

Legend:

B_ are allocated to generic Quality clauses,
BC_ are allocated to Customer Flow down Quality clauses.

Ducommun Generic Quality Clauses

B1) Supplier's Quality System (AS9100): The supplier's Quality Management System (QMS) shall be compliant with the requirements of the AS9100 Aerospace Standard.

B2) Supplier's Quality System (Basic): The supplier shall maintain a quality management system (QMS). It is recommended that the QMS be based on the ISO 9001 standard. As a minimum, the supplier's QMS must have provisions for:

- Review and Acceptance of Customer Orders
- Purchasing
- Incoming Material Inspection / Verification
- Stockroom and Inventory Control
- Production Control
- Outgoing Inspection and Test
- Calibration of Measuring and Test Equipment
- Control of Nonconforming Material
- Performance Monitoring and Corrective Action
- Training of Personnel
- Document and Data Retention
- Foreign Objection Damage (FOD) Prevention

In addition to the QMS, the supplier shall ensure that their personnel are aware of their contribution to product or service conformity; their contribution to product safety; and the importance of ethical behavior.

B3) Suppliers Calibration System: The supplier shall at a minimum maintain a calibration system which meets the requirements of MIL-STD-45662A. Certification to ISO-17025 is preferred. All calibrations shall be traceable to NIST or equivalent certification body.

B3.1) Suppliers Calibration System: The supplier shall at a minimum maintain a calibration system which meets the latest revision of ISO 10012, Calibration Systems Requirements or equivalent and all calibrations shall be traceable to NIST or equivalent certification body.

B4) Record Retention: The supplier, and their subcontractors, shall maintain on file, at their facility, all inspection and test records for a minimum of (10) years after delivery of the last item on this purchase order. These records shall be traceable to the articles delivered under this purchase order, and they shall be made available to authorized Government, regulatory agency and/or Ducommun representatives. The supplier shall maintain a records control system that ensures records remain legible, readily identifiable and retrievable. At the expiration of the retention period, Ducommun reserves the right to request delivery of such records. Records shall not be destroyed without Ducommun's written concurrence.

B5) Source Inspection Requirement: Ducommun source inspection is required on this purchase order. A minimum of (5) days prior to final inspection / testing, notify the Ducommun buyer or Quality Assurance.

B6) Government Source Inspector: Government source 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 for this inspection can be accomplished.

B7) Special Process Documentation requirements: Submit with each shipment, a certification of special process to drawing / specification requirements. Special processes as used herein to include; heat treatment, welding, soldering, chemical films, environmental testing and plating. The certification shall include;

- A) Name of organization doing the process
 - B) This purchase order number.
 - C) Drawing number and revision.
 - D) Applicable process specification number and latest revision.
 - E) Quantity and serial numbers or lot numbers.
 - F) Authentication by an authorized representative of the suppliers quality organization.
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B7.1) Special Process Supplemental Data Requirements: In addition to the requirements of QCode **B7**, supplier shall provide process parameter data for the applicable processes as specified below:

- A) Heat Treatment:
 - 1) Oven temperature setting and oven tolerance (i.e, +/- degrees)
 - 2) Actual oven temperature chart(s) showing temperature during entire heat treatment process
 - 3) Total time in oven including time in and time out
 - B) Plating (Gold, Silver, Nickel, etc)
 - 1) Actual measurement of plating thickness
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B7.2) Special Process – NADCAP Approved Processors: Supplier must use NADCAP approved processors for all special processes being performed or subcontracted.

B7.3) Special Process – Customer Approved Processors: Supplier must select and utilize only customer approved processor(s) as specified on the PO. If no approved processor(s) are identified for a process, the supplier must notify Ducommun, and obtain written approval of selected processor, prior to processing.

Ducommun note only: QE to enter customer specific processor requirements such as Boeing D1-4426 into Visual Part Maintenance

B8) Deleted. See QC Code 9 for new requirements.

B9) First Article Inspection requirement: A documented first article inspection report, per SAE AS9102, shall be provided with the first shipment. If any changes or lapses in the production occur, as defined per SAE AS9102 Paragraph 5.3, a complete or partial first article inspection report will be required. The first article requirement does not apply to procured Commercial Off the Shelf (COTS) items and standard catalog hardware (i.e. MIL Spec, AS, NAS hardware). Source inspection is not required on first article units unless otherwise specified on the purchase order.

B10) Marking requirements for life controlled products: All items with limited shelf life shall be clearly marked with the manufactures name, type of material, shelf life and date of manufacture (shelf life must be a minimum of 6 months).

B11) Part and Process Change Authority: The supplier shall make no changes to any item(s) on this purchase order without written authorization from the Ducommun buyer. Should the supplier make any changes based on a verbal direction from any Ducommun personnel, the items will subject to rejection and returned for rework / replacement to conformance with the requirements of this purchase order. All suppliers' requests for changes are to be submitted through the Ducommun buyer.

B12) Test Procedure Approval: The supplier shall submit all acceptance test procedures to Ducommun Quality Assurance for approval prior to conducting any tests for approval. If approval is not received within thirty calendar days of submittal, the supplier may proceed with the tests and presume they have been approved.

B13) Physical and Chemical Analysis: Submit with each shipment a record of actual physical and chemical material analysis and a certificate of conformance to the applicable material specification(s). The certificate shall contain a list of the applicable specification(s), including revision levels and traceability by heat lot or melt numbers.

B13.1) Physical and Chemical Analysis - Typical Value Test Report: Submit with each shipment a test report listing the range of values within which the properties of the material used to fill this order fall.

Report must also contain:

1. Name and location of material manufacturer.
2. Material identification by specification number and material condition.
3. Manufacturer or mill identification number of raw material.

B14) Certificate of Conformance: A certificate of conformance is required for all material or items shipped on this purchase order. The supplier shall certify that all material or items listed conform to all applicable drawings, specifications, standards, and purchase order requirements. The certificate shall bear the suppliers name, part number(s), Ducommun's purchase order number and a signature of an authorized quality representative of the supplier.

B14.1) Certifications: If the seller is other than the original manufacturer, Seller shall provide a copy of the original manufacturer's certification signed by an authorized company official.

B14.2) Certifications: Seller shall identify the original manufacturer and certification or test lot identification.

B14.3) QPL/QML Qualified Manufacturer: Manufacturer must be listed as a qualified source of supply on the Department of Defense (DoD) Qualified Products List (QPL) / Qualified Manufacturer's List (QML) listings.

B15) Test Data: Copies of all test data must be submitted with the items on this purchase order. Test data must be traceable to the item tested, either by serial number or other permanent marking on the tested assembly.

B16) ESD Package's: Devices on this order shall be packaged in containers capable of protection from damage by electrostatic discharge (ESD) in accordance with MIL-S-19491 or MIL-M-55564. Packages shall be marked externally; "Caution- Contents subject to damage by electrostatic discharge," or with sensitive electronic device caution label per MIL-STD-129.

B17) Right of Entry: Ducommun, Ducommun's customer or customer representative shall be afforded the right to verify at your facility that the products you are manufacturing or processing conforms to specified requirements.

B18) Special Process Authority: Sub-Tier supplier using outside sources to perform any special processes, services or purchased hardware; must use approved sources as applicable to specific customer requirements.

B19) MRB Authority: Non-conforming material requests have to be submitted to Ducommun for disposition. Ducommun will determine if the material will be submitted to a customer for an MRB approval, Ducommun has no MRB authority and can only disposition as scrap or submit to a customer.

B20) Solderability: Leads, terminals or surface areas of item(s) called out on this Purchase Order which requires soldering by Ducommun Incorporated must meet the solderability requirements specified below.

1. Solderability testing shall be performed per ANSI/J-STD-002 for components and wires to be soldered. Solderability testing shall be performed per ANSI/J-STD-003 for printed boards. Lot sampling shall be per ANSI/ASQC Z1.4, 2003 or user approved system.
 2. Seller shall assure that the components are packaged and protected to prevent degradation to the solder coated surface of terminals during storage and transportation. The packaging shall also protect component lead configuration from bending, twisting and inter-tangling. As a minimum, the packaging shall protect the solder coated surfaces from degradation due to moisture and other corrosive elements.
 3. A sample of components may be solderability tested per the above mentioned solderability tests. Should a sample fail the solderability testing, the lot will be rejected and the lot, or part thereof, may be returned to the Seller for replacement or credit as determined by the Ducommun Incorporated Buyer.
 4. If Seller is unable to comply with these requirements, Seller shall contact the Ducommun Incorporated Buyer for further direction.
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B21) Minimum Lead (Pb) requirement: REQUIREMENTS FOR SOLDERED/PLATED ELECTRICAL, ELECTRONIC ASSEMBLIES/HARNESSES/CABLES/COMPONENTS AND MECHANICAL ITEMS

Electronic, electrical, electromechanical, and mechanical piece parts and assemblies, including the internal fabrication of hardware, delivered to Ducommun Incorporated under the provisions of this Purchase Order shall **not** have pure tin finishes. Additionally, any tin-lead (SnPb) plating or solder process/processing shall result in a finish of no less than 3% lead composition.

Note: This applies to component leads and terminations, carriers, bodies, cages, brackets, housings, mechanical items, hardware (nuts, screws, bolts), etc. This does not apply to MIL-SPEC Parts or that allow the use of Tin (Sn) with less than 3% Lead (Pb).

Seller shall provide a Certificate of Conformance (C of C) with each shipment. The C of C shall mean that the Seller or Seller's agent has verified that delivered product meets the above listed composition requirements, or the material meets at least one of the following provisions:

- a. Seller or Seller's agent has contacted the Original Equipment Manufacturer (OEM) and verified that the specific Mfr / Lot Date Code of delivered product meets the specified minimum lead (Pb) requirement if Tin (Sn) is present in the product.
- b. Seller or Seller's Subcontractor has verified by actual sample testing (X-ray Fluorescence testing is preferred) or other industry acceptable method that a minimum of 3% lead (Pb) is present in any process that uses tin (Sn).

Seller shall be responsible for managing the compliance with this requirement with subcontractors or sub-tier suppliers, and provide evidence of the appropriate flow-down and management of this requirement to the satisfaction of the Buyer or designate.

Unless otherwise specified in this quality attachment, all exceptions must be authorized in writing by the Ducommun Buyer.

B22) Failure Analysis requirement: RETURNED MATERIAL FAILURE ANALYSIS REPORTS

Items procured under this Purchase Order which subsequently cause or contribute to a higher or next assembly test failure(s) shall be returned for failure confirmation and/or required rework.

The manufacturer is required to complete a failure analysis within twenty (20) days of receipt of the hardware. Performance of the analysis shall be in accordance with the rework purchase order.

If the failure analysis report completion date exceeds thirty (30) working days, from receipt of the part for analysis, Ducommun reserves the right to stop any supplier shipments and withhold payments until these requirements are satisfactorily completed.

The failure analysis report must reference the Ducommun Purchase Order number, part and serial numbers (as applicable), cause and corrective action. A copy of the report is to be provided to the Ducommun source engineer (as applicable) at final inspection and mailed to the Ducommun Buyer/Subcontracts Administrator either prior to or at the time of shipment of reworked hardware.

B23) Supplier Quality System: SUPPLIER QUALITY MANAGEMENT SYSTEM

The supplier shall comply with the following Quality System requirements:

I. PROCUREMENT CONTROLS

A. Supplier must:

1. Maintain an approved and/or qualified manufacturers list or for source(s) listed on the purchase order,
2. Have available and use the Government Qualified Products List (QPL) and the Government Qualified Manufacturers List (QML).

3. Procure all Military specification parts from QPL sources.
4. Define and stipulate in Supplier's purchase order to the third parties, all applicable Ducommun and/or Military specifications and related requirements.

B. Distributor's certifies that:

1. For items still in production, materials and/or parts furnished to Ducommun are from a manufacturer for whom the Distributor is an authorized and/or Franchised Distributor.
2. For obsolete (Out of Production) items, materials and/or parts furnished to Ducommun are from sources that (1) were approved at the time of item manufacture (drawing-based items), and (2) can validate the authenticity of the item, based on part number and/or manufacturer's identification marking (MIL spec. items). Otherwise, the Distributor shall notify the Ducommun Buyer prior to acceptance of the Purchase Order, so a decision can be made on the purchase.

II. MANUFACTURING SOURCE CONTROLS

A. Supplier's and Distributor's must have a quality system which:

1. Requires the manufacturer to submit inspection/test data for material purchased when required by the purchase order. NOTE: If the item is obsolete (Out of Production) and test data is not available, the Supplier, Distributor shall notify the Ducommun Buyer prior to acceptance of the Purchase Order, so a decision can be made on the purchase.
2. Requires material certifications to be maintained on file or furnished to Ducommun, if requested .
3. Determines the adequacy and qualifications of the manufacturers represented.
4. Has an effective corrective action system and assures corrective action is taken on Ducommun reported deficiencies whether at the Supplier, Distributor or at the manufacturer.
5. Maintains files containing physical and electrical test reports, that verify conformance with applicable specification requirements, are on file in accordance with II.A.1. and II.A.2. All such data shall be maintained for a period of not less than 7 years from completion of all deliveries and made available to inspection by, or copies supplied to Ducommun upon request.

B. Supplier's, Distributor's that perform or sub-contract Value-Added assembly, processes, fabrication or product-altering operations of any kind shall have written authorization from the Original Equipment Manufacturer (OEM) and Ducommun on file.

III. ELECTROSTATIC CONTROL

A. Supplier, Distributor must:

1. Take necessary precautions to ensure static sensitive items or repair services to static sensitive items are protected from electrostatic discharges.
2. Have an ESD Control Program Plan available for review. It is recommended the ESD Control Program Plan follow the guidelines of MIL-HDBK-263, titled "ESD Control Handbook for Protection of Parts, Assemblies and Equipments".

IV. FOD Control

1. Supplier, Distributor shall have a FOD control plan for the organization, and shall define areas where FOD controls are necessary to ensure the quality of the products being produced for delivery to Ducommun.

V. RECEIVING CONTROLS

A. Supplier, Distributor must:

1. Identify received material and maintain traceability records to manufacturer's part number, lot number, and date code for all electronic and electrical parts, raw material and mechanical machined parts, semiconductor devices, integrated circuits and passive electrical components.
2. Identify and segregate nonconforming material.

VI. STOCK ROOM CONTROLS

A. Supplier, Distributor must:

1. Practice the "first in first out" principle of stock control.
2. Identify the quality status (acceptable vs. suspect) of material.
3. Provide for and maintain adequate environmental control of all material in its stock room.
4. Identify and segregate material.
5. Have a method of removing superseded and unacceptable supplies.
6. Maintain shelf-life & Electrostatic Discharge (ESD) controls over all material where applicable.

VII. SHIPMENT CONTROLS

A. Supplier, Distributor must:

1. Ensure that all materials shipped against the purchase order are handled, identified, packaged & shipped in accordance with the purchase order requirements and associated specifications.

B24) SELLER'S SUPPLIER CONTROL

All Seller procured supplies/services which become a part of the item(s) delivered in accordance with this Purchase Order shall conform to drawing(s) and specification(s) requirements. Seller's system shall assure all: Purchase Order flowdowns of applicable quality and technical requirements, suppliers' capability to produce items, and adequate methods of assuring compliance. Seller shall assure all sub tier suppliers are in compliance to all requirements assigned to Seller.

B25) DATE/LOT CODE SHIPPING REQUIREMENTS

Each shipment shall consist of material from only one manufacturer and a single date coded or numbered lot.

If Lot/Date Codes are not available due to use by the Manufacturer of unique serial numbers in lieu of Lot/Date Codes, the serial numbers shall be noted on shipping documents.

If this requirement cannot be complied with:

1. Seller shall notify the Buyer of the minimum number of date coded lots per shipment, and the minimum number of parts per lot that Seller can ship on a best effort basis.
2. With Buyer concurrence, multiple manufacturer and date coded lots may be included in one shipment provided that they are segregated, packaged and identified separately.

OR

The buyer may issue unique Purchase order line numbers to clearly distinguish between different Lot/Date Codes. Supplier may request this option to address any concerns.

Each different Manufacturer and date coded lot must be documented as a separate line number on the Shipper and Certificate of Conformance, and the shipper must document the following minimum information:

Manufacturer Name

Lot/Date Code (or serial number as above if applicable)

Manufacturer P/N

Country of Origin

Quantity

B25.1) Material Traceability: Material used shall be identified by lot number, material type specification and applicable change number, heat number, etc., and traceable to the lot number(s) used. Traceability records shall be available for review by the Buyers representative for a period of 10 years.

B25.2) Material Lot Control: Items furnished under this purchase order must be identified by manufacturing lot or batch number and must be indicated on all delivered paperwork (i.e. pack list and Certification of Conformance). Where impractical to stamp individual parts due to size or shape, the lot or batch number will be stamped on identifying tags or the smallest unit package.

B26) Changes affecting Product

Seller agrees to maintain strict controls to assure that, after the item(s) successfully pass the qualification, no changes will be made to any design, material, part, process, procedure, tooling or test equipment; nor shall they be altered, redesigned or replaced by any other design, material, part, process, procedure, tooling or test equipment, without prior written approval of the Buyer.

In addition, the items shall not be produced at a facility other than the Seller's original facility which produced the acceptable items, without prior written approval of the Buyer.

The definition of change does not include the following: editorial or administrative changes such as spelling or typographical errors, clarifications, personnel, maintenance, or equipment changes not affecting the qualified product.

Upon receipt of such notice from the Seller, the Buyer shall have the right to direct the Seller to repeat all or part of the qualification at Seller's expense and to obtain from the Seller all data necessary to prove the acceptability of the proposed change. The Buyer shall provide all data to Customer for concurrence and/or Approval as directed by contractual flow down. Buyer shall not provide approval to Seller until approval is received from Customer, as required.

Notwithstanding the above provisions, Seller agrees that the items to be supplied hereunder will conform to all applicable procurement specifications and drawings, as amended.

B27) REQUIREMENT FOR 100% SURGE CURRENT TESTING FOR SURFACE MOUNT TANTALUM CAPACITORS (SURGE OPTION A OR BETTER)

GENERAL:

Any surface mount tantalum capacitor furnished to Ducommun shall be subjected to and pass surge current testing in accordance with the conditions specified below. This requirement shall apply to loose components (piece parts), circuit card assemblies (CCAs), modules and any other type of hardware or product that contains surface mount tantalum capacitors.

If Seller is unable to comply with these requirements, Seller shall contact Buyer for further direction prior to proceeding.

FLOWDOWN REQUIREMENTS:

Seller shall be responsible for communicating this requirement to subcontractors or sub-tier suppliers as required to assure that non-surge current screened product is not delivered.

CERTIFICATE of CONFORMANCE:

Seller shall provide a signed Certificate of Conformance or an equivalent signed document that specifies that delivered product contains only surface mount tantalum capacitors that have been subjected to and passed surge current testing. This Certificate of Conformance or equivalent document proving the passing of surge current testing also requires at a minimum the following information:

- Manufacturer Name
- Lot/ Date Code
- Manufacturer P/N
- Country of Origin
- Quantity

SCREENING CONDITIONS:

All surface mount tantalum capacitors shall be subjected to and pass surge current testing per MIL-PRF-55365F, Pg. 22, paragraph 4.7.16, Surge Option "A" or better.

B28) DOMESTIC DFARS METAL, PREFERENCE FOR DOMESTIC SPECIALTY METALS

This purchase order incorporates the contract clause at DFARS 252.225-7014 Alt 1. Any specialty metals (as defined in paragraph (a) of the clause) included in any articles delivered under this purchase order must comply with that clause, and you must flow down 7014 Alt 1 to all of your vendors supplying any articles delivered under this purchase order that include specialty metals.

B29) COUNTERFEIT MATERIAL, REQUIREMENT FOR COUNTERFEIT MATERIAL CONTROL

The supplier shall have processes and controls to ensure no Counterfeit Material is delivered to Ducommun or Ducommun assigned customers. Supplier shall have a process that is compliant to AS5553 as a whole, and specifically have processes in place support all of the requirements of section 4. Requirements; from 4.1 Counterfeit Electronics Parts Control Plan through 4.1.6 Material Control. Supplier shall maintain documentation, i.e. Certificates of Manufacture, Certificates of Conformance, Independent 3rd party testing, and other documentation necessary to assure traceability to Original Equipment Manufacture. Documentation shall be maintained per record retention requirement flow down, and be available upon demand.

Suppliers are expected to flow down this requirement to all suppliers back to the original manufacture.

Suppliers are required to assure full compliance thru audits, 3rd party audits, random compliance testing, etc.

B30) This clause has been re-identified as BC1, follow requirements as defined in BC1. (For future use, use BC1)

B31) This clause has been re-identified as BC2, follow requirements as defined in BC2. (For future use, use BC2)

B32) This clause has been re-identified as BC3, follow requirements as defined in BC3. (For future use, use BC3)

B33) This clause has been re-identified as BC4, follow requirements as defined in BC4. (For future use, use BC4)

B34) This clause has been re-identified as BC5, follow requirements as defined in BC5. (For future use, use BC5)

B35) This clause has been re-identified as BC6, follow requirements as defined in BC6. (For future use, use BC6)

B36) This clause has been re-identified as BC7, follow requirements as defined in BC7. (For future use, use BC7)

B37) This clause has been re-identified as BC8, follow requirements as defined in BC8. (For future use, use BC8)

B38) This clause has been re-identified as BC9, follow requirements as defined in BC9. (For future use, use BC9)

B39) This clause has been re-identified as BC10, follow requirements as defined in BC10. (For future use, use BC10)

B40) Manufacture Original Certification

The supplier shall provide a copy of the Original Manufactures certifications with each purchase order delivery. The supplier shall also provide their own Certificate of Conformance including reference of Original Manufactures Certificate of Conformance document number for traceability purposes.

B41) This clause has been re-identified as BC11, follow requirements as defined in BC11. (For future use, use BC11)

B42) This clause has been re-identified as BC12, follow requirements as defined in BC12. (For future use, use BC12)

B43) This clause has been re-identified as BC13, follow requirements as defined in BC13. (For future use, use BC13)

B44) FAA CONFORMITY INSPECTION

All detail parts, subassemblies, and assemblies in the configuration of the end item identified in this order shall be subject to FAA Conformity Inspection, except as waived by the responsible FAA regional representative. Documentation reflecting compliance with this requirement shall accompany each shipment to Buyer.

B45) NONDESTRUCTIVE INSPECTION REQUIREMENTS

All parts requiring Non-Destructive Testing shall be processed in accordance with the requirements of the applicable specification. Personnel reading and/or interpreting Non-Destructive Testing indications shall be certified / qualified in accordance with the requirements of the controlling specification, for the test method used. Customer-approved sources shall be used when required

B46) RUBBER CURE DATA

The Supplier shall be responsible for legibly and permanently identifying each part or container with the rubber cure date, date of manufacture, and shelf-life. Assemblies shipped with rubber parts therein shall be marked with assembly date and the cure date of the oldest elastomeric item.

B47) REQUIREMENTS FOR CALIBRATION SERVICE PROVIDERS

Calibration service providers shall maintain a calibration system that complies with ISO 17025 and ANSI/NCSL Z540-1. In addition, all standards used to perform calibration measurements shall be traceable to NIST. Calibration certificates must comply with the requirements of ISO 17025, and must include the following information:

- (1) Equipment tolerance/accuracy
 - (2) equipment range of use
 - (3) Actual measurements as received and after calibration. Provider shall provide at least 3 data points over the equipment range of use.
 - (4) Statement of measurement uncertainty. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a level of confidence of approximately 95%.
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Customer flow down Quality Clauses

BC1) RAYTHEON FLOWDOWN OF WELDING & BRAZING REQUIREMENTS (Q-note HK)

The customer has specifically flowed down a Welding and Brazing requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, then click on Search. There are two critical elements to the Raytheon Quality Note: 1) the actual specification requirements, click on the Q-Note Revision / Date link, and 2) the Raytheon approved sources, click on the Supplier Listing link.

BC2) RAYTHEON FLOWDOWN OF PAINTING REQUIREMENTS (Q-note CT)

The customer has specifically flowed down a Painting requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, then click on Search. There are two critical elements to the Raytheon Quality Note: 1) the actual specification requirements, click on the Q-Note Revision / Date link, and 2) the Raytheon approved sources, click on the Supplier Listing link.

BC3) RAYTHEON FLOWDOWN OF PLATING AND SURFACE FINISHES (Q-note JY)

The customer has specifically flowed down a Plating and Surface Treatment requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, then click on Search. There are two critical elements to the Raytheon Quality Note: 1) the actual specification requirements, click on the Q-Note Revision / Date link, and 2) the Raytheon approved sources, click on the Supplier Listing link.

BC4) RAYTHEON FLOWDOWN OF HEAT TREAT (Q-note SJ)

The customer has specifically flowed down a Heat Treating requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, then click on Search. There is one critical element to the Raytheon Quality Note: 1) the actual specification requirements, click on the Q-Note Revision / Date link.

BC5) RAYTHEON FLOWDOWN OF NON DESTRUCTIVE TESTING (Q-note TC)

The customer has specifically flowed down a Non Destructive Testing requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, then click on Search. There are two critical elements to the Raytheon Quality Note: 1) the actual specification requirements, click on the Q-Note Revision / Date link, and 2) the Raytheon approved sources, click on the Supplier Listing link.

BC6) RAYTHEON FLOWDOWN OF METAL STRAP REQUIREMENT (Q-note MN)

The customer has specifically flowed down a Metal Strap requirement for MS Hardware which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC7) RAYTHEON FLOWDOWN OF QUALIFIED SUPPLIER LIST (Q-note BG)

The customer has specifically flowed down a Qualified Supplier List requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC8) RAYTHEON FLOWDOWN OF TEST DATA REQUIREMENT (Q-note GA)

The customer has specifically flowed down a Test Data requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC9) RAYTHEON FLOWDOWN OF TEST DATA REQUIREMENT (Q-note GB)

The customer has specifically flowed down a Test Data requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC10) RAYTHEON FLOWDOWN OF 100% INSPECTION REQUIREMENT (Q-note GQ)

The customer has specifically flowed down a 100% Inspection requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and it must be performed by a Raytheon approved supplier. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search

BC11) United Technologies Corporation ASQR-01 Quality System Flowdown.

Suppliers shall ensure that all material provided under this applicable Purchase Order complies with all of the requirements of the Revision on record of the UTC ASQR-01 Quality System documentation at time of purchase order acceptance.

[http://sites.utc.com/utc/About UTC/aerospace quality requirements.html](http://sites.utc.com/utc/About%20UTC/aerospace%20quality%20requirements.html)

BC12) RAYTHEON FLOWDOWN PWB REQUIREMENT (Q-note CH)

The customer has specifically flowed down a PWB process requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, and objective evidence that needs to be retained per record retention requirements and the objective evidence that needs to be provided to Ducommun for acceptance of product. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a current copy of the Q-note as needed. Access the Raytheon WEB site on: <http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC13) RAYTHEON FLOWDOWN FAI REQUIREMENT (Q-note DD)

The customer has specifically flowed down a First Article Inspection process requirement which needs to be flowed to each supplier including each sub-tier supplier, as applicable. This Q-note defines the required process which must be followed, depending on the situation, a FAI plan needs to be submitted and approved, followed by a FAI completed and approved, prior to production. The detailed instructions are located within the Raytheon document. The Raytheon Q-note is located on the Raytheon WEB site, and each supplier is responsibility to pull a

current copy of the Q-note as needed. Access the Raytheon WEB site on:

<http://www.raytheon.com/connections/supplier/index.html>

Select "Quality Notes" on right hand side under Connections to: once selected, enter the specific Quality Note in the box, and then click on Search.

BC14) HONEYWELL SPOC FLOWDOWN REQUIREMENT

The customer has specifically flowed down Aerospace **S**upplier **P**urchase **O**rders **C**onditions (**SPOC**) to Ducommun, which are required to be flowed down to each sub-tier supplier level. Your responsibility is to assure that you meet the requirements of the applicable SPOC section, and that you flow these requirements down to sub-tier supplier's, down to the origin of the materials and processes.

Assess to the SPOC manual is via <https://www.supplier.honeywell.com> (SPOC manual in Quick links)

The following SPOC section is applicable dependant upon your design authority level: (ref Conditions by Group)

SPOC 001 Supplier/Manufacturer with Design Authority
SPOC 002 Supplier/Manufacturer without Design Authority
SPOC 003 Supplier providing Standard and / or Catalog Hardware

The SPOC 001, 002 and 003 require compliance to Sections 1.0 and 2.0, and the Individual SPOCs Invoked by SPOC Group per Section 3.0. These include Honeywell's Approved Manufacture Parts List (AMPL) and Approved Processing Source List (APSL). The review and compliance of these two lists are required for each purchase of parts and processes.

BC15) BOEING FLOWDOWN REQUIREMENT:

Seller is required to maintain a quality system that complies with the requirements of Appendix A of Boeing Document D6-82479, "Boeing Quality Management Systems (BQMS) Requirement for Suppliers", as amended from time to time. Access at the following URL address: <http://www.BoeingSupplies.com/supplier/>

BC16) SIKORSKY FLOWDOWN REQUIREMENT: MRB DISPOSITIONED RE-WORK/REPAIR PER SA908 CLAUSE 9

Seller shall comply with notification and inspection instructions as defined within the text of Clause 9 of Sikorsky Aircraft Corporation, Standard Terms and Conditions of Purchase, SA908 Rev. 06/01/2011.

BC17) SIKORSKY FLOWDOWN REQUIREMENT: APPROVED SPECIAL PROCESS SOURCES PER SA908 CLAUSE 14

Seller shall comply with requirements to use Sikorsky Approved Source List as defined in the text of Clause 14 of Sikorsky Aircraft Corporation, Standard Terms and Conditions of Purchase, SA908 Rev. 06/01/2011.

BC18) CUSTOMER / GOVERNMENT OWNED TOOLING CONTROL

PROPERTY IN POSSESSION OF SUPPLIER OR SUB-TIER'S

The requirements set forth in this attachment shall not be construed to limit or relieve Seller of any of its obligations set forth or incorporated into Buyer's Purchase Order of which this is a part.

a. This attachment applies to all property, including but not limited to, production and raw material, repairables, Special Tooling and Equipment ("STE") in possession of Seller (and any subcontractor or supplier of Seller at any tier) which is furnished to, acquired by, or fabricated by Seller (or any subcontractor or supplier of Seller at any tier), title to which is or becomes vested in Buyer or Buyer's customer (the "Customer"). For the purpose of this Purchase Order, such property includes Government property, as defined in Federal Acquisition Regulation (FAR) clause 52.245-1 (Government Property) and is referred to herein as "Buyer/Customer Property".

b. In the event the provisions of Buyer's prime contract from the Customer, or the prime contract under which Buyer has been issued a subcontract by a higher-tier contractor require that title to property acquired by Seller shall vest in Buyer/Customer, title to such property shall vest in Buyer/Customer upon acquisition by Seller. Title to such property shall at that time immediately and directly pass to Buyer/Customer so that title shall not at any time vest in Seller.

2. Seller shall maintain a system to ensure the adequate control and protection of Buyer/Customer Property. If Buyer and/or Government determine Seller's system is inadequate, this could affect Seller's financial liability for loss, damage, or destruction of Buyer/Customer Property, except for normal wear and tear. Upon receipt of notification from Buyer, Seller shall complete and return within thirty (30) working days a completed Property System Certification describing the system that will be used to control Buyer/Customer Property. Additionally, Buyer may, at its option and at no additional cost to the Government, this Purchase Order or Buyer, conduct surveillance at a reasonable time of Seller's or Seller's Subcontractor's Property Control System as Buyer deems necessary to assure compliance with FAR 52.245-1 (Government Property) and Buyer's Purchase Order.

3. Seller shall, commencing with its receipt and during its custody or use of any Buyer/Customer Property, accomplish not less than the following, at no additional cost to the Customer, this Purchase Order, or Buyer:

a. examine upon receipt to detect damage in transit;

- b.** verify the contents of the shipment against the packing sheet as to the completeness and content and return a signed copy promptly to Buyer. If no discrepancy is reported within five (5) working days, Buyer/Customer Property shall be deemed to have been received in acceptable condition and to be as listed and described on the accompanying packing sheet. For Buyer/Customer Property which is furnished by the Customer or Buyer, after receipt and installation, if Buyer/Customer Property is in a condition not suitable for use, Seller shall promptly notify Buyer, in writing, so Buyer can determine further course of action;
- c.** unless otherwise specified, perform functional testing prior to further processing or installation to determine satisfactory operation. If Buyer/Customer Property is not suitable for use, Seller shall promptly notify Buyer, in writing;
- d.** establish and maintain records as required by FAR 52.245-1 (Government Property) and this Purchase Order, and make such records available for review upon Buyer's request;
- e.** provide the necessary precautions to guard against damage from handling, deterioration during storage and loss;
- f.** perform periodic inspection to assure adequacy of storage conditions; and
- g.** utilize, consume, move, and store Buyer/Customer Property only as authorized in accordance with FAR 52.245-1 (Government Property) and this Purchase Order, and ensure that Buyer/Customer Property is used only for performing this Purchase Order, unless otherwise provided in this Purchase Order or approved in writing by Buyer.
- 4.** Seller shall, at no additional cost to the Customer, this Purchase Order or Buyer, perform a physical inventory, at no less than a biennial basis, or per the direction of Buyer, of all Buyer/Customer Property in the possession of Seller. Within sixty (60) days after the completion of each inventory, Seller shall report the results, including all such Buyer/Customer Property located at the facilities of any of Seller's subcontractors at any tier, and shall certify to Buyer the accuracy and completeness of such physical inventory. Seller shall assist Buyer, at no additional cost to the Customer, this Purchase Order or Buyer, in resolving all discrepancies related to Seller's, Seller's subcontractors and suppliers at any tier, or Buyer's inventory accounting.
- 5.** Seller shall not modify, cannibalize, or make alterations to Buyer/Customer Property unless the Purchase Order specifically identifies the modifications, cannibalizations, or alterations and improvements as work to be performed, or prior written authorization is obtained from Buyer. Any such modification, cannibalization or alteration made by Seller without such authorization, is the sole responsibility of Seller and is accomplished at Seller's expense. Modification or alteration subsequent to the original acquisition or fabrication of Buyer/Customer Property which is necessary in order to reach full-rate capability, life expectancy, or any other purpose as specifically required under the provisions of the applicable Purchase Order shall be made at no additional cost to the Customer, this Purchase Order, or Buyer. Title to any such modified or altered Buyer/Customer Property required for rate capability, life expectancy, or any other purpose shall vest in Buyer or Customer in accordance with the provisions of the Purchase Order that relate to title vesting for additional or modified Buyer/Customer Property.
- a.** Seller may be held accountable and financially liable for loss, damage, destruction or theft of Buyer/Customer Property, in accordance with this Purchase Order. Seller shall, within two (2) working days, report to Buyer the loss of any Buyer/Customer Property or any such property found damaged, malfunctioning, destroyed or otherwise unsuitable for use. Seller shall determine and report the root cause and all pertinent facts as soon as they become known,

and the necessity for withholding such property from use, and corrective action to prevent reoccurrence at no additional cost to the Customer, this Purchase Order, or Buyer.

b. Seller agrees, at no additional cost to the Government, this Purchase Order or Buyer, to store and maintain in serviceable condition, including the performance of calibration and preventative maintenance, all Buyer/ Customer Property in possession of Seller or Seller's subcontractors and suppliers at any tier during the performance of this Purchase Order and until disposition is performed.

6. Additional Reports – Seller shall have, at no additional cost to the Customer, this Purchase Order or Buyer, a process to create and provide copies of audits and self-assessments, corrective actions, and other property related reports as requested by Buyer.

7. Immediately upon termination or completion of this Purchase Order, Seller shall perform a physical inventory, adequate for accountability and disposition purposes, and, if Buyer/Customer Property is applicable to such terminated or completed Purchase Order, shall cause its subcontractors and suppliers at every tier to do likewise, at no additional cost to the Customer, this Purchase Order or Buyer, and the following shall apply:

a. Buyer will coordinate the disposition of Buyer/Customer Property with the Customer on behalf of Seller. Scrap and excess Customer-owned property is subject to Customer disposition instructions.

b. Seller shall execute Buyer's direction for disposition of Buyer-owned property deemed to be excess or scrap and return evidence of said disposition to Buyer.

All Buyer/Customer Property shipments, including the related packing and crating tasks, require advance notification, coordination and negotiation with Buyer. Shipment of property to be returned to Buyer at no additional cost to Customer, Buyer or this Purchase Order unless agreed otherwise in writing by Buyer and Seller.

c. Seller shall prepare inventory schedules using Government Standard Form 1428, Inventory Disposal Schedule, or equivalent, of all Buyer/Customer Property in the possession of Seller, or its subcontractors and suppliers at any tier. The Inventory Schedule Forms shall be in such detail as acceptable to Buyer. Seller shall store Buyer/Customer Property identified on an inventory disposal schedule pending receipt of written disposition instructions from Buyer, and shall maintain such property in accordance with the provisions referenced in the paragraph entitled "Property Administration" contained in the "Government Property" clause of the General Terms and Conditions of Purchase, Supplement 1, at no additional expense or cost to the Customer, the Purchase Order or Buyer.

d. The responsibility and liability for the decontamination of excess or scrap Buyer/Customer Property shall be based on the following:

Customer Owned – the Customer is responsible for funding the cost to decontaminate any Customer-owned property. Seller shall negotiate with Buyer to obtain decontamination and removal costs for contaminated property. If the contamination occurs as a "part of doing business", or if contaminant is introduced as part of Seller's process, Seller will be responsible for decontamination costs at no cost to the Customer, this Purchase Order or Buyer.

Buyer Owned – if the contamination occurs as a "part of doing business," or if contaminant is introduced as part of Seller's process, Seller will be responsible for decontamination costs at no cost to the Customer, this Purchase Order or Buyer.

8. Seller agrees that in placing any lower-tier subcontracts or purchase orders under this Purchase Order which involve the use of Buyer/Customer Property, Seller shall include appropriate provisions to obtain rights comparable to those granted to Buyer and Customer or

the Government under the "Government Property" clause contained in the General Terms and Conditions of Purchase, Supplement 1 to this Purchase Order, and this Purchase Order Attachment, and agrees that it shall exercise rights for the benefit of Buyer and Customer and the Government, as Buyer may direct, at no additional cost to the Customer, this Purchase Order or Buyer.

9. If Buyer's Purchase Order (or, in certain limited circumstances, a Property Accountability Purchase Order) authorizes the use of specified Government-owned property, Seller is authorized to use said Government-owned property on a no-charge basis strictly in the performance of this Purchase Order. Any change in the amount of Government-owned property furnished pursuant to this Purchase Order or Property Accountability Purchase Order, as applicable, is subject to the Changes clause applicable to this Purchase Order. Seller agrees that it will not directly or indirectly, through overhead charges or otherwise, include in the price of this Purchase Order, or seek reimbursement under this Purchase Order for, any rental charge paid by Seller for the use of said Government-owned property in connection with any other contracts or purchase orders without the prior express written authorization of Buyer.

BC19) HONEYWELL SPOC 003 FLOWDOWN REQUIREMENT

The customer has specifically flowed down Aerospace **Supplier Purchase Order Conditions (SPOC)** to Ducommun. Your responsibility is to assure that you meet the requirements of the SPOC 003 section.

Assess to the SPOC manual is via <https://www.supplier.honeywell.com> (SPOC manual in Quick links)

The following SPOC section is applicable dependant upon your design authority level: (ref Conditions by Group)

SPOC 001 Supplier/Manufacturer with Design Authority

SPOC 002 Supplier/Manufacturer without Design Authority

SPOC 003 Supplier providing Standard and / or Catalog Hardware

The SPOC 001, 002 and 003 require compliance to Sections 1.0 and 2.0, and the Individual SPOCs Invoked by SPOC Group per Section 3.0. These include Honeywell's Approved Manufacture Parts List (AMPL) and Approved Processing Source List (APSL). The review and compliance of these two lists are required for each purchase of parts and processes.

Revisions

<u>Rev.</u>	<u>Description</u>	<u>Date</u>
A	Added Clauses 18 and 19.	11/24/03
B	Updated Clause 18 to include hardware, and changed names from MechTronics to Ducommun.	01/22/04
C	Deleted clause 8 (replaced by 9). Modified clauses 9 to include SAE AS9102 requirements and 14 to be more inclusive. Added clauses 20, 21, 22, 23, 24, 25, 26, 27, and 28.	04/19/07
D	Added Clause 29 and corrected typo in Clause 10	01/10/08
E	Added the "B" prefix to QC code numbers for BAAN implementation.	10/29/08
F	Updated code 23 to include FOD controls for Suppliers and Distributors	10/27/09
G	Add codes B30 thru B39, Raytheon flow downs Q-notes	12/07/09
H	Add codes B40, B41 B42, B43, modified codes B1, B3, B4, B9, B15, B18, B24 and B25	06/01/10
J	Edited codes B1 and B2	09/09/10
K	Reformatted to split Generic Clauses and Customer Clauses and re-assign new code numbers. See legend for assignments. Added clauses B44, B45, B46 and BC14..	2/3/11
L	Added clauses B3.1, B14.1, B14.2, B25.1, B25.2 and BC15	3/23/11
M	Added clause B13.1, corrected spelling error, B29 "counterfeit"	5/12/11
N	Updated clause B4 to provide additional clarification on record retention requirements; added clause B47 to address requirements for calibration service providers. Changed logo. Replaced DTI with Ducommun.	9/19/11
P	Updated clause B29, and Added clauses BC16, BC17 AND BC18	10/14/2011
Q	Added clause BC19, SPOC 003	4/27/2012
R	Added clause B7.1 – B7.3	4/26/2016
S	Added B14.3 QPL/QML Qualified Manufacturer	4/20/2017
T	Updated B1 to eliminate MIL-Q-9858 callout; updated B2 to address (1) the requirement for a quality management system, and (2) personnel awareness requirements	11/30/2017