



QUALITY ASSURANCE PROVISIONS (QAP) EFFECTIVE 08-02-2022

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**QUANTUM IMAGING/SCD.USA Infrared LLC
QUALITY ASSURANCE PROVISIONS
PLEASE NOTE THAT QUANTUM IMAGING AND SCD.USA
Infrared LLC ARE SEPARATE BUSINESS UNITS AND WHAT
THIS MEANS TO ALL SUPPLIERS FOR EITHER COMPANY
IS IF A PO IS ISSUED BY QUANTUM IMAGING ANY
AUTHORIZATIONS REQUIRED WILL BE ADDRESSED BY
THE RESPONSIBLE PARTY AT QUANTUM IMAGING AND
IF A PO IS ISSUED BY SCD.USA Infrared LLC ANY
AUTHORIZATIONS REQUIRED WILL BE ADDRESSED BY
THE RESPONSIBLE PARTY AT SCD.USA Infrared LLC**

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SUMMARY

1. Quality Assurance Provisions will be communicated to Suppliers (herein known as Seller) on Quantum Imaging or SCD.USA Infrared LLC (herein known as Buyer) Purchase Orders (PO's). If Quality Assurance Plans (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 Sellers with conformance. For all items where a Seller procures material or services from another source, that Seller is responsible for flowing down the requirements to their Sub-tier suppliers. 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

1. Seller shall, during performance of this PO, maintain a Quality Control organization and systems acceptable to Quantum Imaging/SCD.USA Infrared LLC.
2. Seller is responsible for implementing and maintaining an acceptable Quality Management System (QMS) such as ISO 9001.
3. The Sellers QMS must be approved prior to manufacture of purchased product. Seller will provide 3rd party certifications such as AS9100, AS9110, AS91120, ISO 9001, ISO 13485 or ISO 160949 or will be ISO9001-2015 compliant (compliance will require an internal audit performed by the Quality representative at Quantum Imaging or SCD.USA Infrared LLC) as applicable, and is subject to review by Quantum Imaging or SCD.USA Infrared LLC or their customers at any time within normal business hours.
4. Seller is responsible for ensuring that all sub-tier Sellers comply with the applicable requirements of the PO.

Q2 - SELLER SUB-TIER SUPPLIER MANAGEMENT

1. Sellers will flow down all applicable requirements of the PO to their sub-tier suppliers and be responsible to ensure conformance from sub tier suppliers. Requirements may come from any one or more of the following as incorporated in the Purchase Order.
 - Drawings / Specifications
 - Statement of work
 - Terms and conditions
 - Quality Notes
 - Purchase Order line item and/or Header text
 - DD form 254 Department of Defense Contract Security Classification Specification
 - Material Line-item Defense Priorities and Allocations System (DPAS) Rating
2. Seller shall act in good faith and in the best interest of Quantum Imaging or SCD.USA Infrared LLC and their customer in determining applicability.
3. Sellers will provide advance notification and gain approval for engineering or process changes, discovery, or suspicion of nonconformances, and provide retention of records needed to show conformance to this Purchase Order's requirements, per applicable Quality Notes, and be subject to review upon request.
4. Sellers will provide notification, and documentation, if they or their sub-tier supplier receives any kind of Government Corrective Action Request (GCAR) related to goods, services, or system nonconformances associated with the PO.

Q3 - MATERIAL SAFETY DATA SHEET (MSDS)

1. 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

1. Quantum Imaging or SCD.USA Infrared LLC, and their customers, reserves the right to perform inspections, audits, evaluations, reviews, and/or witness the execution of the processes being performed at the Seller's facilities, within normal business hours, in support of this order and reserves the right to bring our customers or government representatives to the above said activities. 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, comply 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

1. MRB authority is not in effect unless specifically granted in writing by Quantum Imaging or SCD.USA Infrared LLC. Nonconforming material shall not be shipped unless approved by Quantum Imaging or SCD.USA Infrared LLC in writing. Additionally, the Seller 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

1. Quantum Imaging and SCD.USA Infrared LLC First Article Inspection (FAI) Process
 - 1.1. An independent First Article Inspection conforming to the requirements of AS9102 is required for items manufactured, assembled and tested to Quantum Imaging or SCD.USA Infrared LLC controlled drawings and specifications unless otherwise specified in documentation attached to this PO. Seller 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 or SCD.USA Infrared LLC. Seller shall notify Quantum Imaging or SCD.USA Infrared LLC 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.
 - 1.2. Commercial-Off-The-Shelf (COTS) and MIL-STD/Defense Electronic Supply Center (DESC) parts are exempt from this requirement. A Seller that is unable to comply with the FAI requirements identified herein shall submit an alternative FAI plan to the Quantum Imaging/SCD.USA Infrared LLC 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/SCD.USA Infrared LLC, based on the Seller's records shall receive a new FAI.*

A Quantum Imaging/SCD.USA Infrared 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 to Quantum Imaging/SCD.USA Infrared LLC for 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. If Source Surveillance is required, or Quantum Imaging/SCD.USA Infrared LLC participates, the Seller performs the complete FAI and subsequent delta FAIs. The SCD.USA/Quantum Imaging supplier quality representative may witness any FAI activity performed. Upon completion, Quantum Imaging/SCD.USA Infrared LLC Source surveillance or Seller 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. Seller will maintain a record of FAI completion status to support and future customer visit.*

3. Requirements for FAI

3.1. Inspection And Test:

3.1.1. 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 criteria identified in AS9102 paragraphs 5.3-5.3.4. Quantum Imaging/SCD.USA Infrared LLC reserves the right to request to increase quantity for required First Article if required.

3.2. Minimally dimensioned drawings:

3.2.1. When a Quantum Imaging/SCD.USA Infrared LLC 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.

3.3. Production runs:

3.3.1. Seller shall not commence production of units beyond the first production lot unless authorized by the Quantum Imaging/SCD.USA Infrared LLC Buyer or designee. Hardware produced beyond the first production lot without the Quantum Imaging/SCD.USA Infrared LLC Buyer's approval shall be at the sole risk of the Seller.

3.4. Nonconformance Handling:

3.4.1. The FAI is not complete until the Seller closes all non-conformances affecting the part/report.

3.5. Other Obligations:

3.5.1. Neither acceptance of first product, nor pre-production sample, nor Quantum Imaging/SCD.USA Infrared LLC 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/SCD.USA Infrared LLC 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/SCD.USA Infrared LLC Buyer.

Q7 - ONE-WAY TRACEABILITY

1. 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.
2. 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
3. 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.
4. The system shall provide a means of correlation between the data derived from the testing, inspection, and processing of the supplies.
5. 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.
6. The Seller is required to apply the above system to any sub-tier suppliers.
7. 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 unless identified differently via a Record and Data Retention Quality QAP.

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.*

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

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 – RECORD AND DATA RETENTION (7 YEARS)

1. All Records and data needed to show conformance to this Purchase Order must be maintained, remain legible, readily identifiable, and retrievable and be made available for audit for a minimum of (7) years or longer if required by law or this Purchase Order.
2. This requirement shall flow down this requirement to the manufacturer.
3. Distributors of Commercial-Off The-Shelf (COTS) items or Military Standard part numbers are only required to retain records of traceability to manufacturer, manufacturer part number and date code.
4. 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 Seller, and upon request, shall be available and provided for Quantum Imaging/SCD.USA Infrared LLC review, for a period of 7 years (minimum) after the final shipment of material against this PO. If computer generated data is supplied, Seller shall submit to Quantum Imaging/SCD.USA Infrared LLC, an interpreter instruction listing and describing test or sequence number versus Quantum Imaging/SCD.USA Infrared LLC drawing parameters. This requirement is complementary to any requirement established elsewhere within this PO to provide copies of such data with deliveries.
5. 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
6. Seller shall receive Quantum Imaging/SCD.USA Infrared LLC approval prior to destroying / disposing of any record throughout the retention period required and at the end of the retention period, contact Quantum Imaging/SCD.USA Infrared LLC BEFORE destroying/disposing of anything required to be retained by this Quality Note. Quantum Imaging/SCD.USA Infrared LLC reserves the right to acquire or inspect all records needed to show compliance to Purchase Order requirements.

Q9 – SELLER RETAINED DATA FOR (10) YEARS

1. Records of inspection and test data must be maintained by the Seller 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 Seller, and upon request, shall be available and provided for Quantum Imaging/SCD.USA Infrared LLC review, for a period of 10 years (minimum) after the final shipment of material against this PO. If computer generated data is supplied, Seller shall submit to Quantum Imaging, an interpreter instruction listing describing test or sequence number versus SCD.USA/Quantum Imaging drawing parameters. This requirement is complementary to any requirement established elsewhere within this PO to provide copies of such data with deliveries.
2. This requirement shall flow down this requirement to the manufacturer.
3. Distributors of Commercial-Off The-Shelf (COTS) items or Military Standard part numbers are only required to retain records of traceability to manufacturer, manufacturer part number and date code.
4. 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
5. At the end of the retention period, please contact SCD.USA/Quantum Imaging Buyer BEFORE destroying/disposing Seller shall receive SCD.USA/Quantum Imaging approval prior to destroying / disposing of any record throughout the retention period required and at the end of the retention period, contact SCD.USA/Quantum Imaging BEFORE destroying/disposing of anything required to be retained by this Quality Note. SCD.USA/Quantum reserves the right to acquire or inspect all records needed to show compliance to Purchase Order requirements.

Q10 – REQUIREMENTS FOR SUBMITTAL OF INSPECTION AND/OR TEST DATA

1. 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.
2. Seller shall ensure the requirements of this document are flowed to and complied with by sub-tier suppliers and processors and that sub-tier data required herein is provided to Quantum Imaging/SCD.USA Infrared LLC.
3. Seller shall ensure that data submitted covers the specific lot of the material being shipped.
4. 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/SCD.USA Infrared LLC 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 specific 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.
 - If computer generated data is created, Seller shall generate an instructional package tracing Seller’s test or sequence number to the drawing parameters.
 - For Military, Federal, or Commercial-Off-The-Shelf (COTS) part number(s), Seller’s standard testing data shall satisfy the requirements of this Quality Note.
 - 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. Sub-tier Supplier or original manufacturers name (if different from Seller)
 3. Seller’s PO number including revision number if applicable

4. Buyer's part number and Purchase Order number
 5. Drawing/specification/supplier planning revision level, Number of items in lot
 6. Number of items inspected
 7. Sampling Plan Level (AQL %)
 8. Lot code designation (lot number or date code)
 9. A summary listing of all (drawing notes where applicable), blueprint dimensions, process requirements, specification performance levels etc. (attributes) and their corresponding tolerance limits.
 10. Test/Inspection results
 11. Computer Test instruction package, as applicable
 12. Date of test and inspection
 13. Authorized agents name and position, or acceptance stamp, and date. (Electronic signature is acceptable)
5. Inspection test results may be recorded in either of the following formats, or a combination thereof, as applicable and the Sellers discretion.
- 5.1. Attribute Results: Indicate for each attribute if each item inspected and whether it falls within tolerance requirements.
 - 5.2. 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.*
6. Quality Approval: Data sheets/test reports shall bear evidence of acceptance by Seller's title, signature (or stamp) and date signed.
 7. 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

1. Seller shall have documented internal systems or processes that includes provisions to identify, segregate, and control nonconforming material to ensure the Seller does not ship nonconforming material.
2. Seller is not granted Material review Board (MRB) authority for this Purchase Order unless specifically authorized or unless item is a COTS item.
3. Seller is not authorized to build "at their risk" by obscuring or altering nonconforming material conditions prior to receiving approval.
4. Seller is authorized to make the following dispositions:
 - Rework to product requirements
 - Scrap
 - Return to Vendor
5. Seller is not authorized to make the following dispositions:
 - Use as Is (UAI)
 - Repair
 - If the Seller determines that a UAI or Repair disposition is needed, the Seller shall request in writing from Quantum Imaging/SCD.USA Infrared LLC for authorization to Ship, build at risk and or other disposition.

6. Requests for Variance: If the Seller determines the need to depart from requirements for a specified number of units or period-of-time in advance of a nonconforming condition, the Seller shall request approval in writing, from the buyer.
7. Post Delivery Nonconformance: When nonconforming conditions are determined to include material already delivered to the buyer, the Seller shall immediately notify Buyer by issuance of a Notice of Escape.
8. All material found to be defective per Quantum Imaging/SCD.USA Infrared LLC, here to referred to as buyer, specification(s) at the Seller's facility must be withheld from shipment to buyer until the non-conformances have been reported to the Quantum Imaging/SCD.USA Infrared LLC Supply Chain Representative (Buyer) and analyzed by the Quantum Imaging/SCD.USA Infrared LLC 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/SCD.USA Infrared LLC Quality Manager and Engineering Manager.
9. Seller shall submit all requests or notifications in the Sellers format and shall include with each submission at a minimum:
 1. Applicable Purchase Order;
 2. Description of the Variance, or Nonconformance including is and should be conditions;
 3. Quantities and locations of impacted materials;
 4. Rationale for acceptance and proposed disposition, as applicable;
 5. Containment actions taken or planned, and
 6. Corrective actions taken or planned.

Q12 - COUNTERFEIT PARTS

1. Seller 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/SCD.USA Infrared LLC. Only new and authentic materials are to be used in products delivered to Quantum Imaging/SCD.USA Infrared LLC. 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.
2. If suspect counterfeit parts are furnished to Quantum Imaging/SCD.USA Infrared LLC and are found on any of the goods delivered, such items will be impounded by Quantum Imaging/SCD.USA Infrared LLC. The Seller shall promptly replace such suspect/counterfeit parts with parts acceptable to Quantum Imaging/SCD.USA Infrared LLC.
3. All occurrences of suspect counterfeit or counterfeit parts should be immediately reported to Quantum Imaging/SCD.USA Infrared LLC and ERAI (an information service organization that monitors, investigates, and reports issues affecting the global supply chain of electronics).
4. The Seller is responsible to flow down the applicable requirements of AS5553 to all applicable sub-tier suppliers.

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

1. The Seller shall establish and maintain an effective Foreign Object Damage (FOD) Program to reduce FOD using NAS412 as a guideline.
2. 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.
3. 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)

1. the Seller is responsible to establish and implement an ESD Control Program compliant with the latest revision of MIL-STD-1686 and/or HESD625 for electrical and electronic parts, assemblies, and equipment susceptible to damage from Electrostatic Discharge (ESD).
2. 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.
3. Packaging shall be marked with an ESD cautionary note or symbol.
4. 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.
5. 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 within 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)

1. Seller shall affirmatively certify Seller and Seller's sub-tier supplier performed and completed all requirements of the Purchase Order by submitting a Certificate of Conformance (C of C) with each shipment to include a signature of an authorized representative. Electronic Signature is acceptable.
2. 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/SCD.USA Infrared LLC 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) and/or Lot/Batch/Heat numbers of product shipped
 - Statement of conformance to all Purchase Order requirements
 - Signature of Seller's authorized agent and date

Q16 – SELLER CHANGE REQUEST/NOTIFICATION FOR SCD.USA/QUANTUM IMAGING

APPROVAL

NOTE *This does not apply to commercial off the shelf (cots) items*

1. All communication, technical guidance and instructions having contractual impact shall be accomplished directly between Quantum Imaging/SCD.USA Infrared LLC Buyer and Seller's authorized representative,
2. 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/SCD.USA Infrared LLC Buyer. This includes, but is not limited to changes to Quantum Imaging/SCD.USA Infrared LLC directed sub-tier sources, facility relocations, new equipment, etc. Impact to form, fit or function will be assessed by the impacted programs.
3. Prior to implementing a change, the Seller shall submit a written request notifying Quantum Imaging/SCD.USA Infrared LLC Buyer and Engineering manager of the change. Quantum Imaging/SCD.USA Infrared LLC will communicate results back to the Seller via the Buyer.
4. It is the Seller's responsibility to fully comply with all the instructions listed on the Quantum Imaging/SCD.USA Infrared LLC Purchase Order and Quantum Imaging/SCD.USA Infrared LLC Terms and Conditions. Lack of written approval SHALL NOT relieve the Seller of the responsibility to fully comply with all requirements of the Purchase Order. The Seller SHALL NOT receive compensation in any form from Quantum Imaging/SCD.USA Infrared LLC for any unauthorized activity.

Q17 – PACKAGING AND SHIPPING

1. All receivable material shipped to Quantum Imaging/SCD.USA Infrared LLC 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).
2. Seller shall ensure items supplied and the packaging will not be a source of Foreign Object Damage (FOD) and/or other contaminants.
3. Seller shall include any inspection data and/or certifications, as required by the PO and any documents referenced therein, with each shipment.
4. Seller shall include a packing sheet which will include:
 1. Packaging sheet number
 2. PO Number
 3. PO Line-item material numbers
 4. Quantity being shipped

Q18 – CONFLICT MINERALS

1. 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

1. Unless otherwise specified, Seller shall identify all containers, packing lists or certification with Seller Name, PO Number, Item Number, Quantum Imaging/SCD.USA Infrared LLC part number/revision, Seller’s 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/SCD.USA Infrared LLC Part Number and Revision, Seller Part Number (if applicable), Seller 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

1. 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.
2. 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; and
 - Communication of these events and training of persons.

Q21 – SPECIAL PROCESS CONTROL

1. A Special Process is defined as a process where the resulting output cannot be verified by subsequent monitoring or measurement. Use of NADCAP or Quantum Imaging/SCD.USA Infrared LLC approved sources DOES NOT absolve the Seller of their responsibility to monitor Seller performance, provide acceptable processes, products, and services to Quantum Imaging/SCD.USA Infrared LLC and comply with all specification and quality requirements.
2. The requirements of this clause are applicable in full to all items (including lower-level items) that carry a Quantum Imaging/SCD.USA Infrared LLC part number. Quantum Imaging/SCD.USA Infrared LLC requires Special Process Control for the following applications in Section 1 below. The requirements detailed in this clause only apply to Special Process requirements flowed down through this clause being called out on the Quantum Imaging/SCD.USA Infrared LLC Purchase Order. This requirement is applicable to all parts processed, assembled, manufactured, inspected, or tested at the Seller's facility or its sub-tier supplier.
3. Exceptions of this clause are as follows:
 - Piece parts, components and/or assemblies that are manufactured in accordance with (or manufactured to meet the requirements of) a Military Federal or Commercial Specification Part Number are exempt from the requirements of this document. Examples include JANTX, M39014, MS15795, NAS, RNR, MIL-PRF-39012, etc.
 - This exemption includes all COTS (Commercial-off-the-shelf) parts, except when a seller's COTS item has been modified in any way to meet a Quantum Imaging/SCD.USA Infrared LLC requirement, i.e. modified or militarized COTs, as prescribed in the Quantum Imaging/SCD.USA Infrared LLC drawing, Statement of Work (SOW) or Purchase Order in which case The requirements detailed in this clause only apply to Special Process requirements flowed down through this clause being called out on the Quantum Imaging/SCD.USA Infrared LLC Purchase Order.
 - Special Process suppliers designated by Name/location as a required source within a Quantum Imaging/SCD.USA Infrared LLC drawing requirement are exempt from the requirements of this document.
 - Sellers who are the design authority for the product being procured by Quantum Imaging/SCD.USA Infrared LLC are exempt front the requirements of this document. This exemption is extended to materials procured against a performance-based SOW of performance-based specification.
 - Where a general special process category (ex: heat treating) is being performed, but the specification is not listed in the Approved Supplier List, the requirements of this document shall be managed by the sell in accordance with their Quality Management System (QMS).
4. Requirements for suppliers performing the Special Processes that are defined in Section 1 shall meet the following:
 - NADCAP accreditation

5. Requirements for Sellers performing Special Process are defined as:
- **Plating and Chemical Finishing Processes:** Examples include, but are not limited to: Conversion Coating, Passivation, Oxide Coating, Anodic Coating, Vapor Deposited Coating, and Plating
 - **Welding and Brazing Processes:** Examples include, but are not limited to: Fusion Welding, Spot Welding, Arc Welding, Resistance Welding, Friction Stir Welding, Electron Beam Welding, Brazing and Diffusion Bonding.
 - **Non-Destructive Testing (NDT):** Penetrant, Magnetic Particle, Radiography, Ultrasonic, and Eddy Current.
 - **Heat Treating Processes:** Examples include, but are not limited to: Annealing, Hardening, Tempering, Precipitation Hardening, Aging, and Chase Hardening. Also included are thermal treatments specified by drawing callout such as Stress Relieving, Thermal Cycling and Stabilization Treatments.
 - This requirement does not apply to heat treatment processing that is controlled by an
 - **Paint Application Processes:** Examples include, but are not limited to: Paint Application in accordance with MIS-41252, MIS-47255, WS-9778, or WS-9780. Only suppliers listed in the AVL shall be used for the specifications listed; NADCAP accreditation is not accepted by SCD.USA/Quantum Imaging at this time. If paint specification is not listed on the drawing, then SCD.USA/Quantum Imaging supplier approval is not required.

Q22 – ENGINEERING AND PROCESS CHANGE MANAGEMENT

1. Seller shall establish baselines:
 - 1.1. Engineering documentation baselines shall be established and frozen as a result of qualification activities.
 - 1.2. For hardware that does not have requirements for qualification, the initial full First Article Inspection (FAI) shall form the baseline.
 - 1.3. Once engineering and process baselines are established, Seller shall control changes to both the engineering and process baselines. Seller is not authorized to build hardware “at their risk” by incorporating proposed engineering and/or implementing process or tooling change(s) prior to receiving Quantum Imaging/SCD.USA Infrared LLC Buyer approval as defined in this document.

NOTE: *This Quality Note does not apply for changes to Commercial-Off-The-Shelf (COTS) component(s) within the item(s) on this Purchase Order, however, changing a non-COTS TDP to allow a new COTS part number not previously described shall be considered a change. In the case of COTS components with modifications, the modifications are subject to the controls in this Quality Note.*

This Q-Note does not apply to raw material unless that raw material requires qualification beyond industry standard. Changing a non-COTS TDP to allow a new raw material not previously described shall be considered a change.

Raw material is defined as a basic substance in its natural, modified, or semi processed state which is used as an input to a production process for subsequent modification or transformation into a finished good.

2. Seller shall assign one of the following classifications for each proposed change:

- a) Major/Minor Changes
 - Class I (Major)
 - Class II (Minor)
- b) Class III Changes

2.1. Class I (Major) Changes

2.1.1. The following definition of Class I change classification is modeled after EIA-649 Table 4, titled "Typical Major Change Criteria." Class I (Major) Change Criteria:

- A change that affects specified and approved requirements for product attributes, including safety, reliability, and supportability.
- A change, after establishment of the baseline for the product design or implementation of the product design, that affects compatibility with interfacing products, including such products as test equipment, support equipment and associated software, programmable logic devices and/or firmware and products furnished by a customer or that affects one or more of the following:
 - Delivered operation or servicing instructions
 - Required calibration to the extent that product identification should be changed
 - Interchangeability or substitutability of replaceable products, assemblies, or components
 - Change to add a previously non-qualified supplier, where supplier selection is specified
 - User skills or user physical attributes, e.g., the proposed change requires the customer to impose a height or strength requirement to operate the product
 - Operator or maintenance training, e.g., the proposed change requires the customer to change how they train the Operator to use the product, or requires the customer to change how they maintain the product
 - Changes which require retrofit of delivered products, e.g., by product recall, modification kit installation, attrition, replacement during maintenance using modified spares
- Any change in the manufacturing process (routers, work instructions, procedures, etc.) that changes or alters the configuration, composition, or physical properties of the item produced
- Changes to material, including chemical or physical properties, from which the product is manufactured
- Adding any material to the deliverable item that is not called out in the approved manufacturing or engineering documentation
- Changes to Acceptance Test Procedure(s)
- Changing the functional capabilities and purpose of test equipment
- Any change to characteristics noted on the drawing or STAMP package on this Purchase Order
- Class I change in sub-tier supplier's process, tooling, or engineering
- Changing a non-COTS TDP to allow a new COTS part number not previously described that does not meet all specifications of the existing COTS part.

- A change that does not impact the above criteria and would otherwise be classified as minor but does result in an increase in cost/price to Quantum Imaging/SCD.USA Infrared LLC, including incentives and fees, guarantees, warranties, and contracted deliveries or milestones. Routine service or maintenance does not require submission of a change notice request.

2.2. Class II (Minor) Changes

2.2.1. Any change that is not a major change as defined above. Any Class II change will be determined to be Class I if it affects the form, fit, or function of the end item(s) specified on the Purchase Order. The following are examples of changes that are Class II Minor changes:

- Adding a new sub-tier supplier to produce a part
- Changing a non-COTS TDP to allow a new COTS part number not previously described that meets or exceeds all specifications of the existing COTS part.
- Changing the source of a material or sub-component where supplier selection is not specified within the Raytheon TDP.
- Changing the location of the internal or external site where some or all of the work is being performed, including movement of the production line equipment
- Using different types of tools to produce the item on this Purchase Order (this does not include consumable tooling) • Changing to new or alternate production line machines or equipment
- Class II change in sub-tier supplier's process, tooling or engineering
- Changing the Sequence of an operation, method of an operation, adding or deleting an operation (minor only if applied to baseline changes)
- Changes in any machine programming (e.g.: CMM, NC machine, OI programming).
- Changes to qualified inspection techniques or equipment (as opposed to calibrated test equipment): reduction, change in technique, etc.
- Changing attributes of the test equipment that does not affect the functional capabilities and purpose of test equipment

2.3. Class III Changes

2.3.1. Class III changes apply to manufacturing-level documentation only and shall have no effect on processing sequence or process parameters. Class III changes are:

- Corrections to spelling
- Correcting typographical errors
- Adding or deleting non-directive (reference) photos
- Correcting grammatical errors • Adding cautionary (personnel/hardware protection) notes
- Updating document format

3. Submitting the Change

3.1. Seller will submit the change requests and any necessary supporting documents to the Buyer for approval.

3.2. Requirements for the change submittal are as follows:

- All Class I (Major) and Class II (Minor) changes require Quantum Imaging/SCD.USA Infrared LLC Buyer approval prior to implementation.
- Notification of all Class III changes shall be made available if requested by Quantum Imaging/SCD.USA Infrared LLC.

- Quantum Imaging/SCD.USA Infrared LLC Document/Purchase Order revision changes require notification prior to implementation.
 - Class III changes shall contain at a minimum the following:
 - A brief statement/purpose of the identified change(s)
 - Part number
 - Document name or identifier
- 3.3. Before and after revision levels of affected documents listing the document page number and paragraph where the change was implemented
- 3.4. If Seller has any question(s) about the class or subtype (process vs engineering) of change being submitted, they should contact the Buyer for clarification prior to the submittal of the change request.

Q23 – MALWARE AVOIDANCE

1. Seller shall maintain the following internal processes to control and prevent malware, defined as viruses, malicious code, Trojan horse, worm, time bomb, self-help code, back door, or other software code or routine designed to: (a) damage, destroy or alter any software or hardware; (b) reveal, damage, destroy, or alter any data; (c) disable any computer program automatically; or (d) permit unauthorized access to any software or hardware:
 - 1.1. Seller shall maintain a malware management process for the underlying manufacturing information systems used in building the electronic assembly. This process shall consist of continuously monitoring the manufacturing information systems to ensure absence of malware, using up-to-date commercially available anti-virus software. The Seller shall maintain evidence of the continuous monitoring (include name/version of the anti-virus software, and scanning machine name/serial number)
 - 1.2. For deliverable assemblies that contain only Commercial-of-the-Shelf (COTS) software or Free and Open Source Software (FOSS) including commercially available operating systems (e.g., Windows, Linux, Mac, and VxWorks), the Seller shall implement a process of scanning these assemblies to ensure that they are free of malware, using up-to-date commercially available anti-virus software. The Seller shall maintain evidence of the scan occurrences (include date of scan, assembly part number, name/version of the anti-virus software, and scanning machine name/serial number).
 - 1.3. Seller shall immediately notify the Buyer with the pertinent facts if the Seller becomes aware or suspects that assemblies delivered in accordance with the Quantum Imaging/SCD.USA Infrared LLC Purchase Order contain any malware.
 - 1.4. Seller shall provide evidence of these two processes to Quantum Imaging/SCD.USA Infrared LLC upon request.

Q24 – RETURNED MATERIAL FAILURE ANALYSIS REPORTING

1. Seller shall create a Failure Analysis Report (FAR) for all returned material, and shall include it in each shipment back to Quantum Imaging/SCD.USA Infrared LLC. At a minimum, this report shall contain the following information:
 - Part number listed on the Purchase Order
 - Serial number(s) for serialized material and date code(s) and/or Lot ID(s) for non-serialized material
 - Failure description
 - Actions taken to correct the nonconformance including rework, repair or replacement
 - Root cause (including any failure analysis results)
 - Corrective action taken to preclude recurrence (including effectivity and trend/risk information)
 - Seller's point of contact
 - Both the original and new serial number(s), Date code(s), and/or Lot ID(s) as applicable if the material is replaced instead of the nonconformance being corrected
2. If a complete failure analysis is not available at the time of shipment, the Seller shall create a preliminary FAR and include it with the shipment of the returned material.
 - 2.1. The Preliminary FAR shall contain the information required in Requirement 1, as applicable at the time of shipment.
3. Seller shall send the formal FAR to the Buyer specified on the Purchase Order within 30 days of the material being received by the supplier.
 - 3.1. If necessary, an extension may be obtained through the Buyer.
4. Seller shall contact the Buyer when the supplier Can Not Duplicate (CND) the failure to request further direction prior to returning the material.
 - 4.1. Seller shall not ship the returned material without the Buyer's approval.
5. Seller shall include evidence of Buyer approval to return the material with the shipment of the returned material.
 - 5.1. Seller shall clearly indicate CND (Can Not Duplicate) on the FAR.
6. Seller shall include in the FAR the data from the tests/evaluations that were performed which determined the CND condition.
7. Seller to deliver the following data to the Buyer for Approval:
8. Complete or preliminary FAR shall be included with the shipment of the returned material and sent to the Buyer
9. Data from tests/evaluations performed which determined the no fault condition shall also be included in the FAR, as applicable

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