



## QUALITY ASSURANCE FORM

<b>Number:</b> QAF.01.742.002	<b>Rev:</b> A	<b>EC No.:</b> See PDM	<b>Author:</b> Brian O'Connell	<b>Date:</b> See PDM
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Revision History Table				
Revision	DCN No.	Date	Change Author	Change Summary
0	0000086	03/02/2012	T. Venuto	
1	0000138	8/15/2012	P. Sterndale	A. Added Grandfather clause – See Note page 1 B. Added Clauses D8, D9, J8, J9, M8 and Z1 C. Moved P1 and P2 D. Modified J5, J6, J7, K3, M1 (to require AS9102 accordance), M2, M7 E. Changed G2 to require written approval of any changes to material or specification. F. Added to M3 the requirement for written approval of sub-tier suppliers for components and processes.
2	0000263	10/30/2013	C. Cambio	Rewrote M1 to clarify
3	0000277	2/20/2014	J. Texiera	Added or revised the following clauses – B4, C1, D7, H4 thru H10, J5, J7, K9, K10, M9
4	0000292	5/23/2014	T. Venuto	A. Remove Note 1 B. Move Prohibited Materials from a Special Clause to a General Clause C. Added Dodd Frank Conflict Materials as a Prohibited Material D. Revised B4-Sub Tier Supplier Requirement to clarify flow down to sub-tier suppliers
5	0000373	9/29/2016	J. Wilt	Remove all references to Add a minimum shelf life remaining for any of material of 80% is required to clause D5
6	0000378	11/30/2016	D. Kenison	Change Clause D8-EOL to require suppliers to send component EOL notifications to SuppliersandPartners@QinetiQ-NA.com.
7	0000384	10/13/2017	B. O'Connell	A. Updated Clause B1 to require all suppliers have a QMS B. Added Clause B5 for Employee awareness C. Updated General Formatting
8	EC-20-010	4/24/2020	JP Bouchard	Updates to several clauses and deletion of some. Review against previous revision if needed for detail.
9	EC-21-018	SEE PDM	N. Nigri	A. Replaced all reference to "QNA" with "QinetiQ" B. Updated clauses A3, J1, J4, J5, J6, K2, K7 and M1 with additional details regarding ITAR registration C. Moved General Clause D11 to J11 D. Added clauses J12 and J13
10	SEE PDM	SEE PDM	A. Pina	Added section C4 – SCAR notification to supplier
11	SEE PDM	SEE PDM	D. Farrell	Added Clause J14, J15, J16, and M10
12	SEE PDM	SEE PDM	D. Farrell	Updated J16 to remove alternate CofC option. Updated J14 verbiage to remove inspection waiver for supplemental documents. Updated M10 to require physical submittal of documents.
13	See PDM	See PDM	N. Speroni	Updated verbiage of M1 to require FAI plan approval. Updated verbiage of M2 to have additional requirements and recommended use of AS9102 forms.
A	See PDM	See PDM	A. Pina	Removed from J1 Quality Clause the statement "Certification of Conformance" or "CoC" clearly visible on the certificate" this is not a customer requirement.



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In case of any conflict with this document and any other requirements, the order of precedence is as follows:

1. QinetiQ Purchase Order
2. Drawings, Specifications, and or Electronic Files
3. This document

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# QINETIQ

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## Acronyms:

Authorization To Build	ATB
Certificate of Conformance	CoC
Conflict Mineral Report Template	CMRT
Critical Application Items	CAI
Critical Safety Item	CSI
Customer Furnished Material	CFM
Electrostatic Discharge	ESD
End Of Life	EOL
First Article Inspection	FAI
First Article Inspection Report	FAIR
Foreign Object Damage	FOD
Government Source Inspection	GSI
Intellectual Property	IP
International Traffic in Arms Regulations	ITAR
Leak Testing	LT
Liquid Penetrant	LPT
Magnetic Particle Test	MPT
Material Identification Code	MIC
Material Test Reports	MTR
Non-destructive Examination Requirements	NDE
Non-Destructive Testing	NDT
Original Equipment Manufacturer	OEM
Objective Quality Evidence	OQE
Printed Circuit Board	PCB
Production Part Approval Process	PPAP
Purchase Order	PO
Quality Acceptance Data Package	QADP
Qualified Parts List	QPL
Qualified Manufacturers List	QML
Radiographic	RT
Responsible Business Alliance Foundation	RBAF
Safety Data Sheet	SDS
Supplier Corrective Action Report	SCAR
Ultrasonic	UT
Visual Inspection of Welds	VT



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## General Quality Clauses

*The following clauses(A-G) are incorporated into all QinetiQ Purchase Orders:*

### A1. DELETED

### A2. QinetiQ / Customer Access

The Supplier shall provide, if required, access to any of the Supplier's facilities where any of the work is being performed. This access shall be granted to QinetiQ and their customer(s) as appropriate for the specific contract. The representative(s) shall be afforded unrestricted opportunity to evaluate and verify Supplier's compliance to this PO. The Supplier shall make available for reasonable use by the representative the equipment necessary for validation purposes. Supplier personnel shall be made available for operation of such equipment as required.

### A3. ITAR Registration

QinetiQ custom product, parts and components, and the related technical data and information or services related to it are controlled for export purposes pursuant to the ITAR and/or the EAR. Suppliers that manufacture or export ITAR goods, data, or services must hold a current ITAR Registration from the U.S. Department of State. It is a violation of U.S. government export regulations to export or re-export these products, any of their parts or components, or technical data related to them without first receiving authorization to export, as necessary, from the U.S. Department of State or U.S. Department of Commerce. Suppliers must obtain approval from QinetiQ prior to exporting data for QinetiQ custom product.

### B1. Quality Management System

Supplier certification to AS9100, ISO9001, or equivalent is preferred. At a minimum, a Supplier is required to have an internal Quality Management System that they operate to. If the Supplier does not have a formal Quality Management system in place they must be approved for use by QinetiQ's Quality Assurance Group to verify that they have all necessary processes in place.

### B2. DELETED

### B3. Record Retention

The Supplier shall maintain records that provide objective evidence of compliance to the PO requirements. The records shall be maintained for a period of at least three (3) years from completion of purchase order. The Supplier may send records to QinetiQ to be maintained but must communicate that need with QinetiQ Quality and agree to supply all requested documents.



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**NOTE:** Clause K1 takes precedence over this requirement if it is defined on the purchase order.

#### B4. Sub-tier Supplier Requirements

Supplier shall establish in its sub-tier supplier purchase order(s) requirements necessary to assure that QinetiQ quality clauses or equivalent are flowed to sub-tier suppliers and that each item delivered has been controlled, manufactured, tested and inspected in compliance with the requirements of the Order by and between Supplier and Buyer. A copy (with redacted pricing) of each sub-tier purchase order (s) shall be available for review by Buyer upon its request.

#### B5. Employee Awareness

QinetiQ requires its suppliers to promote a culture of employee awareness of their contribution to product and service quality, their contribution to product safety, and the importance of ethical behavior.

#### B6. Documentation Legibility

All documentation provided by the Supplier shall be legible, and at a resolution capable of being reproduced (by dry process) and scanned for electronic storage. Any corrections made to records shall have a single cross out through the original text and be accompanied by initials of the authorized person making the change and dated.

#### C1. In-process Nonconforming Material Items

All parts and material delivered against this order shall conform to the requirements of the order. Supplier shall not apply the following nonconforming material dispositions without Buyer approval;

- Repair
- Use-As-Is
- Any other Disposition that alters the released configuration baseline

Supplier Nonconformance Reports, or other design modification requests, are to be submitted to the Buyer for processing. Buyer approved deviations shall be included with Supplier submitted contract deliverables.

Any product that is nonconforming (approved by QinetiQ deviation) when delivered must be segregated and marked separately from material that is fully compliant with PO requirements.

#### C2. Previously Delivered Non-Conforming Material

The Supplier shall report any nonconformance that may affect already delivered product.

- Notification shall include a clear description of the discrepancy, identification of suspect parts (mfg. dates, serial numbers, qty, etc.), and dates delivered.
- A containment plan and interim corrective action shall be provided to assure no further defective product will be received at QinetiQ.

#### C3. Customer Furnished Material

If this PO includes the use of material provided by QinetiQ as CFM, then the following are applicable:

- All CFM must be handled with care and appropriately identified as QinetiQ material and stored in a safe and secure manner.



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- Should CFM be determined to be non-conforming, follow your company's normal procedure for handling nonconforming material. In addition, promptly notify QinetiQ that the material is nonconforming. Send a copy of your non-conformance/defect report to the Buyer. When the material has shipped, send an e-mail to the Buyer contact with a copy of the Packing Slip and the Nonconformance Report advising of the date that the material shipped.

### C4. Supplier Corrective Action Report

- Supplier shall:
  - Within 24 hours Acknowledge receiving of the SCAR
  - Within 48 hours provide containment plan
  - Within 14 days identify the root cause
  - Within 30 days provide a formal root cause and corrective action

In the event that supplier is not able to respond within the allotted time above, the supplier shall submit a request for extension which shall include the reason for extension and the time needed to complete the SCAR.

### D1. Packaging

The Supplier shall:

1. Package all items in such a manner as to prevent damage during shipment and subsequent storage at QinetiQ.
2. Assure that shipping containers intended to be carried by an individual must not exceed 35 pounds total.

### D2. Lot Date Codes

Lot Date Codes shall not exceed three years from date of receipt at QinetiQ. Lot Date Codes for individual piece parts used as part of an assembly for QinetiQ shall not exceed three years from date of assembly. For shipment of products containing Manufacturers lot date code identification, parts shall be packaged to provide segregation of lot/date code to assure traceability can be maintained.

### D3. Electrostatic Discharge

Appropriate handling and packaging is required for electrostatic sensitive material. The Supplier shall:

- Have an ESD program in accordance with MIL-STD-1686, MIL-HDBK-263, ANSI/ESD-S20-20, or QinetiQ approved equivalent that provides protection of ESD sensitive devices during all phases of manufacture, test, storage and shipment.
- Package ESD sensitive items in packaging materials specifically designed for use with ESD sensitive materials.
- Label each package as "ESD SENSITIVE" (industry standard symbology is allowed).

### D4. Hazardous Materials

For any hazardous material, an SDS must be provided to QinetiQ upon request by the close of the next business day.

### D5. Adhesives, Paints, Compounds, Raw Materials, Liquids, Thermal Insulating Fabrics

For adhesives, paint, compounds, raw materials, liquids, thermal insulating fabrics or any other type of material with a controlled shelf life, the following information is required with the deliverable material:

- date of manufacture





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- shelf life / expiration date
- Certificate of Conformance
- Special storage and handling requirements, if applicable on package or container

**CAUTION: Materials that have adhesive properties may have a shelf life, please verify prior to use and/or shipment to QinetiQ.**

#### D6. Foreign Object Control

A. The Supplier shall maintain a FOD Prevention Program: Whenever or wherever FOD (such as solder splashes, stripped insulation sleeving, metal shavings, paperclips, etc.) can be entrapped or migrate, sufficient FOD Controls shall be in place to prevent FOD from entering into the product.

B. Prior to closing inaccessible or obscured areas and compartments during assembly, the Supplier shall inspect for FOD/Materials and ensure no protective devices (e.g., bags, caps, covers and plugs) remain embedded.

C. Supplier shall ensure any tooling, jigs, fixtures and test or handling equipment are maintained in a state of cleanliness and repair sufficient to prevent FOD.

D. If FOD prevention includes the use of dust caps on cable assemblies or supplied connectors, do NOT use Yellow colored dust caps unless yellow is specifically required on the drawing.

#### D7. IPC Certification and Workmanship (Printed Circuit Boards, Electronic Assemblies, and Cable and Wire Harness assemblies), Class 2

- Printed circuit boards, Electronic Assemblies, and Cable and Wire Harness Assemblies shall be built using J-STD and IPC **certified** personnel.
- Unless otherwise stated on the drawing or purchase order:
  - Soldering shall be performed by personnel certified to J-STD-001.
  - Printed Circuit boards shall have workmanship in compliance with IPC-6011 or IPC-6012, IPC-A-600 as applicable , Class 2 – Acceptability of Printed Boards
  - Electronic Assemblies shall have workmanship in compliance with IPC-A-610, Class 2 – Acceptability of Electronic Assemblies
  - Cable Assemblies shall have workmanship in compliance with IPC/WHMA-A- 620, Class 2 – Requirements and Acceptance for Cable and Wire Harness Assemblies

**NOTE: Clause J6 takes precedence over this requirement if it is defined on the purchase order.**

#### D8. End of Life

The Supplier shall have a formal system for the identification of and mitigation of risk associated with components reaching their EOL. Supplier must notify QinetiQ of a component reaching EOL as early as possible by forwarding email notification to Buyer.

#### D9. Counterfeit Part Mitigation

The Supplier shall have a formal program for the prevention of Counterfeit Parts being used in QinetiQ product. Report Possible or Confirmed issues to QinetiQ as soon as identified.





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**NOTE: Reference DFARS 252.246-7007 for requirements and guidance.**

#### **D10. Prohibited Materials (as applicable to material/product on the specific Purchase Order)**

The following materials are prohibited:

- D10 B: Dodd-Frank Wall Street Reform and Consumer Protection Act- Section 1502 Conflict Minerals: Provided product shall not contain conflict minerals (tin, tantalum, gold, tungsten) from the Democratic Republic of Congo and adjoining countries which include; Angola, Burundi, Central African Republic, The republic of the Congo, Rwanda, South Sudan, Tanzania, Uganda, and Zambia.
- Supplier to provide current copy of CMRT at the latest approved revision template provided by the Responsible Business Alliance Foundation (RBAF).

#### **E1. Receiving Inspection**

Material shipped against this Purchase Order is subject to Receiving Inspection.

#### **F1. Workmanship**

Unless otherwise specified, material shall be free of pits, cracks, dents, scratches, burrs, sharp edges, foreign matter, or any other evidence of poor workmanship that shall render the unit unsuitable for its intended use.

#### **G1. Purchase Order Changes**

Once the PO is accepted, any supplier initiated change requests shall be initiated via e-mail to the buyer. QinetiQ initiated changes shall be communicated to the Supplier via a purchase order revision. At no time should the Supplier implement changes communicated by anybody from QinetiQ other than the buyer. Updated purchase orders are the only approved method for communicating changes to product. The Supplier shall not rely on verbal instructions, email or any other communication method to implement changes to QinetiQ specified product. Any implementation without the updated Purchase Order is at the Supplier's risk and QinetiQ inspection will reject any changes that are not documented on the latest revision of the Purchase Order.

#### **G2. DELETED**



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### Special Quality Clauses

*These apply when referenced and incorporated into the PO or PO line item as indicated by the clause number(s) located on the face of the Purchase Order. In case of conflict between Special and General Clauses, Special Clauses take precedence.*

#### H1. QinetiQ Source Inspection / Shipment Pre-Approval

QinetiQ Source Inspection / Shipment Pre-Approval is required prior to shipment from your plant. This may be an on-site source inspection or may involve a review of all supporting quality documentation prior to shipment.

- QinetiQ buyer shall be notified a minimum of one week in advance of the time the materials are ready for review.
- Supplier shall submit all supporting documentation, per the drawing and Purchase Order requirements. Documentation shall be electronically submitted to the Buyer. Documentation shall be submitted immediately after source inspection notification.
- Supplier shall have all inspection tools required for inspection available at time of source inspection.

#### H2. QinetiQ Pre-Encapsulation Inspection

Materials must be inspected by QinetiQ personnel before permanently closing a portion of an assembly that cannot be accessed after assembly. QinetiQ shall be notified a minimum of one week in advance of the time materials are ready for review. Supplier shall submit all supporting documentation per the drawing and PO requirements. Documentation shall be electronically submitted to the Buyer or Source Inspector with the notification of pre-encapsulation inspection.

#### H3. Government Source Inspection

GSI is required prior to shipment from the Supplier's plant. Upon receipt of this PO, promptly notify the government representative who normally services your plant. Where a representative is not currently defined, contact your QinetiQ Buyer for assistance. Seven work days' notice must be provided to the government inspectors to facilitate source inspection.

#### H4. QinetiQ - Authorization To Build

Supplier is required to obtain "Authorization to Build" from the Buyer before starting production. Supplier is authorized to procure material however production shall not start until authorized by the Buyer in writing. Supplier shall submit defined pre-production deliverables to the Buyer for ATB consideration. The Quality Department will review documents and, if acceptable, notify the buyer to provide authorization to the Supplier to begin production.

#### H5. DELETED

#### H6. Critical Safety Items/Critical Application Items

All attributes/characteristics identified on the design documents as a critical or major characteristic require 100% inspection, by Supplier with actual inspection results of each characteristic recorded, documented, and



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provided with the shipment. Inspection sampling quantity is per line item quantity, not PO quantity, unless the full PO is produced in the same production lot. Provide documentation supporting 'same production' lot justification upon determination of production plan.

### H7. Critical Safety Items - Process and Operation Sheets

The Supplier shall submit Process and Operation Sheets to Buyer for approval prior to the start of manufacturing. The Process and Operations Sheets shall identify a detailed step-by-step account of the procedures necessary in the proper sequence to manufacture the CSI. The Process and Operation Sheets must indicate operation number, description, tolerance (specification), location, and sub tier Suppliers, etc., necessary to control manufacturing operations. After Buyer's approval of the process and operations sheets, the Supplier shall complete the Process and Operations Sheets and have them be signed /stamped off by an in-process operator and/or inspector and delivered with the shipment of the item(s). Process and Operation Sheets may also include the Inspection Method Sheets noted in Clause H8.

### H8. Critical Safety Items - Inspection Method Sheets

The Supplier shall submit Inspection Method Sheets to the Buyer for approval by Buyer prior to start of manufacturing. The Inspection Method Sheets shall identify the CSI characteristics to be inspected, special instructions, item, drawing zone, acceptability limits, inspection tooling/method, and frequency. The completed Inspection Method Sheets shall have the actual inspection results recorded with inspector's stamp/signature and date. Inspection Method Sheets may be included as an integral part of the Process and Operation Sheets noted in Clause H7.

### H9. Critical Safety Items - Material Identification Code mark

The Order is for the procurement of articles with CAI/CSI characteristics that require MIC Marking. The Supplier will submit all CSI documentation associated with the identified CSI feature to the Buyer for review and acceptance. The Buyer will review the applicable data package and upon acceptance issue the MIC Mark (s).

The MIC mark(s) will be in the form of QA-XX-XXXXX. The MIC mark(s) shall be located near, and in the method of part marking indicated on the applicable drawing (except when ink stamp and stencil are specified which for the purposes of traceability are not considered permanent). In these cases the MIC mark shall be metal stamp, laser etch, vibro-etch, or chemical etch (unless the use of such marking methods will cause damage to the functionality of the part). Deviation from any of these methods shall require prior Buyer approval. Application of the MIC marking will be verified by the designated Government representative.

**NOTE:** The MIC marking(s) applied to the individual parts must also be identified on all associated documentation.

### H10. Critical Safety Items - Inspection for Critical Application Items including Critical Safety Items

All CAIs and CSIs shall undergo Critical/Major characteristics inspection, and as noted on design documents, non-destructive inspections to verify CAI or CSI items are within specifications. Actual inspection result for all Critical or Major characteristic's will be recorded by serialized part number, and shall be included in each document package. The Supplier shall perform quality conformance and lot sampling inspections for all associated features and characteristics that are present in the drawings and specifications. The inspection results (actual readings and/or measurements) will be recorded on the Supplier's CSI inspection and Material Certification reports. Features/attributes/requirements classified as Critical and Major on the drawing(s) or



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within the technical specification will be inspected 100%. Unless otherwise specified, attributes for plating, hardness, and NDT shall be inspected 100%. Class 3 threads, dimensions, and geometric feature controls with a tolerance range of .010 in. or less will be inspected using an AQL of 1.0 and the General Inspection Level II as defined by ANSI/ASQ Z1.4. All minor characteristics shall be inspected using an AQL of 4.0 and the General Inspection Level II as defined by ANSI/ASQ Z1.4.

### J1. Certification of Conformance (CoC)

Supplier shall submit a CoC that includes the following information at a minimum:

- Conformance statement that product shipped complies with all requirements of the PO, drawings, and specifications.
- Supplier's name and address
- Manufacturer's name and address (If different than Supplier)
- Purchase order number, order part number, revision level, and quantity shipped.
- Serial number(s) for serialized article(s)
- Lot number(s) for lot controlled article(s)
- Printed name, date, signature or stamp, and title of Supplier's authorized representative signing the CoC.
- Applicable deviations and waivers

If Supplier is an authorized distributor of deliverable material, CoC shall additionally confirm that the supplier is authorized for the Parts and the Parts were procured directly from the Manufacturer or a Manufacturer's Authorized Supplier, and documented evidence of traceability is on file. In addition to the previous requirements, the CoC shall include the following information:

- Manufacturer's part number
- Country of Origin

### J2. Certification of Calibration

For instruments, gauges and measuring standards, electronic or mechanical, a Certificate of Calibration to ANSI/ASQ Z540.1 or ISO 10012 is required.

### J3. DELETED

### J4. Limited Shelf Life Items – for 'pass through material'

Materials furnished on this PO are age-sensitive. Age-sensitive material must have at least 80% of the shelf life remaining upon receipt at QinetiQ. The Supplier shall provide the following on the supplied certificate of conformance or additional certification:

- Material cure date/date of manufacture or method of determining start of shelf life
- Expiration date or calculation of expiration date
- Note any special storage and handling requirements, if applicable on package or container
- Printed name, date, signature or stamp, and title of Supplier's authorized representative signing the certification

**NOTE: This clause applies to bulk product only (e.g., paint, chemicals, adhesives, materials with adhesive backing) this does not apply to shelf life of items installed in delivered assemblies. For delivered assemblies that have shelf life controlled product in them refer to Standard Clause D5.**



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### J5. Process and Special Process Certifications

- Processes that require certification include but are not limited to conformal coating, EMI coating, painting, and powder coating.
- Special processes include, but are not limited to plating, coating, passivation, and heat treating.
- With each shipment of line items that requires special processing has been performed, the Supplier shall include certification stating that the process performed complied with an identified industry specification.
- Heat treat certifications shall be accompanied by time/temperature charts and a summary description of the heat treat time and temperature data indicating the furnace and heat treat lot number. The Certification shall state the name of the processor, date of processing, and the printed or typed name and signature of the responsible representative of the processor.
- All Process Certifications verifying conformance to the drawing requirements shall be submitted with each Order line item shipment. At a minimum, the Process Certification shall include a traceable order number, the part/drawing number, part/drawing number revision, the name and location of the processor, quantity of parts processed and the process being performed (must match drawing note including the specification, class, type and color where applicable).

### J6. IPC Certification and Workmanship (Printed Circuit Boards, Electronic Assemblies, and Cable and Wire Harness Assemblies), Class 3

Printed circuit boards, assemblies, and cables shall be built using J-STD and IPC certified personnel and workmanship shall comply with all necessary requirements.

Unless otherwise stated on the drawing or purchase order:

- Soldering shall be performed by personnel certified to J-STD-001.
- Printed circuit boards (PCBs) shall comply with IPC-6011 Class 3 and IPC-6012 Class 3. PCBs with more than two (2) layers shall be net list tested and documentation of net list shall be provided. Coupons and/or cross-section coupons shall be available and provided upon request.
- Flexible/rigid-flexible PCBs shall comply with IPC-6011 Class 3 and IPC-6013 Class 3. PCBs with more than two (2) layers shall be net list tested and documentation of net list shall be provided. Coupons and/or cross-section coupons shall be available and provided upon request.
- Electronic Assemblies shall have workmanship in compliance with IPC-A-610, Class 3 – Acceptability of Electronic Assemblies
- Cable Assemblies shall have workmanship in compliance with IPC/WHMA-A-620, Class 3 – Requirements and Acceptance for Cable and Wire Harness Assemblies. A report shall be submitted for testing to each of the applicable requirements in the standard.

### J7. Material Test Reports/Certification – Chemical and Physical Properties

The Supplier shall provide to QinetiQ MTRs along with a certification by the mill or testing house that performed the tests certifying compliance to specified standards. The MTRs shall provide both chemical and physical properties that include lot/heat/melt number and actual inspection and test values. Any subsequent heat treatment processes shall require test reports and certifications from the testing house which shall include physical properties for the as-delivered condition. All MTRs shall include the printed name, signature, authority or title and shall be dated Supplier. Complete material traceability shall be maintained throughout the manufacturing processes with appropriate records maintained. Traceability records shall be available for review by QinetiQ, when requested. Part number shall be recorded on all MTRs. For Supplier proprietary materials, a CoC from the material supplier attesting the material meets its specification is acceptable.



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#### J8. Certification of Fiber Cables

Workmanship for items delivered under on the Order shall comply with the requirements of IPC-D-640 Class 3 Requirements and Acceptance for Cable and Wire Harness Assemblies and/or MIL-STD-2042 Fiber Optic Topology Installation, unless otherwise specified on drawing, and shall meet the requirements specified on the assembly drawing.

A report shall be submitted for testing to each of the applicable requirements in the standard.

Unless otherwise stated on the drawing or purchase order: Fiber Cables shall be certified to Telcordia GR326 specification.

#### J9. DELETED

#### J10. Country of Origin

This product requires that the country of origin must be identified and readily apparent upon receipt by QinetiQ. For example, a statement provided in the CoC, Packing Slip or other provided documentation.

#### J11. Mercury

Material furnished by seller under this order shall not contain functional mercury or mercury contamination unless specific written approval has been obtained.

#### J12. Rubber Parts

The supplier shall furnish cure date, assembly date, part name and number, compound number, and manufacturer's identification (if different from part number) for rubber parts (synthetic or natural) installed in assemblies. This information shall be identifiable with the assembly and, when applicable, with the component parts within the assembly to which it applies.

#### J13. Qualified Products List

When the items delivered are required to be Qualified Parts List (QPL)/Qualified Manufacturers List (QML) parts, the following shall apply:

- 1) Seller shall submit a certification identifying the supplier/original equipment manufacturer (OEM) of the material described herein has been granted qualification by the Qualifying Activity in accordance with the applicable military specification.
- 2) The inclusion of products from the QPL shall not relieve Seller of its responsibility for providing items, that meet all specification requirements, or for performing the qualification, inspections, and tests specified for such items.
- 3) Mil-Spec parts shall not be altered.

#### J14. Supplementary Record Submission

The Supplier shall submit to QinetiQ all retained documentation related to the deliverable item and associated processes. This may include but is not limited to:

- Certificates of Conformance for component items
- Trace documentation linking items to OEM
- Process certifications





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- Inspection reports/results
- Functional Test reports/results
- Material Test reports
- Routers, Work travelers, picklists etc.

Instructions and procedures are not required to be submitted. Proprietary information may be excluded at the supplier's discretion, if retained in accordance with the record retention requirements of the purchase order.

### J15. Plating, Hardness and NDT Inspection Data

Unless otherwise specified, attributes for plating, hardness, and NDT shall be inspected 100%. Supplier and all sub-tier suppliers shall record the results of these inspections (i.e., actual readings and/or documented measurements and supporting quality documentation) and provide all such results to QinetiQ. Supplier and all sub-tier suppliers shall provide to QinetiQ all inspection/certification data needed to substantiate product conformity, including, but not limited to all original source data [e.g., Coordinate Measuring Machine (CMM) reports, Laser Tracker reports, etc.].

### J16. Certificate of Conformance – COTS

For commercially available off-the-shelf (COTS) items (defined by FAR Section 2.101 Definitions) and assemblies containing COTS items the supplier and all sub-tier suppliers shall require and provide to QinetiQ: Certificate(s) of Conformance (CofC) and/or inspection records for each COTS item (including sub-components).

### K1. Record Retention

The Supplier shall maintain records in accordance with the applicable Quality System Standard. The records shall be maintained for a period of not less than ten (10) years from completion of purchase order. Supplier must check with QinetiQ for authorization before disposal of records even after the ten (10) year period.

### K2. Test Reports

Articles on this PO require electrical, mechanical, environmental, functional, or other tests in accordance with either Supplier, QinetiQ, or Government specifications. Supplier shall furnish test reports containing at a minimum:

- QinetiQ Purchase Order Number
- Drawing/part number and revision (if known)
- Test specification description, number and revision as applicable
- Number of units tested
- Serial numbers of units tested as applicable
- Test requirement including the criteria for pass/fail
- Quantitative test results shall be used whenever possible
- Test/inspection stamp of the individual performing the task, or the printed/typed name, signature, title of the authorized representative test and date

### K3. Acceptance Test Procedures Approval

Where the Supplier has developed the test protocol, this protocol shall be submitted to QinetiQ for review and approval. In situations where the protocol is classified as Supplier IP, QinetiQ reserves the right to review the



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document at the Supplier's facility. QinetiQ approval of the test protocol shall occur, preferably before testing, but must occur prior to shipment.

**K4. Armor Tile Ballistic Test Reports**

Supplier shall provide Quality Assurance Ballistic Test Reports for each lot of armor tile used in the production of armor panels for each shipment.

**K5. Textiles**

Supplier shall:

- Identify defects in textiles and other yard-goods by use of a flagging system.
- In addition, a map of defects for each roll shipped shall provide information on the nature and location of defects.
- An estimate of the square footage of defects in each roll shall be provided and an adjustment to the invoiced quantity made to reflect unusable material. A statement shall be provided in the Certificate of Conformance, Packing Slip or other provided documentation.

**K6. First Production Lot Qualification - Ballistic Testing Required**

- Lot sampling and testing shall be in general philosophical accordance with QinetiQ Quality Assurance Procedure Q-0013 for physical properties and Q-0003, 0016 0024 or 0058, as appropriate to the end item for ballistics.
- Unless otherwise stated on the purchase documents, the tile supplier will provide the qualification sample parts and QinetiQ will provide target preparation, transshipment to the test range, test services and will supply (or cause to be supplied) the test results back to the tile supplier on a timely basis (maximum 7 days for land vehicle tile or 14 days for aircraft panels).

**K7. Production Lot Qualification - Ballistic Validation Testing Required.**

- Lot sampling will consist of 1%, or 12 tiles, whichever is smaller. Whole tiles must meet the performance requirements of QinetiQ Quality Assurance Procedure Q-0003, Q-0016 or any procedure as outlined in the print.

**K8. Production Lot Qualification - Ballistic Validation Testing Required.**

- Lot sampling will consist of 1%, or 12 tiles, whichever is smaller. Whole tiles must meet a minimum V50 of 3000 ft/sec when tested per LANL Ceramic Armor Specification.

**K9. Welding Requirements for Procedures, Repairs, and Material Records****a) Weld Procedures**

Weld procedures and personnel performing the welding shall be qualified in accordance with the requirements of the specification identified on the engineering drawing and/or Statement of Work, as applicable. Supplier shall provide, for review and approval by QinetiQ, copies of all weld procedures, weld procedure qualification records, and welder performance qualification records to be used in performance of the Order as part of the quote. Where the above needs to be developed, the Supplier shall inform the Buyer in writing.

**b) Weld Repairs**

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Weld repair procedures for the removal or repair of material defects or weld metal defects shall be reviewed and approved by QinetiQ prior to making such repairs. Weld repair procedures shall be written as detailed instructions and as a minimum shall include:

- Method of removal of weld or base metal.
- Method used to ensure defect removal (MT or PT).
- Method for the re-welding, using qualified welders with an approved WPS (if different from the original).
- Extent, location and depth of the excavation shall be documented on an inspection report.

The re-welded area shall be re-examined and documented by the methods used for the examination of the original weld.

### c) Weld Material Records

Weld filler materials shall be certified to the applicable specification and contain the manufactures certification or CoC with results of the chemical and mechanical tests identifiable to the specification or drawing and to the lot of material supplied.

## **K10. Non-destructive Examination Requirements (all sections applicable)**

Supplier shall provide, for review and approval by QinetiQ, copies of NDE procedures and qualification records to be used in performance of the Order as part of the quote. Where the above needs to be developed, the Supplier shall inform the Buyer in writing.

### a) Procedures

All nondestructive examinations, LT, MPT, LPT, RT, Ultrasonic, and VT shall be performed in accordance with detailed written procedures that meet the requirements of the applicable specifications called out on the drawings:

- 1) An NDE procedure and for each NDE method utilized (including a blank report form)
- 2) A Part Specific Inspection Method/Technique Sheets for LT, MPT, LPT, RT, and UT shall be submitted to Buyer for review and approval for each part to be inspected. Technique Sheets are not required for Visual Inspection of Welds. Revisions to Technique Sheets are not required unless a revision to the drawing or ECN changes the NDT requirements. All documents shall be submitted for review and approval by QinetiQ prior to use.

### b) Personnel Qualifications

All nondestructive examination processes shall be performed and interpreted by personnel qualified/certified in accordance with a Written Practice developed by the Supplier to the requirements of SNT-TC-1A or equivalent. The recommended practices of SNT-TC-1A are mandatory as modified by specifications. The Supplier shall provide for review and approval by QinetiQ:

- 1) The Supplier's Written Practice
- 2) The NDE personnel certification and qualification records

### c) Nondestructive Examination Reports.

With each shipment of a line item(s), the Supplier shall submit nondestructive examination reports, which shall include:

- Company name
- The part/drawing numbers, revision (if known).
- Item serial numbers, quantity, lot number, heat number, or other appropriate identification (if applicable)
- NDE Procedure number and revision.
- The approved Part Specific Inspection Method/Technique number
- The method used

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- Equipment and materials used
- Acceptance Criteria
- Date of Examination
- The test results
- Weld Map and/or Data Sheet (if used)
- The printed name, signature and NDE certification level of persons performing the test on each page
- The printed name, signature and NDE certification level of persons approving the test results
- Indication of acceptance by QinetiQ, if applicable (If QinetiQ witnessed the testing)
- All pages shall be numbered

### d) Visual Inspection of Welds

All welds shall be visually inspected per drawing/specification requirements.

### e) Low Halogen Penetrant Materials

Additional requirements; when liquid penetrant materials having low halogen content are required, the test report shall include the material manufacturer's lot/batch number used and a certification of chemical analysis showing the actual halogen content for the applicable lot/batch.

## L1. DELETED

## L2. DELETED

## L3. DELETED

## M1. First Article Inspection (FAI)

**NOTE:** This clause establishes a one-time hold point and requires QinetiQ approval before proceeding to manufacture.

The Supplier shall comply with the latest revision of AS9102 Aerospace First Article Inspection. With shipment of deliverable material, the supplier shall provide completed First Article Inspection Report (FAIR) and all associated objective evidence.

- QinetiQ reserves the right to witness the FAI at the Supplier's facility.
- If the FAIR is on an assembly, include FAIRs for all lower-level parts/subassemblies in the assembly.
- COTS items that are modified must have a FAIR.
- Provide a partial FAIR on revisions to a QinetiQ drawing or change in production process as prescribed in AS9102.
- A FAIR is not required for CFM components, but they should be listed on Form 1 if included in the assembly.
- A FAIR is required to be performed if there has been a lapse in production of two years per AS9102 requirements.
- Be aware that QinetiQ recognizes that these FAIRs may occur on pre-production parts.
  - QinetiQ may require a delta FAIR post implementation of production tooling and equipment.
- Submit FAIRs to QinetiQ on AS9102 report forms 1,2 and 3
  - Use reports forms from current revision of AS9102.



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- Use of forms other than those depicted in Appendix B of AS9102 may be used; however, they shall contain all "Required" and "Conditionally Required" information and have the same field reference numbers.
- Contact QinetiQ Quality department if access to the SAE standard forms is needed.

Prior to starting manufacturing, the supplier shall provide to QinetiQ for review and approval a completed copy of QinetiQ Form QMS0013032, a prefilled FAIR (excluding results), and the applicable balloon drawing as objective evidence that FAI planning has been completed. This is a one-time requirement and shall only apply to the first part being supplied to QinetiQ that requires quality clause M1. Subsequent deliveries of any part number at any revision does not require FAI plan approval.

Reference QMS0013033, Supplier Quality Clause M1, First Article Inspection Guide, for additional reference material related to AS9102 and QinetiQ's requirements. Document is available on QinetiQ's website.

**NOTE:** This quality clause will continue to be called out purchase orders, despite the supplier having already submitted a FAIR for the part number and configuration on order. The intent of this clause being called out on the PO is to serve as a reminder that the particular part number is controlled per AS9102 requirements, not a request for a new FAIR for every QinetiQ PO. At time of PO award, it is the responsibility of the Supplier to evaluate the part number and configuration on order, as well as planned manufacturing processes, against the requirements of AS9102 to determine if a new full or partial FAI is required.

### M2. First Piece Inspection

The Supplier shall provide first piece dimensional, test and inspection data in accordance with the following requirements:

- 100% of the dimensions shall be measured as part of the first piece inspection.
- Material and special processes certifications shall be provided as required by design characteristics.
- First piece inspection results and required material/special process certifications shall be supplied with deliverable material shipment.
- Inspection results may be recorded on the supplier's chosen format, but AS9102 Forms 1-3 are preferred.
- A new first piece inspection shall be completed when any of the following occurs:
  - Change to a design characteristic.
  - Change in manufacturing source(s), process(s), inspection method(s), tooling, materials, or location of manufacture.
  - A natural or manmade event that could potentially impact the manufacturing process.
  - Lapse in production of two years.

### M3. Critical / Key Dimensions, Characteristics or Requirements

The Supplier shall:

- Note that Critical / Key dimension, characteristic, requirement and/or components shall either be identified on the drawing or as part of the purchase order notes.
- Provide Critical / Key dimension, characteristic and/or requirement inspection/test results with each shipment.
  - Data shall be supplied on 100% of the identified dimension, characteristic and/or requirement
- Obtain written QinetiQ approval for the sub tier supplier of Critical/Key Processes/Component(s) prior to production if supplied by a sub-tier supplier.



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### M4. Inspection and Test Plan

The Supplier shall

- Submit an inspection and test plan to QinetiQ. The plan should include the following:
  - Flow chart or Control Plan that identifies, as a minimum, the manufacturing process steps, inspection performed at each operation, and the reaction plan should a non-conformance be identified

### M5. DELETED

### M6. DELETED

### M7. Inspection & Test Data Submission

End-item products ordered through this PO shall be inspected to the statistically valid C=0 Sampling Plan below (see Table 1). The Index Value (Associated AQL) is 1.0. Inspection reports to include dimensional values not just pass fail and must be provided with each shipment.

**Table 1**  
**C = 0 SAMPLING PLANS**  
**ASSOCIATED AQLS**

	.010	.015	.025	.040	.065	.10	.15	.25	.40	.65	1.0	1.5	2.5	4.0	6.5	10.0
LOT SIZE	SAMPLE SIZE															
2 TO 8	*	*	*	*	*	*	*	*	*	*	*	*	5	3	2	2
9 TO 15	*	*	*	*	*	*	*	*	*	*	13	8	5	3	2	2
16 TO 25	*	*	*	*	*	*	*	*	*	20	13	8	5	3	3	2
26 TO 50	*	*	*	*	*	*	*	*	32	20	13	8	5	5	5	3
51 TO 90	*	*	*	*	*	*	80	50	32	20	13	8	7	6	5	4
91 TO 150	*	*	*	*	*	125	80	50	32	20	13	12	11	7	6	5
151 TO 280	*	*	*	*	200	125	80	50	32	20	20	19	13	10	7	6
281 TO 500	*	*	*	315	200	125	80	50	48	47	29	21	16	11	9	7
501 TO 1200	*	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8
1201 TO 3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9
3201 TO 10,000	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9
10,001 TO 35,000	1250	800	500	315	300	294	189	135	108	77	60	46	35	20	15	9
35,001 TO 150,000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9
150,001 TO 500,00	1250	800	750	715	476	435	270	200	156	119	96	74	40	29	15	9
500,001 AND OVER	1250	1200	1112	715	556	345	303	244	189	143	102	64	40	29	15	9

\* Indicates entire lot must be inspected  
NOTE: The Acceptance Number in all cases is ZERO

### M8. Production Part Approval Process

- Product associated with this order requires conformance to the AIAG PPAP. The purpose of this process is to establish confidence in a Supplier and their production processes, by demonstrating that all QinetiQ engineering design record and specification requirements are properly understood by the Supplier and that the process has the capability to produce moderate to high volume product consistently meeting requirements.



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- When this code is invoked contact QinetiQ to understand tailored PPAP requirements for the product.

### M9. Quality Assurance Data Package Requirements

Supplier shall prepare a QADP for this order and shall submit to QinetiQ for review and approval prior to shipping the product. One copy of data package to be presented electronically. One hard copy of data package to be shipped with the product. All documents within the QADP are to be marked with the applicable part number

### M10. OQE Submission Via Email

Supplier shall email all non-technical OQE to: oqe@us.qinetiq.com. Documents that cannot be emailed for security reasons shall be included with shipment. All documentation submitted electronically shall also be included with the shipment.

OQE is any objective quality evidence used to satisfy product requirements as outlined in drawings, specifications, purchase orders or quality clauses.

### N1. Quality Program Plan

The Supplier shall submit a Quality Program Plan in accordance with requirements defined in purchase order and/or specification.

### P1. Lot Control and Traceability

The Supplier shall assure traceability to the manufacturing process via date code, lot codes or unique job number.

### P2. Serialization

The Supplier shall serialize the product in such a manner as to provide traceability to test reports and/or manufacturing lot.

### R1. Baseline Control

QinetiQ Approved Supplier manufacturing configuration baseline is required. This baseline will be presented to QinetiQ for approval. A previously approved baseline will satisfy this requirement. QinetiQ may allow shipment of product prior to formal approval of baseline package providing Supplier is working with QinetiQ to establish one. Verify with QinetiQ that you have permission to ship prior to approval and include that authorization documentation with other shipment documentation.

The baseline package requested of the Supplier shall be as follows:

- A single drawing under the Supplier's engineering change control system listing Supplier's assembly drawing(s), component piece part drawings, material drawings, critical processing specifications and critical manufacturing operations. Each document listed will include the document name, part number/specification number, and revision level and revision date. This baseline drawing shall have its own name, number, revision level, and revision date for future change control. This drawing can either be in the form of a manufacturing flow chart (preferred) or a simple listing.
- Acceptance (in writing) by QinetiQ of the above specified documentation shall be considered as freezing the design and forming a configuration baseline of the part being purchased. The Supplier's approved baseline identification, revision level and revision date will subsequently be reflected on the purchase order, and carried forward on future purchase orders by the QinetiQ Purchasing Department.





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- c. All changes to the QinetiQ-approved baseline require QinetiQ approval; changes must be submitted on the QinetiQ Baseline change request form with a copy of the affected drawings. The request must be sent to the QinetiQ Purchasing Department for disposition. A copy of the approved request will be sent to the Supplier, followed by an appropriate baseline revision level upgrade on the purchase order.

**R2. DELETED**

**Z1. DELETED**