QUANTUM IMAGING
Excellence in Imaging

QUANTUM IMAGING QUALITY ASSURANCE PROVISIONS

Quality Assurance Provisions will be communicated to Suppliers on Quantum Imaging Purchase Orders (PO's). If QAP's apply, the QAP numbers will be displayed for each item on the PO, these numbers identify the requirements. Each QAP requirement provides detailed instructions to assist Suppliers with conformance. For all items where a Supplier procures material or services from another source, that Supplier is responsible for flowing down the requirements to their Sub-tiers. In the event of conflicting requirements, the following order of precedence applies:

1_ Purchase Order, 2_ Individual Specification or Drawings, 3_ Referenced Specification.

Q1 - QUALITY CONTROL, QUALITY MANAGEMENT SYSTEM REQUIREMENTS

Supplier shall, during performance of this PO, maintain a Quality Control organization and system acceptable to Quantum Imaging. Supplier is responsible for implementing and maintaining an acceptable Quality Management System (QMS) such as ISO 9001. The suppliers QMS must be approved prior to manufacture of purchased product and is subject to review by Quantum Imaging and Quantum Imaging customers at any time. Supplier is responsible for ensuring that all sub-tier suppliers comply with the applicable requirements of the PO.

Q2 - PURCHASING INFORMATION FLOWDOWN

Suppliers will flow down all applicable requirements of the PO to their sub-tier suppliers to ensure conformance with all specifications, drawings, quality system requirements, regulations, public laws and other requirements as may be specified in the Purchase Order or Quantum Imaging Terms and Conditions.

Q3 - MATERIAL SAFETY DATA SHEET (MSDS)

All products containing hazardous substances must be labeled in compliance with the Federal Hazardous Substance Labeling Act and have the necessary Material Safety Data Sheet (MSDS) included with the shipment.

Q4 - MANUFACTURING PROCESS AUDIT/SURVEY

Quantum Imaging reserves the right to perform manufacturing/test process verification audits and quality system surveys at the supplier's facilities in support of this order this includes audits of any sub-tier suppliers. These process audit/survey activities may include, but not limited to the following:

- Verification that the electrical, chemical, physical and/or mechanical properties of the parts/materials are in compliance with the specification and purchase order requirements. This verification may be accomplished by review of manufacturing and/or test processes and appropriate documentation of software.

- Evaluation of all production flow documentation (i.e., travelers, burn-in records, assembly/test records, SPC data.

- Evaluation of test programs, automated or manual, utilized for part acceptance.

Q5 - MRB AUTHORITY WITHHELD

MRB authority is not in effect unless specifically granted in writing by Quantum Imaging. Non-confirming material shall not be shipped unless approved by Quantum Imaging in writing. In addition, the Supplier will include a copy of the deviation documenting the non-conformance with the shipment. Written notification is required within 3 business days of non-conforming discovery, if found after goods are shipped.

Q6 - FIRST ARTICLE INSPECTION AND CHANGE CONTROL

1. **Quantum Imaging First Article Inspection (FAI) Process**

An independent First Article Inspection conforming to the requirements of AS9102 is required for items manufactured, assembled and tested to Quantum Imaging controlled drawings and specifications unless otherwise specified in documentation attached to this PO. Supplier is responsible for initiating First Article when there is a change in the design affecting form, fit or function of the part (including revision change) and when specifically requested by Quantum Imaging. Supplier shall notify Quantum Imaging when there is a change which may affect the product such as:

- A change in manufacturing sources, processes, inspection methods, location of manufacture, tooling or materials that can potentially affect form, fit or function.
- A change in numerical control program or translation to another media that can potentially affect form, fit or function.
- A natural or man-made event, which may adversely affect the manufacturing process.

Common commercial (e.g. parts from distributors or catalogs (COTS) and MIL-STD/Defense Electronic Supply Center (DESC) parts are exempt from this requirement. A supplier that is unable to comply with the FAI requirements identified herein shall submit an alternative FAI plan to the Quantum Imaging Buyer and obtain approval prior to beginning manufacture. Note: If AS9102 forms are not being used, the fields of information from the AS9102 forms must be in alignment (numbering) with the alternate form.

Note: As specified in AS9102 paragraph 5.3, items out of manufacture for a period of 2 years, a change in manufacturing sources, processes or inspection methods, change in location of manufacture, tooling or materials that can potentially affect form, fit or function, a change in numerical control program or translation to another media that can potentially affect form, fit or function, a natural or man-made event, which may adversely affect the manufacturing process or as specified by Quantum Imaging, based on the supplier's records shall receive a new FAI.

Note: A Quantum Imaging generated administrative drawing change (e.g. grammatical correction, typographical correction) that do not affect form, fit or function does not require a delta ("partial") or full FAI.

2. **Standard approaches for Seller FAI are:**

2.1 In the event Source Surveillance is not required by the contract, the Seller notifies the Buyer that an FAI has been completed and provides a copy of the FAI package for Quantum Imaging approval. The FAI or delta FAI package must be compliant to AS9102 requirements. The Seller will be notified upon rejection of FAI. Seller has the right to request copy of FAI approval status (an approval copy (form1) of the FAI) from the Buyer.

2.2 In the event that Source Surveillance is required or Quantum Imaging participates, the Seller performs the complete FAI and subsequent delta FAIs. The Quantum Imaging supplier quality representative may witness any FAI activity performed. Upon completion, Quantum Imaging Source surveillance or supplier Quality representative verifies the completeness of FAI and delta FAI packages (measurements, test data, process documentation, material certifications, etc.) at the Seller's site and signs/stamps off accepted FAI and delta FAI packages in the Customer Approval field of the AS9102 Form 1. Seller ships a complete copy of the accepted FAI and delta FAI packages with the first shipment following package acceptance.

Note: Subsequent shipments do not require submission of an FAI package unless a delta FAI or an additional full FAI is required per AS9102 or customer request. Supplier will maintain a record of FAI completion status to support and future customer visit.

1.0 Requirements for FAI

1.1 INSPECTION AND TEST: Seller shall conduct a complete First Article Inspection on one part chosen from the first deliverable lot of the initial purchase order. The part shall be a representative sample of the Seller's manufacturing process. For parts that are the product of a die or mold, the First Article Inspection shall be performed on one piece per activity. The First Article does not need to be performed multiple times, unless the Seller meets one or more of the change notification criterion identified in AS9102 paragraphs 5.3-5.3.4. Quantum Imaging reserves the right to request to increase quantity for required First Article if required.

3.1.1 MINIMALLY DIMENSIONED DRAWINGS: When a Quantum Imaging drawing has certain requirements defined in a model file, instead upon the face of the drawing, the resulting FAI must also address the compliance of the model file dimensions, as required by AS9102 paragraph 5.5.2.

3.2 PRODUCTION RUNS: Seller shall not commence production of units beyond the first production lot unless authorized by the Quantum Imaging Buyer or designee. Hardware produced beyond the first production lot without the Quantum Imaging Buyer's approval shall be at the sole risk of the Seller.

3.3 NONCONFORMANCE HANDLING: The FAI is not complete until the Seller closes all non-conformances affecting the part/report.

3.4 OTHER OBLIGATIONS: Neither acceptance of first product, nor pre-production sample, nor Quantum Imaging's Buyer's authorization to proceed with the manufacturing shall constitute acceptance on any subsequent items or a modification or limitation of any representation, warranty, or of any obligation of the Seller to perform strictly in accordance with the provisions of this PO. Quantum Imaging Supplier Quality may at any time specifically request a new First Article Inspection

due to quality concerns. If requested, formal direction shall be given through the Quantum Imaging Buyer.

Q7 - ONE-WAY TRACEABILITY

Seller shall maintain a traceability system on all electronic and electrical parts, raw material and mechanical machined parts, and JAN Branded devices from receipt at Seller's facility to shipment of these supplies.

A written detailed description of the system shall be available for review by the Buyer. For JAN Branded devices, manufacturer documentation shall include certification that the devices involved N

The system shall provide for one-way (backward) traceability for all parts used in supplies that can be traced back to the "Lot" received at the Seller's facility.

The system shall provide a means of correlation between the data derived from the testing, inspection and processing of the supplies.

Traceability requirements shall also apply to supplies that are modified, repaired or reworked. Each serialized part or subassembly shall be traceable, forward and backward, by circuit symbol or serial number.

The Seller is required to apply the above system to any sub-tier suppliers.

After shipment of supplies to the Buyer, traceability records shall be retained and made available to Buyer by Seller and its sub-tier suppliers for a period of 7 years.

Note: Traceability is not required to be maintained on bulk hardware items ordered to Mil-spec or industry standard part numbers, e.g., bolts, screws, nuts, terminals, rivets, clamps, washers and eyelets.

Note: A Lot is defined as a homogenous quantity of parts/material received and controlled as a single procurement transaction.

Note: A subassembly is defined as two or more parts which form a portion of the supplies replaceable as a whole, but having a part or parts which are individually replaceable.

Q8 – SUPPLIER MAINTAINED DATA (7 YEARS)

Records of inspection and test data must be maintained by the supplier and available for audit for a minimum of (7) years. The term "data" in this note refers to all inspection and test data (electronic or paper copy) required by the drawing or statement of work. All test and inspection data shall be maintained on file by the supplier, and upon request, shall be available and provided for Quantum Imaging review, for a period of 7 years (minimum) after the final shipment of material against this PO. If computer generated data is supplied, supplier shall submit to Quantum Imaging, an interpreter instruction listing describing test or sequence number versus Quantum Imaging drawing parameters. This requirement is complementary to any requirement established elsewhere within this PO to provide copies of such data with deliveries.

This test and inspection data shall include:

- Original manufacturers name
- Purchase order number
- Part number and revision
- Test/inspection results, conditions, parameters and computer test number interpreter
- Quantity of parts tested
- Serial numbers (where applicable)
- Date of test/inspection
- QA signature and date

At the end of the retention period, please contact Quantum Imaging Buyer BEFORE destroying/disposing of anything required to be retained by this Quality Attachment.

Q9 – SUPPLIER RETAINED DATA FOR (10) YEARS

Records of inspection and test data must be maintained by the supplier and available for audit for a minimum of (10) years. The term "data" in this note refers to all inspection and test data (electronic or paper copy) required by the drawing or statement of work. All test and inspection data shall be maintained on file by the supplier, and upon request, shall be available and provided for Quantum Imaging review, for a period of 10 years (minimum) after the final shipment of material against this PO. If computer generated data is supplied, supplier shall submit to Quantum Imaging, an interpreter instruction listing describing test or sequence number versus Quantum Imaging drawing parameters. This requirement is complementary to any requirement established elsewhere within this PO to provide copies of such data with deliveries.

This test and inspection data shall include:

- Original manufacturers name
- Purchase order number
- Part number and revision
- Test/inspection results, conditions, parameters and computer test number interpreter
- Quantity of parts tested
- Serial numbers (where applicable)
- Date of test/inspection
- QA signature and date

At the end of the retention period, please contact Quantum Imaging Buyer BEFORE destroying/disposing of anything required to be retained by this Quality Attachment.

Q10 – INSPECTION AND/OR TEST DATA DOCUMENTATION REQUIREMENTS FOR SELLER SUBMITTED DATA

REQUIREMENTS: Any line item to be delivered against this PO shall be inspected/ or tested to the extent required to provide objective, written evidence of its conformance to purchase order requirements.

INSPECTION AND/OR TEST DATA DOCUMENTATION

- Data Submittal: All inspection and/or tests required to prove full conformance of a line item to PO requirements must be recorded in writing and provided with each shipment of the line item to the Buyer. If the material requires Quantum Imaging source inspection, the data will be made available for review by the Buyer's Quality Representative prior to delivery. The data submitted shall cover the lot of material being shipped.
- Data Requirements: Recorded data shall include not only results of all routine inspections and tests, but in addition, any selection tests, sampling tests or any other test proving action employed to determine item conformance.
- Distributor Requirements: (where applicable). If the Seller is a jobber or distributor or the item(s) provided by the PO, the Seller shall require the same performance obligations or the original manufacturer of the item(s) herein being purchased. Additionally, Seller shall secure from the manufacturer a right for Buyer to acquire or inspect at Buyer's option, all pertinent data in that manufacturer's possession showing item compliance to it(s) or Buyer's performance specifications.
- Format: The exact format of the submitted data may vary from Seller to Seller, but shall contain the following information:
    1. Seller's name
    2. Seller's PO number
    3. Buyer's part number and purchase order number
    4. Drawing/specification/supplier planning revision level, Number of items in lot
    5. Number of items inspected
    6. Sampling Plan Level (AQL %)
    7. Lot code designation (lot number or date code)
    8. A summary listing of all (drawing notes where applicable), blueprint dimensions, process requirements, specification performance levels etc. (attributes) and their corresponding tolerance limits.

Inspection test results may be recorded in either of the following formats, or a combination thereof, as applicable and the Sellers discretion.

1. Attribute Results: Indicate for each attribute if each item inspected whether or not it falls within tolerance requirements.
2. Variable Results: Record the exact measurement obtained for each attribute of each item inspected.

Note: As the variable results format is more cumbersome than the attributes approach, it is mandatory only of purchase order specifically requires it. Otherwise, the simpler attributes methods will apply.

QUALITY APPROVAL: Data sheets/test reports shall bear evidence of acceptance by Seller's title, signature (or stamp) and date signed.

DISCLAIMER: The submission of inspection/test data as provided herein shall not modify or limit any representations, warranties or commitments made elsewhere or in any way affect the obligation of the Seller or perform strictly in accordance with the provisions of this purchase order.

Q11- NON-CONFORMING MATERIAL SYSTEM

All material found to be defective per Quantum Imaging, here to referred to as buyer, specification(s) at the Supplier's facility must be withheld from shipment to buyer until the non-conformances have been reported to the Quantum Imaging Supply Chain Representative (Buyer) and analyzed by the Quantum Imaging Material Review Board (MRB).

- The defective material must be identified with clear marking in a nonpermanent method or tagged as such if approved for shipment.
- A copy of any Buyer's authorization to ship document must accompany the material and a copy sent to the Quantum Imaging Quality Manager and Engineering Manager.
- The supplier will not be delegated the authority to process non-conformances or to establish an MRB for material specified on the PO for any buyer materials. Unless expressively conveyed in writing by the Buyer's Supply Chain Representative.

Q12- COUNTERFEIT PARTS

Supplier and all sub-tier suppliers shall comply with SAE AS5553 to prevent and mitigate the use of counterfeit parts for both electrical and non-electrical components supplied to Quantum Imaging. Only new and authentic materials are to be used in products delivered to Quantum Imaging. No counterfeit or suspect counterfeit parts are to be contained within the delivered product. Parts should be purchased directly from the Original Equipment Manufacturer (OEM)/ Original Component Manufacturer (OCM) or through the OCM/OEM franchised distributor.

If suspect counterfeit parts are furnished to Quantum Imaging and are found on any of the goods delivered, such items will be impounded by Quantum Imaging. The supplier shall promptly replace such suspect/counterfeit parts with parts acceptable to Quantum Imaging.

All occurrences of suspect counterfeit or counterfeit parts should be immediately reported to Quantum Imaging and ERAI (an information service organization that monitors, investigates and reports issues affecting the global supply chain of electronics).

The supplier is responsible to flow down the applicable requirements of AS5553 to all applicable sub-tier suppliers.

Q13 – FOREIGN OBJECT DAMAGE (FOD) PREVENTION-QUALITY ASSURANCE

The Seller shall establish and maintain an effective Foreign Object Damage (FOD) Program to reduce FOD using NAS412 as a guideline.

The Seller's program shall utilize effective FOD prevention practices. The program shall be proportional to the sensitivity of the design of the product(s) to FOD, as well as, to the FOD generating potential of the manufacturing methods.

The written procedures or policies developed by the Seller shall be subject to review and audit by the Buyer and/or government representative, and disapproval when the Seller's procedures or policies do not accomplish their objectives.

Q14 – ELECTROSTATIC SENSITIVE DEVICES (ESD)

For electrical and electronic parts, assemblies and equipment susceptible to damage from Electrostatic Discharge (ESD), the Seller is responsible to establish and implement an ESD Control Program compliant with the latest revision of MIL-STD-1686 and/or HESD625. The Seller shall take the necessary precautions to ensure that static susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging and shipping. Packaging shall be marked with an ESD cautionary note or symbol.

Areas in which ESD items are handled shall be equipped with humidity monitoring devices. When the relative humidity drops below the permitted lower limit of 30%, all work on ESDS items shall cease until either the relative humidity increases to at least the lower limit or Ionization equipment utilized at the ESD workstation must be turned on and properly positioned with respect to the product and operated in accordance with the manufacturers operating instructions.

Anti-Static and Static Dissipative packing material (pink-poly formulations must comply with the Contact Corrosivity Testing (to determine the corrosive tendencies of packaging materials with in intimate contact with other materials) in accordance with MIL-STD-3010 Method 3005 (formerly Federal Standard 101, Method 3005). This anti-static and static dissipative packing material MAY NOT be used in direct contact with Optics and Polycarbonates.

Q15 – CERTIFICATE OF CONFORMANCE (C of C)

Seller shall provide a Certificate of Conformance with each shipment

The Certificate of Conformance shall contain the following information:

- Seller's name and address
- Original Equipment Manufacturers' (OEM) Name (when different than Seller)
- Quantum Imaging Purchase Order number
- Seller's Sales Order Number
- Part Number of item, drawing revision (including change notices, if not part of revision level), and quantity shipped (as specified on purchase order or in the case of an approved partial shipment quantity on the pack list)
- Serial Number(s), Date Code(s) of product shipped
- Statement of conformance to all purchase order requirements
- Signature of Seller's authorized agent and date

Q16 – SUPPLIER CHANGE REQUEST/NOTIFICATION FOR QUANTUM IMAGING APPROVAL PLEASE NOTE THIS DOES NOT APPLY TO COMMERCIAL OFF THE SHELF (COTS) ITEMS

All communication, technical guidance and instructions having contractual impact shall be accomplished directly between Quantum Imaging Buyer and Supplier's authorized representative,

No changes in materials, processes, procedures, design interfaces, software and the facilities used for manufacturing, inspection and test shall be made without prior written approval/acknowledgement from the Quantum Imaging Buyer. This includes, but is not limited tom changes to Quantum Imaging

directed sub-tier sources, facility relocations, new equipment, etc. Impact to form, fit or function will be assessed by the impacted programs.

Prior to implementing a change the supplier shall submit a written request notifying Quantum Imaging Buyer and Engineering manager of the change. Quantum Imaging will communicate results back to the supplier via the Buyer.

It is the supplier's responsibility to fully comply with all the instructions listed on the Quantum Imaging purchase order and Quantum Imaging Terms and Conditions. Lack of written approval SHALL NOT relieve the Supplier of the responsibility to fully comply with all of the requirements of the purchase order. The Supplier SHALL NOT receive compensation in any form from Quantum Imaging for any unauthorized activity.

Q17 – PACKAGING

All material shipped to Quantum Imaging is to be packaged in containers that will prevent damage during the shipping and receiving process. To prevent damage related to Electrostatic Discharge (ESD), ESD sensitive parts must be packaged using anti-static materials or approved static shielding bag; and it is preferred that non-ESD sensitive parts be packaged using anti-static materials. Electronic component and hardware packaging should be sealed or closed in such a way to prevent materials from falling out of the packaging (preferably using an ESD label).

Q18 – CONFLICT MINERALS

Seller agrees to review and comply with Buyer's Conflict Minerals Policy/Public Statement and to use commercially reasonable efforts to:

- Identify whether such goods contain Tantalum, Tin, Tungsten or Gold
- Conduct a reasonable Country of Origin inquiry regarding the origin of such minerals in such goods to determine whether such minerals originated in covered countries as defined in Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act
- If such materials originated in covered countries, conduct due diligence on the chain of custody of the source of such minerals for the purpose of identifying the smelter of said minerals
- Assist Buyer in conducting reasonable due diligence concerning the smelters of such minerals.
- Seller shall include the substance of this Quality Clause to all sub-tier suppliers.
- Seller shall provide Buyer of reasonable documentation of Seller's and sub-tiers due diligence efforts.

Q19 – LOT/PART IDENTIFICATION

Supplier shall identify all containers, packing lists or certification with Supplier Name, PO Number, Item Number, Quantum Imaging part number/revision, Suppliers part number (if applicable), lot date code/serial number (if applicable) and any waivers/deviations that apply. If size permits each individually packaged item is to be labeled with Quantum Imaging Part Number and Revision, Supplier Part Number (if applicable), Supplier ID (cage code), Date Code and Serial Number (if applicable). If deviations or waivers apply, the deviation/waiver number must be marked on the part (if appropriate) or on the item label.

Q20 – Product Safety

Seller agrees to plan, implement, and control the processes needed to assure product safety during the entire product life cycle, as appropriate to the organization and the product.

NOTE: Examples of these processes include:

- Assessment of hazards and management of associated risks;
- Management of safety critical items;
- Analysis and reporting of occurred events affecting safety;
- Communication of these events and training of persons.