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| **Date:** |  |
| **Purchase Order or Subcontract Number:** |  |
| **Quality Assurance Evaluator:** |  |

**Purpose**

This document provides the minimum clauses used to define SAIC’s Quality Assurance (QA) requirements specified to suppliers and subcontractors of a *Printed Circuit Board Assemblies*. These clauses should be reviewed by Quality Assurance and supplemented to meet the specific project’s needs.

**Scope**

The requirements defined herein, and as supplimented by QA, are to be included as contractual requirements, in addition to any Purchasing and/or Engineering requirements, and must be complied with as referenced on a supplier’s Purchase Order (PO) or Subcontract. For those parts being supplied to SAIC the supplier accepting a PO or Subcontract shall enforce the same specified requirements on their sub-tier suppliers or vendors.

*Note: This document is intended only for the procurement of detailed parts of the commodity specified. For parts that include multiple commodity types and all assemblies Quality Assurance should develop a specific list of applicable clauses using document QA-13P.*

**Reference Documents**

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| **Document Number** | **Title** |
| ISO 9001 | Quality Management Systems — Requirements |
| MIL-STD-129 | Military Marking for Shipment and Storage |
| MIL-STD-1686 | Electrostatic Discharge Control Program For Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices) |
| IPC-600 | Acceptability of Printed Circuit Boards |
| IPC-610 | Acceptability of Electronic Assemblies |
| IPC-2221 | Generic Standard on Printed Board Design |
| IPC-2222 | Sectional Design Standard on Printed Board Design |

**1 General Quality Assurance Clauses**

**1.1 🗹 Documentation**

Copies of all SAIC documentation are available through the SAIC Purchasing Department. All other non-SAIC documents, standards, or specifications shall be obtained by the supplier through other sources. The latest revision(s) in effect on the date of order shall apply unless otherwise specified by SAIC.

**1.3 🗹 Quality System**

The supplier shall have and maintain, throughout the life of the PO or subcontract, a quality system adequate to ensure compliance with all P.O./Contract requirements. This does not relieve the supplier of their ultimate responsibility to furnish compliant products and/or services to SAIC, regardless of their particular quality system. Upon request, the supplier shall permit a SAIC Quality Representatives to audit the supplier’s quality system, which may include the review of previous audit reports from third party auditors.

**1.5 🗹 Supplier Nonconformances**

Acceptance of product that is in any way nonconforming is the prerogative of SAIC. The supplier shall notify SAIC of nonconforming products prior to shipment, using the Supplier’s nonconformance documentation. The nonconforming material documentation shall include a detailed description of the nonconformance, the supplier’s recommended disposition, and a statement indicating the corrective action taken to preclude or minimize recurrence of this condition (including effectivity). Suitable analysis (structural, thermal, stress, etc.) must be included justifying the integrity of the part in question. This documentation shall be submitted to the SAIC Buyer for Material Review Board disposition. If the recommended disposition is approved by SAIC, the supplier shall reference their nonconformance record number on the paperwork accompanying the product and including a copy with its delivery. In some cases it may be necessary for the supplier to provide one or more product samples to SAIC for evaluation before a final disposition can be made.

**1.6 🗹 Records/Reports**

Records and/or reports containing qualification, inspection and test results must be maintained on file at the supplier’s facility throughout the life of the contract and for a period of \_3\_ years after delivery. These shall be made available for review by SAIC representatives and/or representatives of the prime contracting agency upon request.

**1.7 🗹 Initial Acceptance**

Initial acceptance of product by SAIC may be determined through source inspection, certification, sample or 100% inspection and/or test. SAIC reserves the right to return, at the supplier’s expense, any or all nonconforming product determined to be the supplier’s responsibility. SAIC's initial acceptance does not relieve the supplier of the responsibility for correcting nonconformance’s detected subsequent to SAIC’s initial receipt and inspection.

**1.8 🗹 Repaired or Reworked Products**

Products resubmitted by the supplier, following previous SAIC rejection, must be segregated and shown as separate products on the supplier’s shipping documents and certifications. The supplier’s shipping documents and certifications must identify these products as "REPAIRED" or "REWORKED" products, and must reference the SAIC Nonconforming Product Report (NPR) number from which they were originally rejected and returned.

**1.9 🗹 Corrective Action**

Prompt action shall be taken by the supplier to detect and correct unacceptable conditions that have resulted, or could result, in the production of nonconforming products. The supplier's corrective action system shall cover all phases of manufacturing activities from material procurement through delivery of products to SAIC, including corrective action with sub-tier suppliers (when required). Such requests require timely responses and should include the following information: Analysis of the root cause of the problem, statement of the action taken to correct the condition and prevent or significantly reduce recurrence, and the effectivity of the corrective action taken (date or serial number). When corrective action is required for Government Source inspected products, the supplier shall coordinate such action with the Government Quality Assurance Representative assigned to this plant. All SAIC requested corrective action requires final approval by SAIC.

**1.10 🗹 Mercury and Lead Exclusion**

### The products furnished under this contract shall contain no elemental mercury, lead, or chemical or thermally unstable mercury or lead compounds. The supplier shall take reasonable precautions to ensure that products furnished under this contract are not contaminated with any type of mercury or lead compounds. The requirement shall be included in all subcontracts, POs, and any other document used for procurement.

**1.11 🗹 Certifications**

### When certifications are required the supplier shall provide with each shipment one (1) legible and reproducible copy of a certificate containing a full and complete statement meeting the requirements of the specific clause and signed by an authorized representative of the supplier. Where at all possible, the supplier is encouraged to combine statements in one certificate to include the requirements of two or more clauses, when more than one certification clause is specified. Records as objective evidence attesting to certifications must be maintained on file at the supplier’s facility subject to review by SAIC representatives and/or representatives of the prime contracting agency. Unless otherwise specified, each certification shall reference the product number and revision, quantity, serial number(s) (if applicable) and the SAIC PO or Subcontract number.

**3 Inspection/Surveillance**

**3.1 🗹 Source Inspection**

SAIC reserves the right to perform inspection and/or test of products at the supplier’s facility prior to each shipment. The supplier shall notify the SAIC Buyer and/or assigned SAIC Source Inspector, a minimum of 72 hours prior to the completion of deliverable product. If required by SAIC, the supplier shall furnish access to all product-related documentation, and the necessary resources to perform source inspection. Final product acceptance by SAIC shall be based on either sampling or 100% inspection IAW SAIC’s inspection/test checklists. SAIC reserves the right to reject a “Lot” based on SAIC-established sampling plans. Any discrepancies found shall be noted on the supplier’s Nonconforming Material Report and dispositioned IAW the Supplier’s procedures for Scrap and Rework, or submitted to SAIC Buyer for Material Review Board (MRB) approval of Repair or Use-As-Is dispositions.

The supplier shall include a copy of SAIC’s Source Inspection Report along with the Shipment to SAIC.

### **3.2 🗹 Source Surveillance**

### All design and manufacturing processes, products, and documentation related to this order shall be subject to source surveillance (audit) by SAIC and a SAIC customer quality representative upon request. The supplier shall (at no additional charge) supply data, records, and when required by SAIC, perform under surveillance of the SAIC representative, selected inspections and tests defined in the applicable drawings, specifications, procedures or work instructions.

**3.6 🗹 Supplier Initiated Changes-Approval Required**

### The supplier shall notify the SAIC buyer and obtain written approval prior to the incorporation of any changes in the materials, manufacturing processes, performance or configuration of their deliverable product.

**3.9 🗹 Notification of Facility Move**

The supplier shall not move the production of products for SAIC to another facility during the performance of the PO, without promptly notifying the SAIC buyer and affording SAIC an opportunity to approve said facility, prior to the move.

**3.12 🗹 Acceptance Test Procedure**

### The supplier shall prepare an acceptance test procedure (ATP) for the products to be delivered under this purchase order, to include, as a minimum, the equipment, test sequences, acceptance criteria and the method used for handling test failures. The procedure shall also contain a requirement for recording on a test data sheet the following data for submission to SAIC: Product number, product name, revision letter, serial/lot number, criteria measured or tested, test results, and signature of supplier’s authorized representative. A copy of the acceptance test procedure shall be submitted for SAIC’s review and approval at least thirty (30) days prior to performance of the initial acceptance testing. Any subsequent changes to the acceptance test procedure shall also be submitted for review and approval by SAIC prior to implementation.

**3.13 🗹 Material Review Board Authorization**

The supplier is not authorized to perform or disposition any type of Repair or Use-As-Is disposition without written SAIC Material Review Board (MRB) approval. Repair is defined as any deviation from the requirements of the applicable drawings or specifications. Suppliers desiring MRB authority shall petition in writing to the SAIC Buyer.

**3.15 🗹 Alternate Facility**

### The supplier shall not build or subcontract any products for SAIC to a location or facility different from which SAIC originally approved, without first notifying the SAIC Quality Representative for approval. SAIC reserves the right to visit/inspect a proposed facility for approval prior to the commencement of work.

**3.19 🗹 Defect Tracking and Reporting System**

The supplier, and its major subcontractors (those providing build-to-print parts), shall maintain an in-house defect tracking and reporting system to measure ongoing product quality performance during the manufacturing, inspection and test processes. The supplier and its major subcontractors

shall be able to demonstrate timely root cause analysis and corrective action that is commensurate with the type or magnitude of any defect(s) when detected. The information stated above shall be made available to SAIC upon request.

**4 Certification**

**4.1 🗹 Compliance With Purchase Order Requirements**

The supplier shall certify that the product shipped to SAIC complies with all requirements of the PO (including all referenced documents). The certificate of conformance (CoC) shall reference SAIC's PO number, quantity, product description, product number, and revision, including all serial numbers (when applicable). The certification shall be signed and dated by an authorized company representative.

**4.2 🗹 Certification of Printed Wiring Boards**

### Certification shall include a minimum of three substrate coupons for each lot identified by lot number. The requirements of IPC-2221 and IPC-2222, shall be as indicated on the purchase order. All printed wiring assemblies shall meet the requirements of IPC-A-610, Class 2 unless otherwise specified.

**4.3 🗹 Age Sensitive Materials With Shelf Life Requirements**

### The supplier shall certify if the product on the purchase order is age sensitive or contains age sensitive components. The certificate must identify the material and specify the cure date or date of manufacture, the expiration date and any special storage and handling requirements. Where age sensitive materials are incorporated into assemblies, the certificate must identify the assemblies, the SAIC purchase order number, the assembly date, and the cure date and supplier’s identification of the age sensitive material. This information shall also, when applicable, be identifiable with component products and/or subassemblies within the assembly to which it applies. Age sensitive material shall have a minimum of 50% of its usable life remaining before expiration when received by SAIC.

**4.4 🗹 Special Processes**

A special process is defined as any process that cannot be readily verified by subsequent inspections or tests. The supplier shall certify that special processes such as, but not limited to, soldering, radiography, welding, heat-treating, cleaning, electroplating, anodizing, chemical films, etc., were performed IAW specification requirements. The certificate shall identify the products processed, the SAIC purchase order number, and the applicable specifications (including revision letters or numbers) to which the processes conform and the date and the name of the agency that performed the process if other than the supplier.

**4.7 🗹 Mercury and Lead Exclusion**

### The supplier shall provide a certification stating that the materials furnished under this purchase order contain no elemental mercury, lead, or chemically or thermally unstable mercury or lead compounds.

**5 Records/Reports**

**5.1 🗹 Inspection**

Results from final inspections must be recorded. Records of these activities shall be collected, signed by an authorized company representative and provided to SAIC along with the product. They shall contain the following information:

1. Part number and description of the product.
2. Lot size and quantity Inspected.
3. Quantity of defective parts and defect description(s).

**5.2 🗹 Test**

### Results from electrical, functional, environmental, mechanical, operative, proof, pressure leak, or other tests required by the PO or Statement of Work must be recorded. Records of these tests shall be signed by an authorized company representative and provided to SAIC along with the product. They shall contain as a minimum the following information:

### Type of test(s) performed.

### Part number, serial number(s) and description of the product.

### Quantity tested/failed and failure modes.

### Acceptance Test Procedure (ATP), drawing or specification used for testing.

### Acceptance limits of the test parameters.

### Actual test results.

**7 Packaging For Shipment**

**7.1 🗹 Packaging For Shipment**

Products require protection from physical and mechanical damage. Protection shall be by wrapping, cushioning, product compartmentalization, cartonizing, or other means to mitigate shock and vibration during handling and shipment.

**7.3 🗹 Flex Circuits**

Flex Circuits must be packaged between two pieces of cardboard and wrapped in bubble wrap.

**7.4 🗹 Electrostatic Discharge Foam**

### Electrostatic Discharge (ESD) foam must protect connector pins.

**8 Electrostatic Discharge Requirements**

**8.1 🗹 Packaging for Delivery**

### Unless ESD protective requirements are otherwise specified, products shall conform to the following:

### All microcircuits shall be packaged IAW one of the following methods:

### Inside antistatic rails with conductive or antistatic plugs to prevent movement. Antistatic rails shall then be packed in a conductive field shielding material.

### Inside conductive rails, with conductive plugs to prevent movement. Conductive rails shall then be packed inside an antistatic or conductive material.

### Semiconductor devices (diodes, transistors), crystal oscillators, chip capacitors, chip and fixed film resistors shall be packed IAW one of the following examples:

### Product leads shall be pushed in noncorrosive, conductive foam and then placed into (conductive) shielding bags.

### Products placed in antistatic vials or containers, which provide physical separation, shall then be placed into a shielding bag.

### All static generating material such as common plastic bags, wraps, envelopes, bubble packs, foams, vials, cartons, or tote trays shall be eliminated from use as inner wrapping. Only conductive material shall be used.

### Packaging material to fill voids or to provide physical protection shall be an antistatic material.

### Outer surfaces of the unit container shall have a caution and advisory label and shall be marked IAW MIL-STD-1686 (see Figure 1).

### Unit Packs. Unit packs will be marked with a sensitive electronic device symbol (see Figure 1).

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### **Figure 1. Sensitive Electronic Device Symbol (or indistrual equivalent)**

### When available marking space permits, the sensitive electronic device caution label (see Figure2) may be used.

### Intermediate and Exterior Packs. Intermediate and exterior packs shall be marked with a yellow (Pantone 803C) caution label having black lettering (see Figure 2). A 2x2-inch label shall be placed on one side of each intermediate container. Two 4x4-inch labels shall be placed on each exterior container - one on the identification marking side (or surface) and one on the opposite side of each shipping container exceeding ½ cubic foot. Smaller shipping containers shall be marked in the same manner except that the 2x2-inch label may be used in lieu of the larger one.

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### **Figure 2. Sensitive Electronic Device Caution Symbol (or indistrual equivalent)**

**8.2 🗹 ESD Handling**

### The supplier is required to use ESD protection when handling or testing ESD sensitive products IAW MIL-STD-1686.

**13 Workmanship**

**13.1 🗹 Workmanship Standards**

### The latest version of the following workmanship standards shall apply, as a minimum, to the purchase order, unless stated otherwise in writing by SAIC.

### Printed Circuit Boards (PCBs) IPC–A-600 Class 2.

### Printed Circuit Board Assemblies (PCBAs) IPC-A-610 Class 2.

### Cable/Harness Assemblies. IPC/WHMA-A-620 Class 2 and the Component Manufacturing Installation/ Application Instructions.

### All other commodities shall comply with any workmanship requirements stated in the applicable drawings, specifications, or supplier’s own workmanship standards/inspection criteria.

# REVISION SUMMARY:

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| **Effective Date** | **Description of Change** |
| 10/17/16 | Initial issue of document. |
| 7/28/17 | Removed references to QA-13 and QA-08 from within document. |
| 8/15/17 | Changed ESD references to MIL-STD-1686 |
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