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SCOPE AND PURPOSE

To describe the Purchase Order quality requirements as "Q" Clauses which are applied to each Purchase Order issued for direct parts at Sensintel.

The quality system described in this section of the QMS conforms to the requirements of ISO 9001:2008/AS 9100:2004 - Element 7.4.2 Purchasing Information.

This procedure applies to purchase orders placed for the realization of product.

RESPONSIBILITY AND AUTHORITY (R&A)

The Quality Engineer/designee is responsible for ensuring product ordered for the realization of product has the proper Q Clauses assigned to it.

The QA Manager or assignee is responsible for the accuracy of this procedure. The QA Manager/assignee will approve all requests for changes to the process.

DEFINITIONS

Q Clauses Quality Assurance requirements applied to purchased items
FAI First Article Inspection

PROCEDURE

Quality Group Codes and/or additional requirements, as required, to be flowed down to sub-tier suppliers will appear on or be attached to the Purchase Order in accordance with QP-7-4, Purchasing Procedure.


REQUIREMENTS

"Q" Clause Groupings are assigned for 11 basic groups. They are as follows:

GROUP 1 Electronic Component:
Clauses - Q1, Q2, Q3, Q4, Q10, Q27, Q28 & Q43

GROUP 2 Complex Electronic Components:
Clauses - Q1, Q2, Q3, Q4, Q10, Q27, Q28, Q43 & *

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*Q5, Q6, Q7, Q7A, Q9, Q11, Q12, Q12A, Q13, Q14, Q15, Q17 Q18, Q31, Q40, Q43A & Q43B will apply as appropriate and will be indicated on the purchase order.

GROUP 3 Connectors, Wire and Cable:

Clauses - Q1, Q2, Q3, Q4, Q10, Q28 & Q43

GROUP 4 Circuit Boards:

Clauses - Q1, Q2, Q3, Q4, Q10, Q18, Q29, Q43 & *

* Q5, Q6, Q7, Q7A, Q8, Q9, Q11, Q12, Q12A, Q17, Q40, Q43A & Q43B will apply as appropriate and will be indicated on the purchase order.

GROUP 5 Mechanical Hardware (Screws, Bolts, Nuts, etc.):

Clauses - Q1, Q2, Q3, Q4, Q10 & Q43

GROUP 6 Mechanical Parts:

Clauses - Q1, Q2, Q3, Q4 Q9, Q10, Q43 & *

*Q5, Q6, Q7, Q7A, Q8, Q11, Q12, Q12A, Q15, Q16, Q19, Q20, Q22, Q23, Q24, Q25, Q26, Q31, Q40, Q42, Q43A & Q43B will apply as appropriate and will be indicated on the purchase order.

GROUP 7 Chemical Based Parts:

Clauses - Q1, Q2, Q4, Q10, Q21, Q30, Q43 & *

* Q14 for Primers, Paints, Coatings and Potting Compounds ONLY.

GROUP 8 Certification of Compliance:

Clauses - Q1, Q2, Q4, Q8 & Q10

GROUP 9 Ship to Stock:

Clauses – Q4, Q10 & Q32

GROUP A Missile Containers:

Clauses- Q1, Q2, Q3, Q7, Q10, Q11, Q12, Q15, Q18, Q21, Q30 & Q43


GROUP B Metal Material, Bar Stk. Sheet, plate, etc.

Clauses - Q1, Q2, Q3, Q10, Q11, Q18, Q24, Q32, Q42, & Q43

"Q" CLAUSES:

Q1. SURVEILLANCE. The authorized Quality Representative of Sensintel shall have the right to maintain cognizance over the Quality Assurance inspection system imposed on the Seller. Accordingly the Seller is expected to grant the designated representative

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access to his facility at all reasonable times and access to areas where the production of the item(s) covered by this Purchase Order is taking place. Where these areas infringe on Seller's proprietary processes of a sensitive nature, or involve security with respect to other Seller products being fabricated, mutually satisfactory arrangements shall be made with Sensintel. The Government and or Sensintel's Customer have the right to inspect any or all of the work included in this Purchase Order at the Seller's facility.

Q2. DISCREPANCIES. The supplier shall notify Sensintel within 24 hours or the next business day of any nonconforming product found in inventory from which product may have been delivered to Sensintel. During your performance, any deviations noted from established drawings or specifications must be reported to Sensintel within 24 hours or the next business day. No deviation will be considered approved without written confirmation of the fact from Sensintel. Under no circumstances are repairs to be undertaken without prior written approval.

Q3. CORRECTIVE ACTION. Acceptance of this Purchase Order obligates the Seller to perform, upon request, a corrective action investigation when discrepant material is received by Sensintel. A written report shall be furnished, within a reasonable time period, which is specific and conclusive to prevent a recurrence of the discrepancy.

Q4. SELLER CONTROLLED PARTS. Items furnished under a Purchase Order for which no Sensintel drawing exists (being proprietary with the Seller or under his design cognizance) will be accompanied on the initial shipment by a copy of the Seller's drawing, specifications, catalog page, etc., to facilitate Sensintel's Receiving Inspection. It is understood that data supplied is not expected to be of a sensitive proprietary type. The Seller shall notify Sensintel in writing of any changes proposed in product design, fabrication methods, materials, or processes of proprietary products, including those procured from secondary sources and/or includes as assembly components as ordered here under, and shall obtain Sensintel's approval prior to supplying such products on this order. In event of Sensintel approval, Seller shall identify those articles on which the change is incorporated.

Q5. GOVERNMENT SOURCE INSPECTION. Government inspection is required prior to shipment from your facility. Upon receipt of this order, promptly notify the Government Representative who normally services your facility so that appropriate planning can be accomplished for Government Inspection. If no Government Representative services your facility, contact the nearest DCMC, Army, Navy or Air Force inspection office in your locality. In the event a representative or office cannot be located, contact the Sensintel Representative signing this Purchase Order. Evidence of Government Inspection must be supplied on all shipping documents.

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Q6. SENSINTEL SOURCE INSPECTION. The supplies on this order are subject to Sensintel's source inspection. When material is ready for inspection, or when practicable, 3 days in advance thereof, notify the Sensintel representative indicated on the face of this order. Where the Seller causes Sensintel 's inspectors to make unnecessary trips due to erroneous information, or repeatedly submits requests for inspection of material not in accordance with Purchase Order specifications, Sensintel has the right to charge the cost of such trips to the Seller. Acceptance of product at source is considered preliminary. Final acceptance will be at Sensintel. The Seller is required to provide all requisite equipment, records, reports, etc., to facilitate the work of Sensintel's Quality Assurance Representative, and to verify any physical or functional specifications as may be requested by this representative in the course of the inspection.

Q7. QUALITY CONTROL SYSTEM. The Seller shall maintain a Quality Control System that complies with the latest revision of MIL-Q-9858, "Quality Control System Requirements". Notwithstanding the provisions of this clause, the Seller is in no way relieved of the final responsibility to furnish the supplies or services specified herein. This system shall be subject to audit by Sensintel's Quality Assurance Representative.

Q7A. QUALITY CONTROL SYSTEM. The Seller shall maintain a Quality Control System that complies ISO9001 or AS/EN9100. Notwithstanding the provisions of this clause, the Seller is in no way relieved of the final responsibility to furnish the supplies or services specified herein. This system shall be subject to audit by Sensintel's Quality Assurance Representative.


Q8. INSPECTION SYSTEM. The Seller shall maintain an Inspection System in conformance with the latest revision of MIL-I-45208, "Inspection System Requirements". This system shall be subject to audit by Sensintel's Quality Assurance Representative.

Q9. CALIBRATION / EQUIPMENT REPAIR and MAINTENANCE. Seller shall maintain a calibration system in conformance with the latest revision of MIL-STD-45662, "Calibration Systems Requirements", ISO 10012, "Measurement Management System – Requirements for measurement processes and measuring equipment", AS9100 rev C "Quality Management Systems", or equivalent. This system shall be subject to audit by Sensintel's Quality Assurance Representative.

For Calibration services, the supplier shall maintain a quality system that is compliant with either ANSI/NCSL Z540.1-1994 or ISO/IEC 17025:2005 or their equivalent. A certificate of calibration traceable to the National Institute of Standards and technology (NIST) is required.

Q10. CERTIFICATION OF COMPLIANCE. The Seller shall submit a certification of compliance with each shipment, signed by its Quality Manager or his authorized

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representative which states that the product or service supplied is in full conformance with all physical configuration and functional test specifications; that all raw materials used conform to applicable specifications; that any special processes employed on the product conform to applicable specifications; and that inspection and test records, physical and chemical analysis, and process control data is on file and available for examination for a period of 11 years (indefinite) unless otherwise specified on the purchase order. By furnishing this certification, Seller represents that he is the manufacturer or duly authorized distributor, or agent for the manufacturer of the product.


Q11. INSPECTION/TEST DATA. A copy of final inspection/test data for all units must accompany shipments made against this order. Data sheets must be identified by Seller's name, order number, part number, and revision level, and date of tests. Characteristics being tested shall be identified by name of test, applicable drawing or specification paragraph, inspection test limits, and method of testing along with the results of the tests.

Q12. FIRST ARTICLE INSPECTION. First articles must be inspected and accepted by Sensintel prior to a production shipment, unless otherwise specifically authorized by Sensintel. The sample lot of first articles, as specified by this order must be inspected for compliance with requirements as specified in the applicable drawing/specification, and must be so identified when shipped.

Q12A. AS9102 FIRST ARTICLE INSPECTION. First Article Inspections IAW latest revision in effect of SAE AS9102 must be performed and conducted on a sample part representative of the first production run. This shall apply to final assemblies and corresponding subassemblies and individual parts manufactured or assembled to a specific drawing. Unless otherwise specified, catalog and COTS parts do not require a FAI. Results of FAI must be completed, accepted and approved by vendors quality representative and Sensintel prior to production shipment.

Q13. ACCEPTANCE TEST PROCEDURE. Two copies of proposed Acceptance Inspection/Test Procedure for the inspection/test specified in the applicable specifications shall be submitted for Sensintel's approval thirty (30) days prior to acceptance. The procedure format shall include the parameters to be measured, step by step method of test, test equipment required, and provisions for recording results in such a manner as to permit recording of each required performance in a clear and concise form. When these procedures make reference to test fixturation for acceptance testing, a copy of the schematic of this fixturation shall be supplied.

Q14. MERCURY EXCLUSION. Each shipment made against this Purchase Order must contain a statement certifying that the item(s) supplied contain no metallic mercury or mercury compounds, and that the Seller has taken responsible steps to ensure that the

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item(s) are not contaminated with metallic mercury or mercury compounds. The certification shall reference order number, part number, description and quantity shipped.


Q15. PROCESS APPROVAL. Seller shall have on file and available for review, certifications of special processes performed by sub tier suppliers such as heat treating, finishing, etc. Special processes such as soldering, welding, heat-treating, electroplating, brazing, anodizing chemical films and non-destructive testing, shall require Sensintel's prior approval of processes, procedures and personnel qualifications as applicable. This approval must be established with Sensintel prior to fabrication under this contract. The Seller is responsible for and must certify to special process specification compliance by all of his subcontractors, and must maintain objective evidence thereof.

Q16. CRITICAL MATERIALS. This Purchase Order covers the procurement of materials or parts that have been designated as "critical". As a result, the following special Quality Assurance Requirements must be strictly applied.

- a) Due to the critical application of this material, maximum confidence of material integrity and quality is necessary. Each shipment of material must be accompanied by two (2) legible and reproducible copies which contain total and complete data, traceable to heat, lot or batch number. Traceability shall be achieved by a positive means of identifying material to its certification documentation.
- b) Material certifications shall be recorded on the testing company's letterhead and signed by a duly authorized representative of that company. Certifications supplied to Sensintel shall be the original material certifications or exact copies thereof. Transcription of any data from any material certification to the letterhead of another supplier, subcontractor etc. that did not actually perform the testing is expressly prohibited.
- c) Where the mechanical properties of the material have been altered by heat treatment or metal working processes, the mill certification, if furnished as evidence of material chemical composition, shall be accompanied by a certification which contains quantitative results of the mechanical test providing that the material supplied complies with the specification to which it was procured. The sole alternative permitted to such mill source and/or heat treatment of metal working facility certifications is a testing laboratory's quantitative chemical and mechanical test report, identifiable and traceable to the furnished deliverables.
- d) The above requirements shall be invoked by the Seller upon all suppliers/subcontractors that process or supply material designated to be a critical item acquired under this contract.

Q17. SERIAL NUMBERS. The Seller shall assign permanent, individual serial numbers to all items shipped under this Purchase Order. If Sensintel elects to supply these

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numbers, they will be listed in the Procurement Documentation. The manner of affixing the serial numbers will also be specified in the Procuring Documentation or on a Sensintel furnished drawing. Material certifications, analysis, test bars, samples, etc., shall be correlated with each serialized item.

Q18. LOT CONTROL. The Seller shall assign a common lot control number to all items in a particular manufactured lot - a lot being defined for this purpose as a quantity that has been manufactured during an uninterrupted period of time by essentially the same personnel, following a standard process and using the same equipment/facility.

Q19. PRODUCTION TOOLING. Acceptance of production tooling on this Purchase Order shall be contingent on inspection and acceptance by Sensintel. Representation of the applicable characteristics on each of the samples produced from this tooling must conform to the dimensions and tolerances as specified on the applicable drawings and specifications.

Q20. TEST SPECIMEN.

Q20.1 Weldment Samples: With the initial shipment, the Seller shall submit two (2) Weldment samples representative of the welding performed on the items shipped and in accordance with the applicable specifications.

Q20.2 Test Bars: With each shipment, the Seller shall submit one (1) raw disc representative of the entire heat or melt suitable for spectrographic test and two test bars from the melt, heat forging lot, etc. from which the items supplied came. Test bars shall be identified and correlated to certifications supplied with the shipment.


Q21. SHELF LIFE. The Seller shall furnish the date of manufacture and the shelf life expiration date on each container shipped. Items will not be accepted by Sensintel where the remaining shelf life is less than 75% of total shelf life from date of manufacture.

Q22. ULTRASONIC INSPECTION. Seller shall perform ultrasonic inspection on all items in each shipment in accordance with the requirements of the latest issue of MIL-STD-271, and transmit a copy of the inspection report with the shipment.

Q23. DYE PENETRANT INSPECTION. The Seller shall perform dye penetrant inspection on all items in each shipment in accordance with the requirements of the latest revision of MIL-L-6866 or other applicable drawing requirements, and transmit a copy of the inspection report with each shipment.

Q24. CERTIFICATION OF PROPERTIES. Each shipment must be accompanied by two (2) legible and reproducible copies of actual chemical and physical test reports identifiable with the material submitted. These reports must contain the signature and title of an

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authorized representative of the agency performing the tests and must assure conformance to specification requirements.

Q25. RADIOGRAPHIC INSPECTION. The Seller shall perform radiographic inspection on all items in each shipment in accordance with the drawing requirements and transmit both radiographs and a copy of the inspection report with each shipment.

Q26. MAGNETIC PARTICLE INSPECTION. The Seller shall perform magnetic particle inspection on all items in each shipment in accordance with the requirements of the latest revision of MIL-L-6868 or other drawing requirements, and transmit a copy of the inspection report with each shipment. The report shall reference Sensintel's Purchase Order number, drawing number, (and/or Seller's drawing number), and state inspection findings by items - each of which shall be numbered on the report and correspondingly identified in the shipment by removable tags or other means of temporary identification.

Q27. ELECTROSTATIC DISCHARGE (ESD). Electrostatic Discharge Protection shall be controlled for parts during receipt and through the manufacturing and inspection cycles, storage and shipping. Electrostatic Discharge Protection criteria, as a minimum, shall be in accordance with the latest version of MIL-STD-1686 or other applicable drawing requirements.

Q28. SOLDERABILITY. Solderable components shall meet the solderability requirements of MIL-STD-202, Method 208.


Q29. TEST SAMPLES (Coupons). The supplier shall maintain test sample(s) of each batch or lot sufficiently tested to all applicable specifications. Each test sample must be clearly and permanently marked with (1) Batch or Lot Number; (2) Date Manufactured; (3) Specification or Material Control Information; (4) Manufacturer's Designation; (5) Purchase Order Number. They must be maintained for a minimum of 4 years and be deliverable upon request to Sensintel.

Q30. MATERIAL SAFETY DATA SHEET. One copy of the MSDS for each product purchased shall accompany each shipment.

Q31. SPECIAL PACKING / SHIPPING INSTRUCTIONS. Any special requirements will be documented on the purchase order.

Q32. SHIP TO STOCK. Ship to Stock is established for Vendors who have a history of excellence in the Sensintel Quality Supplier Data System with no rejections for quality or deliveries. In recognition of this achievement Sensintel will perform a minimal receiving inspection. Sensintel will inspect documentation and for shipping damage only. Sensintel

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will closely monitor all ship to stock vendors. Sensintel quality department will evaluate all ship to stock vendors quarterly.


Q33. CERTIFICATION OF MATERIAL. The Seller shall submit legible copies of Material Certifications or Mill Test Reports for all specified material with each shipment, signed by its Quality Manager or his authorized representative, annotated with the associated purchase order number, and applicable lot or serial number.

Q40. SPECIAL PROCESSES. Work to be accomplished in performance of this PO is directly related to a SPECIAL PROCESS APPROVAL from a Sensintel customer. All work must be accomplished in accordance with this special process code referenced on the PO. Supplier/contractor and any sub-tier supplier engaged in special processing (example: soldering, cleaning, x-ray, magnetic particle, penetration inspection, welding, heat treating, and plating) shall have the special process approval by Sensintel. (Unless otherwise specified, catalog and COTS parts do not require Special Process Approval.)

Q41. PROCUREMENT OF MONITORING & MEASURING DEVICE EQUIPMENT. Sensintel's Quality Management shall designate this Q Clause to the purchase order in order for receiving inspection to be flagged that the procured items are designated for calibration. He/she will notify the calibration technician of such items for entry in the calibration system.

Q42. SPECIALITY METALS, DoD's interpretation of this specialty metals clause is that it prohibits the contractor (including its suppliers at every tier) from incorporating into military parts, components, and/or end item deliverables "specialty metals" (identified in the clause, including titanium and stainless steel) which have been melted outside the United States, its possessions, or Puerto Rico, unless certain limited exceptions set forth in the clause or DFARS Subpart 225.7002-2 apply. One such exception is for specialty metals melted in a qualifying country or incorporated into an article manufactured in a qualifying country. Those countries are listed at DFARS 225.872-1(a) or (b). Since the United States is not listed as a qualifying country, DOD does not consider it to be qualifying country. Even if a qualifying country exception applies, the source for specialty metals melted outside the United States may also have to be listed in an applicable Qualified Products List (QPL), such as that set forth in Douglas Material Specification (DMS) 2201, "Procurement From Foreign Sources - Metallic Raw Material". Please check your purchase order carefully for any such requirement. If your purchase order contains this requirement, you must comply with its provisions unless you apply for and are granted, through The Boeing Company, one or more of the limited exemptions authorized under the specialty metals clause. If your organization is issued a purchase order with the specialty metals clause, compliance to the following is strongly

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encouraged: a.) Your Quality Assurance Personnel particularly Receiving Inspection, (i.e. where in-coming material and certifications are verified), should be made aware of specialty clause requirements, and ensure that no foreign melted specialty metals are utilized to fabricate any components for use on a product to be supplied to DoD unless they are melted in a qualifying country. b.) If a distributor or other sub-tier supplier is the source of your material, ensure that the specialty metals clause requirements have been flowed down. Also take the necessary steps to ensure that your supplier provides only specialty metals (such as titanium or stainless steel) that have been melted within the United States or a qualifying country, and if required, proper certifications are issued. If your organization needs further information and/or assistance, please contact the Boeing Procurement Quality Representative assigned to your facility or identified in your purchase order.

Q43. FLOW DOWN REQUIREMENTS. All Quality Clauses indicated on the purchase order as well as requirements and specifications cited on prints and/or drawings must be flowed down to sub-tier suppliers.

Q43A. HONEYWELL. This order represents material to be used for Honeywell as the end item user. All common and unique requirements of the Supplemental Purchase Order Conditions (SPOC) Manual applies to suppliers and sub-tier suppliers.

Q43B. LOCKHEED MARTIN FLOW DOWN REQUIREMENTS. This order represents material to be used for Lockheed Martin as the end user. All common and unique requirements of Appendix QX, Supplier Quality Requirements, apply to suppliers and sub-tier suppliers.

Amendment Record

Effective Date	Revision No.	Revision
2/08/2010	-	Initial Release
5/13/2010	A	Revised record retention requirements in Clause Q10, added flowdown requirements to Groups 1, 3, 5 and 7
01/14/2014	B	Convert to Sensintel letterhead
08/27/2014	C	Remove “BAE” reference from body
02/25/2015	D	Add Q33

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