is in QAF-82-005 FAI Forms – Cover Sheet):

1) Name and address of manufacturer.
2) Insitu PO and/or Subcontract number.
3) Statement attesting that goods and services conform to all PO/Contract, and associated product requirements and specifications.
4) Part number(s) and revision(s), as applicable.
5) Product definition identification with revision level to which goods were manufactured (e.g. Drawing number and revision level; FPS number and revision level).
6) Chemical analysis and mechanical properties, for required material CoCs.

7) Quantity, type of process and what specification used, for required process CoCs.
8) Quantity, serial numbers, type of test, results, specification used, for required test CoCs.
9) Authorized signature & date

14.0 Supplier Non-Conformities and Deviations on Production Product

14.1 Supplier non-conformities found due to a supplier error are handled per Insitu's Non-Conforming Product Procedure

14.2 When Insitu notifies supplier of a detected non-conformity, the supplier shall immediately take action to eliminate the non-conformity on all products in the supplier's control. The supplier shall also maintain on file verification that root cause corrective action has occurred and has resolved the subject condition. At the specific request of Insitu, this verification shall occur for the next five (5) shipments after implementation of the corrective action to ensure detected non-conformity has been eliminated. Insitu reserves the right to review the verification data at the supplier's facility or have the data submitted to Insitu.

14.3 Supplier Corrective Action Request (SCAR): An evaluation is made to determine the extent and impact of the non-conformity. This is based on the risk to final product quality, delivery schedules and financial impact. Insitu may determine if a formal Supplier Corrective Action request is required. If required, the Supplier Corrective Action Request will be issued to the supplier

14.4 The supplier shall submit to Insitu a deviation and delivery request for any known non-conformity. The deviation shall be approved and authorization granted by an amendment to the applicable Insitu purchase order. Non-conforming material shall be clearly identified and segregated to prevent unintended use.

The supplier shall have written approval from Insitu SMP (i.e.: a PO amendment, CID, ECN, fax, e-mail) for the deviation by Insitu <u>prior to shipment.</u>

15.0 Supplier Corrective Action Request Response Requirements

15.1 The supplier shall, when requested, provide Insitu a response within fifteen (15) days of receipt of the request unless an extension is otherwise provided by Insitu. Any response submitted to Insitu shall be in the format specified by Insitu. If after submittal to Insitu, the supplier determines need for revision, the supplier shall immediately notify Insitu of such revision. In the event the supplier is unable to respond within the allotted fifteen day time frame, the supplier shall submit a request for an extension which shall include the reason

for the extension request and the time needed to complete the corrective action report.

15.2 Supplier responses to the SCAR shall identify:

1) The root cause of the non-conformity
2) The identification of the lot/serial numbers/etc. of non-conforming parts
3) The change in the supplier Control Plan that will eliminate the non-conformity in the future
4) The date the corrective action has been incorporated, and the first date the corrected material will be received at Insitu

15.3 Insitu reserves the right to reject any root cause and/or corrective action determination provided by the supplier, and may request subsequent investigation and/or corrective action to either Insitu or the Supplier initiated corrective action requests. If the supplier is late in responding to corrective action requests by Insitu, as determined by Insitu, or if Insitu requires subsequent corrective action, Insitu reserves the right to withhold acceptance of shipments either at their source, or destination until the supplier corrective action is accepted by Insitu.

16.0 Quality Metrics and Reporting

When requested the supplier shall collaborate with Insitu to develop and implement processes designed to improve the supplier's quality performance. Process metrics shall be developed for these improvements to demonstrate supplier progress.

17.0 Supplier Recommendations

17.1 Suppliers are encouraged to partner with Insitu to make recommendations to material, design or processing changes that could benefit Insitu in the form of cost, lead-time reductions or product improvement during the design and development phases.

17.2 PUP-73-001 - Supplier Requests for Engineering Approval (SREA), provides instructions for submitting a SREA.

17.3 Once product is released for production, an Insitu-approved SREA is required prior to the supplier's implementation of a supplier-requested change.

The supplier shall have written approval from Insitu SMP (i.e.: a PO amendment, CID, ECN, fax, e-mail) for the SREA prior to shipment.

18.0 Workmanship Requirements

Components, materials and assemblies shipped to Insitu or other Insitu suppliers for final assembly and packaging shall be free of:

1) Metal or fiber shavings, sharp edges or burrs, unless otherwise specified.
1) Evidence of de-lamination or dry weave in composite material
2) Visible voids that cannot be cosmetically repaired by subsequent operations.
3) Foreign objects.

19.0 ESD Protection

Insitu suppliers are required to provide ESD protection and packaging identification of ESD sensitive product, while it is being produced and in custody of the supplier. Accompanying paperwork shall be outside the ESD protective packaging.

All electrostatic discharge (ESD) sensitive products shall be wrapped individually in ESD protective bubble wrap or ESD protective bags prior to boxing. Apply identification label to the outside of the package.

20.0 Packaging & Labeling Requirements

20.1 Components, materials and assemblies shipped to Insitu or other Insitu suppliers for final assembly and packaging shall be:.

1) Packaged in a manner to prevent any sliding, distortion, bending, or other damage during transit.
2) Easily identified by part or assembly number clearly labeled on the packaging and additionally on the parts as identified on the part specification.
3) Part marking for new designs shall conform to ENI-73-007 (Part Marking and Serialization Standard).

20.2 The supplier shall provide protective packaging that precludes shipping damage

20.2.1 Open-cell foam shapes, closed-cell foam shapes, cardboard spacers and bubble wrap should be used to best suit the particular configuration and critical nature of the item to be shipped. Use of shrink-wrap, pallets and other containers suitable to the product being shipped is recommended.

20.3 Unless specified, recycled boxes or other suitable shipping containers may be used. The supplier shall ensure that no prior identification labels remain on the container that may conflict with the actual contents

20.4 The supplier shall ensure that only Insitu-authorized markings are present on packaging.

20.5 Shipping documents and product labeling shall provide for clear identification of contents, including purchase order number, part numbers, revisions and serial numbers. The use of unique identifiers on product labeling, such as bar coding, is encouraged for all shipments to Insitu.

20.6 Documents (packing list, MSDS, inspection sheets, etc) attached to the outside of the container shall be attached to allow damage-free removal.

Appendix A:

C=0 SAMPLING PLANS
INDEX VALUES
(ASSOCIATED AQLS)

From*: Zero Acceptance Number Sampling Plans*, 4th edition by Nicholas L. Squeglia

Note: The acceptance number in all cases is ZERO nonconforming parts.

AQL⇨	.010	.015	.025	.040	.065	.10	.15	.25	.40	.65	1.0	1.5	2.5	4.0	6.5	10.0
LOT SIZE																
2 to 8	*	*	*	*	*	*	*	*	*	*	*	*	5	3	2	2
9 to 15	*	*	*	*	*	*	*	*	*	*	13	8	5	3	2	2
16 to 25	*	*	*	*	*	*	*	*	*	20	13	8	5	3	2	2
26 to 50	*	*	*	*	*	*	*	*	32	20	13	8	5	5	5	3
51 to 90	*	*	*	*	*	*	80	50	32	20	13	8	7	6	5	4
91 to 150	*	*	*	*	*	125	80	50	32	20	13	12	11	7	6	5
151 to 280	*	*	*	*	200	125	80	50	32	20	20	19	13	10	7	6
281 to 500	*	*	*	315	200	125	80	50	48	47	29	21	16	11	9	7
501 to 1200	*	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8
1201 to 3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9
3201 to 10,000	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9
10,001 to 35,000	1250	800	500	315	300	294	189	135	108	77	60	46	35	29	15	9
35,001 to 150,000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9
150,001 to 500,000	1250	800	750	715	476	345	270	200	156	119	90	64	40	29	15	9
500,001 and over	1250	1200	1112	715	556	435	303	244	189	143	102	64	40	29	15	9

*Indicates entire lot shall be inspected

SMALL LOT SIZE SUPPLEMENT

(ASSOCIATED AQLS)

(Use for small lots when the associated AQL values are 1.5 and below)

LOT SIZE	.25	.4	.65	1.0	1.5
5-10	*	*	*	8	5
11-15	*	*	11	8	5
16-20	*	16	12	9	6
21-25	22	17	13	10	6
26-30	25	20	16	11	7
31-35	28	23	18	12	8

Document Revision History			
Document owner: Director, Quality			
Rev	**Date**	**Description**	**Author**
0	1/6/06	Original issue to define supplier first article requirements	Paul Cater
1	8/22/06	Significant revision to expand requirements from only first article inspection to other requirements for suppliers of custom product and services. Referenced forms that can be provided to suppliers for first articles, control plans and failure mode and effects analysis. Defined AQL if sampling inspection is used and provided a statistically valid sampling plan in appendix A. Covered good practices for record keeping, defined how long suppliers are to keep records based on requirements given in QAP-42-002 Records Retention. Changed title from Supplier Quality Inspection Requirements to Supplier Quality Requirements.	Marcia Buser
2	11/28/06	Added Section 5.6, Manufacturer's Certificate of Conformance	Paul Cater
3	8/15/07	Added FAI requirements to conform to AS9102 including provision for partial FAI. Corrective action for AS9100 registration audit – see CAPA # 91, and recommendation by auditor for provision for partial FAIs. Added statement about shelf-life sensitive material control per CAPA # 94	Marcia Buser
4	4/30/08	Re-written to the Insitu format; Added the requirement for Insitu Suppliers to have a quality program in place; Added definitions and references; Added Section4. Insitu Requirements to support Supplier Quality; Revised record retention from 15 to 7 years; Added requirements for control plans, PFMEAs and Measurement Studies/Gage R&Rs; Enhanced 8.1 inspection requirements; Defined First Article Inspection requirements criteria; 8.2 Added Control Plan and Measurement Studies/Gage R&R requirements to First Article submission requirements; 9. Added Supplier Nonconformances and Deviations on Production Product paragraph; 10. Added ESD protection requirement.	Paul Cater; Peter Leon, Jim Lambo
5	8/14/09	Removed reference to QAF-82-006 First Article Inspection (Excel version) which was obsoleted in favor of QAF-82-005. QAF-82-005 was added to the References section.	Peter Leon
6	12/04/09	1.0 Revised to clarify intent of QMS requirement; Definitions - Added 2.2 Certificate of Conformance; 2.9 First Article Inspection Report (FAIR); 2.12 Added examples3.0 Added references; 3.0 deleted QAP-56-001 Management Review; 4.6 Revised notification of FAIR discrepancies; 4.7 Added statement for SM&P as single point of contact; 4.8 Added 2nd party assessments of supplier QMS; 4.9 Added for contractual requirements;4.9.1clarify intent of QMS requirement; 5.2 Clarified Insitu requirements; 5.4 clarified QMS requirements; 5.7 added requirement for suppliers to provide a work plan for achieving compliance to an Insitu approved QMS. 5.8 Added pre-delivery quality assurance; 6.1&6.2 Revised 7 years to 3 years for record retention; and added exception for the T&Cs of the contract; 7 Added paragraph for supplier qualification; 8.1 changed control to assurance; 9.1.2 Added supplier QMS flow down; 9 reformatted and renumbered subsequent paragraphs, 9.2.1 Added Insitu; 9.2.2 revised wording; 9.2.3 added Insitu; 9.2.7 added NCP handling requirement; 8.3 added process control and inspection requirement; 9.3.3 added sampling plan requirement; 11 added contract two places; 13added paragraph for Supplier Reporting; 14 clarify ESD identification and packaging; Reformatted the document to conform to the current practices. Changed procurement references to SM&P throughout document to align with current org. structure	Peter Leon/James Lambo

7	07/06/2010	2.0 Revised and aged needed definitions (arranged in alphabetical order) Added definition to Commodit and non commodity items 3.0 added new procedures and forms QAP-56-001, QAF-82-012. 5.0 renumbered paragraphs and spacing. Added 5.3 (5) Identify and Safeguard Customer. Added NOTE after 6.3.1 Complete all fields in the record, if a field is not applicable use NA or give a reason why it is blank property. Added 7.3.1 (3) additional FAIR and 7.3.1 (4) Compensate Insitu. Para. 8.0 re-numbered. 8.1 added documented 9.2.1 Added all and notes, added NOTE: The supplier shall send a copy of the FAIR in electronic read-only format to Insitu (fair@insitu.com) for review. 9.2.2 If multiple parts are shipped with the FAI part, the FAI part must be clearly marked for identification. 9.2.3 (4) added Engineering or Quality. 9.2.7 (4) Product Definition – used for the inspection. (5) added Characteristic number(bubble)- a unique number for each design characteristic and drawing note.(6) Bubbled print (7) added Paragraph number (8) removed nominal) (9) added design (10) added of each bubbled characteristic. Added (11) Type, identification and qualification (calibration date and/or certification traceable to NIST) of measurement equipment used for each measureable (bubbled) characteristic. Added (12) Who measured each bubbled characteristic. (15) CofC and/or MAR for materials and/or unique processes. (16) Remove the critical and significant characteristics and add CTQs. 9.2.8 change to Para. 12. 9.3 added 9.3.1 Insitu suppliers who purchase parts to Insitu part numbers. 9.3.2 Suppliers FAI system must meet the requirements of this document 9.3.3 Sub-tier suppliers provide electronic copies to fair@insitu.com. 9.3.4 Replace validation with verification. 9.3.5 Supplier shall provide a listing of all Sub-component DFAIRs by submitting a CCR (QAF-83-012) or equivalent list of sub-tier supplier FAIRs. Added 9.4 optional review. 9.4.1 Supplier may submit a FAIR for review to fair@insitu.com prior to submitting the first Article Parts. 9.4.2 Insitu quality will review the FAIR for completeness and report the results to the supplier through the appropriate channels.13.1 replaced corrective action with response. 13.2 changed to read Responses to Supplier Corrective Action Request. **Document Control Change:** Section 9.3.5 corrected typo in document number changed QAF-83-012 to QAF-82-012	Peter Leon/Dan Gardner/David Ooms/Nathan Martin/Susan Baker/Mike Magnuson / Danielle Gilderhus
8	4/15/2011	1.0 expanded purpose and refined scope; 2.0 For revised definitions from comformance/compliance to conformity;2.1 Removed “number” added “Boxed Character”; 2.8 revised definition of Control Plan; 2.19 Added definition of “Part Number”;3.0 deleted references QAP-56-001, QAF-75-002 ; QAP-82-001, QAP-83-005 QAF-82-007, QAF-82-016, and QAF-82-012; Added QAF-82-005 4.2, 4.2&4.5 deleted references; 2.7 re-written copying QAP-82-001 requirements.5.0, 6.0, 7.0 simplified text; 5.2 added CoCs are required for all Insitu purchased non-commodity material used for sale or service. Revised the term Compliance to Conformity for ISO9000:2005 alignment; 8.2 Changed to QAF-82-005 First Article Forms; 8.5 revised to production process control; 10.0 provided specificity on what is required from suppliers for FAIRs; 10.2 changed for to from; 10.3 Added “and the first article part or assembly; 10.7 Added “Forms”; 10.8 Changed “Form” to “Forms”; 10.9.115 Changed to QAF-82-005; 10.10 specified flow down requirements; 10.10.5 Changed to QAF-82-005; 11.0 added specificity for supplier in process actions; 11.1 Changed to QAF-82-005; 12.0 added drawing number with revision level; 13.0 Added “(suggested form is in QAF-82-005 First Article Forms – Cover Sheet)”;added 5) to8); 14.1 Changed to Insitu’s Non-Conforming Product Procedure 16.0 added specificity for supplier requirements; 17.2 Change to PUP-73-001;18 added workmanship requirements; 20 revised part marking requirements; 20.1.2 Delete “released after this revision”;20.4 added package marking limitations; **Document control change:** corrected referenced document title QAF-82-008 from Failure Mode and Effects Analysis to Design and Process FMEA Template and corrected numbering under 5.3. Corrected rev number in header of revision history pages.	David Ooms, Peter Leon, Mike Magnuson Danielle Gilderhus
2/13/12	8.1	Deleted reference to document number QAF-82-007 which was missed during revision 8 edits. Deleted from section 2.8	Jesse Maddux