

# General Atomics Systems Integration Quality Clauses Rev. E

# Q-1. Government Inspection

Government Source Inspection (GSI) is required prior to shipment from Supplier plant and/or its sub-tier Suppliers and may include representatives from General Atomics Systems Integration (GA-SI) customer, GA-SI, and/or regulatory authority. Access is to be granted to all applicable areas of the facilities, at any level of the supply chain, involved in the order and to all applicable records. Upon receipt of this Purchase Order (PO), promptly furnish a copy of the PO to the Government Quality Representative who has been delegated quality assurance functions on this procurement so that appropriate planning for Government inspection may be accomplished. The Government representative shall also be notified five (5) working days in advance of the time articles or materials are ready for inspection or test.

The Supplier shall provide all gauges, tools, fixtures, and jigs necessary to perform the inspections. The Supplier shall also provide sufficient rigging/material handling services and manpower to setup/configure/operate equipment and machines used to accomplish the inspection task. This Supplier assist requirement shall be applicable to 100% of the PO quantities.

If the Supplier has any questions on the applicability of GSI, contact the GA-SI Quality Assurance (QA) Representative.

# Q-2. Right of Access

General Atomics Systems Integration (GA-SI) shall have the right, at reasonable times and upon advance notice, to enter the facilities of the Supplier and its sub-tier Suppliers for verifying compliance with the requirements of the Purchase Order (PO). Verification may include such activities as witnessing operations in progress, witnessing inspections and tests, performing product inspections, reviewing quality assurance documents and records, and performing audits. Upon request, Supplier shall provide the GA-SI Quality Assurance (QA) Representative any, and all, quality information, documents, and records as required.

#### **Code 2A. Certificate of Conformance**

The Supplier shall submit with each shipment a Certification of Conformance, signed (this may be an electronic signature) by an authorized supplier's representative. The Certification of Conformance shall provide the Purchase Order Number, Applicable drawing (s) and/or specifications, including revision levels, amount of material or quantity of items in the shipment Manufactures Name, Lot, Batch and Serial Number (s) as applicable.

#### Q-3. Travelers

Supplier shall maintain a traveler, router, process flow sheet, or equivalent control mechanism that directs procedures appropriate for the control of quality and configuration through all stages of production for this Purchase Order (PO). Copies shall be included in product shipment.

**NOTE**: General Atomics Systems Integration (GA-SI) may ask Supplier to submit a copy of its traveler, router, process flow sheet, or equivalent control mechanism used for the manufacturing process prior to start of manufacturing.



### Code 3A. Statement of Calibration

Equipment used to prove product conformity must be calibrated. The Supplier shall maintain a calibration management system that conforms to the requirements of ISO 10012-1, latest revision, for all Inspection Instruments used for In-Process, Final, and First Article Inspections of parts/assemblies supplied to General Atomics Systems Integration. GA-SI approval or certification to ISO 9001/AS9100 by an accredited registrar will be accepted as proof of conformance.

# Q-4. Supplier Corrective Action Request

In response to a General Atomics Systems Integration (GA-SI) initiated Supplier Corrective Action Request (CAR), Supplier shall advise GA-SI of root cause determination, corrective action taken to prevent recurrence of reported problem and/or discrepancies, and effectivity dates of the planned corrective action(s). Supplier shall maintain a corrective action system that determines the effectiveness of such corrective actions, and that prevents shipment of nonconforming articles without prior approval from GA-SI.

# **Code 4. First Article Inspection**

First Article inspection shall include actual findings of all drawing dimensions, notes and results of nondestructive test required by the drawing and/or requirements of the Purchase Order. This will be conducted at the Manufacturer's facility. A copy of the report shall be delivered with the first delivery of the procured item.

#### Q-5. Certificate of Conformance

The Seller shall furnish a Certificate of Conformance with each delivery attesting that each item of hardware and/or software conforms to all requirements of the Buyer's specification and purchase order and that all required test and inspections have been performed.

## Code 5. General Atomics Systems Integration (GA-SI) Final Acceptance

Final acceptance of all items furnished on this Purchase Order (PO) shall be at General Atomics Systems Integration (GA-SI). Inspection at source by GA-SI or their customer shall not constitute final acceptance, nor shall it relieve the Supplier of their responsibility of furnishing acceptable products and/or services.

## Q-6. Certification of Material(s)

Documentation indicating chemical composition and/or actual physical properties identifiable to each lot, batch or heat treat lot shall be kept on file *and* submitted with shipment. Documentation shall be validated by an authorized Supplier's representative.

Complete material traceability shall be maintained throughout the manufacturing processes with appropriate records maintained. Traceability records shall be available for review by GA-SI upon request.

The Supplier shall not use alternate materials or grades of materials without prior approval from GA-SI, even if they have similar chemical and physical properties. If the Supplier desires to use alternate materials due to availability issues, Supplier must submit a request to GA-SI using current version of the General Atomics form GA 2329, "Supplier's Disposition Request" (SDR). Blank SDR forms may be obtained from GA-SI Quality Assurance (QA)



Representative. Upon request, such certification(s) shall be made available to GA-SI within 48 hours.

**NOTE**: Match part and material certifications of material used to manufacture the part.

Code 6A. General Atomics Systems Integration (GA-SI) / Customer-Furnished Material Supplier shall inspect upon receipt all materials or parts furnished by GA-SI and provide written notification to GA-SI of any discrepancies found during inspection. Supplier shall segregate and withhold from use all materials and parts found to be discrepant pending written disposition by GA-SI.

# Q-7. Quality System ISO9001/AS9100

The Supplier shall establish, document, implement, and maintain a Quality Assurance (QA) program in accordance with the applicable requirements of ISO 9001/AS9100, latest revision, Quality Management System – Requirements, as appropriate for the work to be performed under the Purchase Order (PO). ISO 9001/AS9100 certification is required and shall be maintained throughout the duration of the PO. A copy of the Supplier's ISO 9001/AS9100 quality management system manual and ISO 9001/AS9100 certificate shall be provided to General Atomics Systems Integration (GA-SI) upon request.

# **Code 7: Packaging of Electrostatic-Sensitive Devices**

Packaging of Electrostatic-sensitive Devices - All electrostatic-sensitive devices shall be handled and packaged in accordance with ANSI S20.20.

**Note:** Use of Pink Poly packaging material for shipment of product to General Atomics Systems Integration (GA-SI) is strictly prohibited.

**Q-8. Quality Management System Compliance.** The Supplier shall establish, document, implement, and maintain a Quality Assurance (QA) program that complies with the applicable requirements of ANSI/ISO/ASQ Q9001, Quality Management System – Requirements (without tailoring), as appropriate for the work to be performed under the Purchase Order (PO). ISO 9001 certification is not required. A copy of the Supplier's quality management system manual shall be provided to General Atomics Systems Integration (GA-SI) upon request.

#### Q-9. GA-SI Quality System Review

During the performance of this Purchase Order (PO), General Atomics Systems Integration (GA-SI) reserves the right to review, verify, and/or analyze the Supplier's Quality and/or Inspection System and Manufacturing processes at the Supplier's facilities. GA-SI's Quality Assurance (QA) Representative shall notify the Supplier five (5) days in advance of the intended review start date and duration.

The Supplier shall establish, document, implement, and maintain a Quality Management System (QMS) appropriate for the scope of work to be performed under the PO. The GA-SI Quality Assurance Representative reserves the right to verify said system. A copy of the Supplier's Quality Manual shall be provided to GA-SI upon request.



# **Code 9. Source Inspection**

Source inspection of items furnished on this Purchase Order is mandatory. Supplier shall notify General Atomics Systems Integration (GA-SI) Quality Organization at least seven (7) working days in advance of requirement for source inspection. Supplier shall make available all records, facilities, equipment, personnel, and assistance necessary to evaluate items, witness testing and/or perform First Article Inspection of the items supplied.

#### Q-10. Calibration and Test

The Supplier's Calibration System shall conform to ISO/IEC 17025, ISO 10012-1, and, when applicable, ANSI/NCSL Z540-1, latest revision. Use of equipment traceable to the National Institute of Standards and Technology (NIST) is required. Third-Party registration by an accredited registrar will be accepted as proof of compliance.

# Q-11. First Article Inspection

A First Article Inspection (FAI) report shall be submitted by the Supplier in accordance with the requirements of SAE AS9102, Aerospace First Article Inspection Requirement, latest revision, on one item from the first production lot, or as required by General Atomics Systems Integration (GA-SI). First Article inspection shall include actual findings of all drawing dimensions, notes and results of nondestructive test required by the drawing and/or requirements of the Purchase Order. This will be conducted at the Manufacturer's facility. When documenting the FAI, Supplier may use the forms contained within the latest version of SAE AS9102 or their equivalent, so long as the forms contain all the information required by SAE AS9102. The First Article item shall be clearly identified by a tag attached to the item or a label applied to the item or a label applied to the item or a loop of the FAI shall accompany the First Article item.

GA-SI reserves the right to verify any or all of the characteristics documented on the FAI report at the Supplier's facility.

**NOTE**: Record Measurement & Test Equipment used (make, model, and serial number) and Calibration Due date.

#### Q-12. Source Inspection

Source Inspection shall be conducted by General Atomics Systems Integration (GA-SI) at the Supplier's facilities or where designated in this Purchase Order (PO) prior to shipment. Inspection/test and/or in-process inspection/test of the articles specified in this PO shall be performed by the Supplier and shall be witnessed by the GA-SI's Quality Assurance (QA) Representative. Prior to fabrication start, the Supplier and GA-SI may determine the process steps at which Source Inspection shall be conducted. The Supplier shall notify the GA-SI QA Representative of the scheduled inspection/test five (5) days in advance. The method of product release shall be a stamp or signature by GA-SI's QA Representative on the Supplier's shipping or inspection documents. Shipment shall not be made without either actual inspection by the GA-SI QA Representative. The Supplier shall have technical data (e.g., drawing, specification, certification), available for use in support of the Source Inspection activity. The Supplier shall provide gauges, tools, fixtures, and jigs necessary to perform the inspections. The Supplier shall also provide sufficient rigging/material handling services and manpower to setup/configure/operate



equipment and machines used to accomplish the inspection task. This Supplier assist requirement shall be applicable to 100% of the PO quantities.

When in-process GA-SI Source Inspection is required, in-process hold points will be designated by GA-SI on the GA-SI Statement of Work (SOW). The Supplier shall include GA-SI designated in-process hold points in the manufacturing instructions (router, traveler, task or sign-off sheets). The Supplier shall provide reasonable facilities and assistance, including all quality records and related data for the safe and efficient performance of GA-SI inspections.

# **Code 12. Inspection and Test Reports**

- A) Supplier shall furnish with each shipment a report of tests made during product final acceptance. Report shall show actual recorded readings on electrical and/or mechanical tests performed. For General Atomics Systems Integration (GA-SI) supplied material, supplier shall identify products by GA-SI serial number(s) as noted on each line of this Purchase Order.
- C) Supplier shall furnish with each shipment a report of actual measurements of drawing dimensions made during product final acceptance. Data shall be provided for all parts in the shipment unless sampling has been authorized in writing by GA-SI Quality Assurance.

The inspection and test status of all products shall be readily determined at all points during the production cycle.

# Q-13. Work Release Prior To Shipment

Items covered by this Purchase Order (PO) shall be inspected and released by the General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative prior to shipment. As evidence of the QA Representative's release of the items and all related documentation, a Work Release document shall be completed and signed. A copy of the Work Release shall accompany each shipment. Execution of a Work Release does not relieve Supplier of their obligation to provide items that are in compliance with the requirements of the procurement documents.

# Code 13B. Raw Material Certification/Test Reports-Submit With Shipment

Documentation indicating chemical composition and/or actual physical properties identifiable to each lot, batch or heat treat lot shall be kept on file *and* submitted with shipment. Documentation shall be validated by an authorized Supplier's representative.

#### Code 13F. Special Process Control

Supplier using special processes (heat-treating, welding, painting, plating, non-destructive testing, etc.) must be certified to and have these special processes approved by General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative prior to production. Supplier shall maintain records verifying that special processes and personnel are certified. Suppliers must have controls in place and documented for approving Sub-tier Suppliers to ensure they are certified and approved.



# Code 13G. Special Process

Supplier shall provide certification of special processes (heat-treating, welding, painting, plating, non-destructive testing, etc.) and shall list the standard, type, class, etc. for each process. Supplier shall maintain records verifying that special processes and personnel are certified.

# Q-14. Age Sensitive Materials

The Supplier shall submit with each shipment for materials subject to aging, shelf life information including the cure or manufacture date, expiration date, and special storage and handling conditions, in addition to the normal identification requirements of name, part number, or code number, specification number, type, size, quantity, etc. This identification, including special handling conditions, shall be recorded on certification and shipping documents for the material. A minimum of 80% shelf life must remain at time of receipt.

# Q-15. Supplier / Distributor

Should the Supplier be a distributor supplying material not of its own manufacture, the manufacturer shall be as identified on General Atomics Systems Integration's Purchase Order (PO) when specified. The Supplier shall list the manufacturer on the Certificate of Conformance (C of C) or shipper with each shipment.

# Code 15A: Non-Conforming Hardware -

Supplier must notify the buyer of any nonconforming conditions related to product while at the suppliers location prior to shipment and/or delivery or after release to the buyer. Written authorization signed by Buyer's Engineering and Quality Assurance Representatives is required prior to shipping items which do not comply with the drawings, or specifications. As requested from Buyer, if it is determined that seller or seller's sub tier supplier is responsible for the nonconformance, corrective action must be documented and accomplished in a timely manner. Written Buyer authorization is required prior to performing any repair operations or any "use as is" dispositions on deliverable items. Should it be determined that the corrective action is not adequate, clarification may be requested or seller may be disqualified from use A copy of the Buyer Nonconformance Document authorizing shipment shall be provided with the shipment.

#### Q-16. Test Data

Each item shipped shall be accompanied by copies of reports of actual test results, indicating part, serial, and test specification/procedure numbers, as applicable. Test results shall not be averaged, deleted, nor omitted from the record, unless specifically required by the test specification or plan. These reports must contain the signature of a responsible representative of the agency performing the test and must assure conformance to specified requirements. The specifications must be listed, including the specification revision letter, or revision number.

The Supplier shall retain results of product testing for seven (7) years from end of contract, unless otherwise specified, in the form of documented data containing actual and specification values/requirements. Test Data shall be provided to General Atomics Systems Integration (GA-SI) upon request within 72 hours.



# Code 16. Preservation & Packaging

Items supplied on this purchase order shall be suitably packaged to prevent damage from contamination, corrosion, handling and extended storage.

# Q-17. Traceability requirements

The Supplier shall provide means of each end item traceability. The Supplier may use the original manufacture Lot/Date Code or Serial number or their own method for identifying each item product as required for proper traceability. Serialized shipments must have the serial numbers listed on the shipper. Duplication of Lot/Date Code or Serial numbers is prohibited.

# Q-18. Part Marking

Supplier shall mark each Purchase Order (PO) item with part number and drawing revision level in accordance with drawing instructions. Bagging or tagging with part number and drawing revision level label is acceptable if drawing instructions are unavailable. Parts too small to part mark shall be bagged and tagged with the part number and drawing revision level.

# Q-19. Packaging of Electrostatic Sensitive Hardware

All areas where electrostatic sensitive hardware will reside shall be Electrostatic Discharge (ESD) safe and have proper controls and monitors. For electrical and electronic parts susceptible to damage from ESD, the Supplier is responsible to establish and implement an ESD control program per Joint Electron Device Engineering Council (JEDEC) 625, American National Standards Institute (ANSI)/Electrostatic Discharge (ESD) S20.20 (latest revision) or equivalent. The Supplier shall take the necessary precautions to ensure static susceptible devices are adequately protected from ESD damage in the receiving area, manufacturing, assembly, Inspection, test areas, troubleshoot areas, packaging, shipping, Material Review Board (MRB) Hold Area, etc. The Supplier shall identify the level of sensitivity of parts (e.g., Class 0, Class 1, and Class 2) per Electrostatic Discharge Sensitivity Testing – Human Body Model (HBM) – Component Level ESD STM5.1-2007.

All electrostatic sensitive hardware shall be placed in conductive or static-shielding packages, tubes, carriers, conductive bags, etc., for shipment. Packaging shall be marked with an ESD cautionary note or symbol.

**Note:** Use of Pink Poly packaging material for shipment of product to General Atomics Systems Integration (GA-SI) is strictly prohibited.

## Q-20. Packaging & Shipping

The Supplier shall clean, preserve and use special packaging as required on this order, or when not specified, Supplier may use specially designed shipping containers and/or good commercial practices as deemed necessary to prevent shipping damage. Packaging requirements contained on the Engineering drawing take precedence.

Any expense incurred by General Atomics Systems Integration (GA-SI) as a result of improper preservation, packaging, packing, marking, or method of shipment shall be reimbursed by the Supplier. No separate or additional charge is payable by GA-SI for containers, crating, boxing, bundling, dunnage, drayage, or storage unless specifically stated in the Purchase Order (PO).



Unless otherwise noted on the PO, all packaging delivered to GA-SI shall contain the PO number, line item number, Part number & Revision, Quantity, and Supplier identification on the container and/or a packing list attached.

# Code 20. Electronic Process and Workmanship - The following requirements apply to this order:

- j. IPC/EIA J-STD-001 Class 3 Requirements for Soldered Electrical and Electronic Assemblies
- q. NASA-STD-8739.1 Workmanship Standard for Staking and Conformal Coat of Printed Wiring Boards and Electronic Assemblies
- NASA-STD-8739.4 Workmanship Standard for Crimping, Interconnecting Cables, Harnesses and Wiring
- 2) Single Date/Lot Code Items delivered under this order shall be from a single date/lot code. Shipments of multiple date/lot codes must be authorized in advance by General Atomics Systems Integration (GA-SI) buyer.
- w. IPC/EIA J-STD-001ES Space Applications Electronic Hardware Addendum to IPC J-STD-001E Class 3 Requirements for Soldered Electrical and Electronic Assemblies. When this code is applied Code 20j is required.

# Q-21. Supplier Disposition Request (SDR)

All line items delivered shall conform to the requirements of the Purchase Order (PO). Nonconformance, design modification requests, and requests for information to clarify PO, drawing, or specification requirements shall be documented and submitted for consideration using the current version of the General Atomics form GA 2329, "Supplier's Disposition Request" (SDR). Blank SDR forms may be obtained from General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative.

Completed SDRs must be submitted to the GA-SI QA Representative for review and approval. The only means of approval is a GA-SI signed SDR. Under no circumstances shall nonconforming line item or services be shipped without a GA-SI approved SDR.

## Q-22. Rework Report

In the event the item is returned with a nonconformance, the Supplier shall inspect, test, and rework as required. The Supplier shall provide a complete detailed rework report including test and inspection results, evaluation findings and description of all work performed.

In the event that the item is found to be fully conforming and the failure/discrepancy could not be duplicated, the Supplier shall state the Can Not Duplicate (CND) condition on the test and inspection report.

# Q-23. Document Legibility

All documentation provided by the Supplier shall be legible, and at a resolution capable of being reproduced and scanned for electronic storage.



### Q-24. Counterfeit Parts

The National Defense Authorization Act, Section 818, Detection and Avoidance of Counterfeit Electronic Parts, requires the Supplier to implement processes to detect and avoid the sale or use of counterfeit electronic parts or suspect counterfeit electronic parts in all products supplied to General Atomics Systems Integration (GA-SI).

The Supplier and its Subcontractors must take an active role in the elimination of all possible shipments containing counterfeit parts. To prevent the inadvertent use of counterfeit parts and materials, all fasteners and/or electrical, electronic and electro-mechanical parts delivered and/or used in the manufacture of deliverable products shall be from the Original Component Manufacturer (OCM)/ Original Equipment Manufacturer (OEM) or their franchised dealer or an authorized distributor chain. The requirements of AS6174 (Counterfeit Material; Assuring Acquisition of Authentic and Conforming Material) and/or AS5553 (Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition) must be met.

GA-SI has the right to refuse to accept any materials, services and or component parts it has determined to be counterfeit or fraudulent.

## Q-25. Hazardous Material

The Supplier shall furnish the latest version of applicable Safety Data Sheet (SDS) / Material Safety Data Sheet (MSDS) for products designated by industry, state, or federal agencies as hazardous materials.

# Code 35. High Energy Machining

Supplier shall contact the General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative for approval prior to using any type of high-energy machine work on items manufactured under this order. This includes Electrical Discharge Machining, Laser Machining, Elox Cutting, or any other electrical milling, cutting, or machining method.

# Code 36: Serial Number Assignment –

If serialization is a requirement, reference PO, subcontract or contact General Atomics Systems Integration (GA-SI) buyer for serial number assignment.

## Code 37: Lot/Batch Traceability -

All parts, materials, and related documents shall be segregated and identified by a manufacturing lot or batch number by the supplier, which shall include the heat number, heat code, heat lot number, melt number, manufacturing lot number, or date code. Documentation shall be maintained on file to permit traceability from the delivered item back through its manufacture and inspection to the procurement records on its constituent parts and materials. Where marking of the parts is not practical, the smallest container packaged shall be marked with the above data.

#### Code 39. Passivation for COTS Hardware

Passivation per AMS-QQ-P-35 or ASTM-A-967 is required. Evidence of passivation (Certificate of Compliance) is required to be delivered with this line item.



### Code 39A. Passivation for CRES Parts

Passivation per AMS 2700 is required. Evidence of passivation (Certificate of Compliance) is required to be delivered with this line item.

# **Code 40. Prohibited Materials for Spaceflight**

All products supplied on this purchase order shall be free of platings, coatings, and claddings composed of pure tin, solders with greater than 97% tin, cadmium, selenium, brass, or zinc. The Seller shall certify that these prohibited materials were not used in the platings, coatings, or claddings used in the construction of products procured on this purchase order. Compliance to this restriction is subject to General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative review at any time during the performance of this order.

# Code 42. Titanium Material Sourcing

Supplier shall contact the General Atomics Systems Integration (GA-SI) Quality Assurance (QA) Representative for approval prior to sourcing material used in manufacturing of parts/components on this order. Distributors and original mill will be identified and communicated to the GA-SI QA Representative.

**Note:** Avoid the following Suppliers when procuring Titanium Material: A&P Alloys, Western Titanium, Mach 1 Metals and Performance Titanium

#### Code 43A: Counterfeit Parts Avoidance - Assemblies

- Unless approved in writing by the Buyer, Seller shall use only original equipment manufacturers or original component manufacturers (OEM/OCM) or an OEM/OCM Authorized/Franchised Dealer or Distributor.
- 2) Seller shall verify all documents that provide chain of custody to the original manufacturer for each lot in a shipment. Upon request from Buyer, these documents shall be provided to General Atomics Systems Integration (GA-SI).

## Code 43B: Counterfeit Parts Avoidance – Components –

Seller shall verify and provide all documents that provide chain of custody to the original manufacturer for each component in a shipment.

## Code 49. Change(s) in Product/Process

Supplier is required to notify buyer of changes in product and/or process definition impacting the quality of products or processes being supplied. General Atomics Systems Integration (GA-SI) and/or GA-SI's affected customer representative must review and approve proposed process.

Code 57A. GEIA-STD-0005-2, Standard for Mitigating the Effects of Tin Whiskers in Aerospace and High Performance Electronics, level 2C.

## Q-60. Commercial-Off-the-Shelf (COTS) Hardware and Software

COTS hardware and software is defined as items procured in the "off-the-shelf" condition from commercial manufacturers and has not been modified for use. Use of COTS hardware and



software on all deliverable items shall be submitted to General Atomics Systems Integration (GA-SI) for approval.

The Supplier shall document the use of approved COTS hardware and software with consideration for configuration control and impacts to the product baseline. For off-the-shelf hardware where detailed materials and processes (M&P) information may not be available, or it may be impractical to impose all the detailed requirements, a set of procedures shall be established to identify the materials used and provisions for ensuring that this hardware is satisfactory. COTS hardware used in limited-life, fracture-critical, or safety-critical applications shall require a material usage agreement (MUA).

# Q-61. Materials and Process Program

The Supplier shall supply a searchable electronic database of all BOM items in the end item assembly.

#### Q-62. Alerts and Bulletins

The Supplier shall participate in the GIDEP and review product related alerts and advisories to determine if they affect the products/services provided to General Atomics Systems Integration (GA-SI). If affected, the Supplier shall take action to notify GA-SI and mitigate any negative effect agreed upon by Supplier and GA-SI.

The alert processes must be closed-loop, and closure status is not achieved until impact, or lack of, and impact resolution has been determined for both internal and sub-tier supplier products and services. The Supplier shall have a close-loop system that ensures that suspect parts, materials, and processes are purged from the system, that a means is in place to prevent suspect/known hardware/software concerns from being reintroduced into products, and that the future procurement/receipt of hardware/software with suspect/known problems is prevented.

## Q-63. Competence, Training, and Awareness

Manufacturing, inspection, and test personnel working on the program shall be trained and certified. Certification of personnel for special processes and critical processes shall be implemented formally and shall include demonstration of proficiency. This activity includes the definition of responsibilities and establishing policies for training, certification, and recertification. Records of the qualifying training and certification performed shall be maintained.