Requirements for Suppliers to Ultra PCS – Specific to Lockheed Martin JSF Equipment

PUR-SOPS-017

Issue: **05**

Precision Control Systems

Value stream or function

- ☐ Cambridge
- ☒ Cheltenham
- ☐ Columbia City (Indiana)
- ☐ Greenford
- ☐ Manhattan (Kansas)
- ☐ Preston

Owner: **Quality**

BMS711-22

Date 17 August 2022

Amendment record sheet

Issue	Summary description of change	BMS change form	Date
1	Initial Issue	N/A	Oct 2014
2	Minor text changes for clarification which include: Section 1.2 introduced. Paragraph numbering re-aligned. Process Change Request BMS027-15 refers.	N/A	Mar 2015
3	Clarification of the AS9103 Requirements in Section 5.0	N/A	June 2015
4	Reference to COM-SOPS-014 – Commercial Requirements in Section 1.1	N/A	Dec 2016
5	Updated reference to COM-SOPS-014 in section 1.1	BMS-711-22	August 2022

Table of contents

1 Introduction

1.1 Scope

This document defines the methodology, policies, objectives, quality assurance (QA) requirements and approval process employed at Ultra for the selection and control of suppliers for Lockheed Martin JSF Programmes.

This document should be read in conjunction with PUR-SOPS-003 – requirements for Suppliers and COM-SOP-014 – "Flow down terms for Lockheed Martin U.S". COM-SOP-014 is applicable to all products supplied where PUR-SOPS-017 is applicable. Where conflict arises between this document and PUR-SOPS-003, this document will take precedence. Where conflict arises between this document and the purchase order; the Purchase Order will take precedence.

1.2 Compliance Matrix

The supplier shall complete Compliance Matrix PUR-FORM-009 then return to UEPALS purchasing Department.

UEPALS Purchasing will then use the supplier response to populate the supplier compliance log.

1.3 Purpose

The purpose of this document is to specify the Lockheed Martin specific requirements for Suppliers of products or services against an Ultra purchase order furnished for and used on the JSF Programme.

1.4 Definitions

All definitions used within this document are as referenced within BS EN ISO 9000:"Quality management systems – "Fundamentals and Vocabulary" latest revision, with the exception of the following:

Purchase Order

The documentation used by the purchaser to procure products, goods or services.

Item

The subject matter on the purchase order

Proprietary Equipment

Any item where Ultra does not hold or have claim to the intellectual property rights.

First Article Inspection

A complete, independent and documented physical and functional inspection process to verify that prescribed production methods have produced an acceptable item, as specified by engineering drawings, planning, purchase order, engineering specifications, and/or other applicable documents.

Concession / Waiver / Variance

Is permission granted after manufacture or in service, to use or release a product that does not conform to specified requirements?

It also covers written authorisation obtained prior to manufacture, or provision of a service, or a specific departure from requirements, for a specified quantity of items or period in time.

2 Government Data Exchange Programme (GIDEP)

GIDEP (Government-Industry Data Exchange Program) is a cooperative activity between government and industry participants seeking to reduce or eliminate expenditures of resources by sharing technical information essential during research, design, development, production and operational phases of the life cycle of systems, facilities and equipment.

Suppliers that are eligible for GIDEP membership, are required to be a member of GIDEP

Any organization that meets one of the following criteria may become a GIDEP member:

- U.S. or Canadian industrial organization who supplies items or services (directly or indirectly) to the U.S. Government or to the Canadian Department of Defence
- U.S. or Canadian government department, agency, or activity
- Licensed U.S. Public Utilities Company
- The GIDEP Operations Manual provides guidance for participation in the program, reporting requirements, and procedures for the exchange of reports, data and information. The manual is shown as a best management practice in the DoD Deskbook.

Each organization must designate a GIDEP Representative who will

- Serve as the primary point-of-contact between their organization and the GIDEP Program;
- Maintain control of and safeguard of GIDEP data and GIDEP Website access;
- Submit applicable data for inclusion in the GIDEP database;
- Publicize the availability of GIDEP throughout the organization;
- Collect utilization data and submit GIDEP Participant Utilization Reports;
- Ensure data to be submitted to GIDEP by contractual agreement is done so in a timely manner;
- Inform upper management of benefits resulting from participation in GIDEP; and
- Verify and approve new GIDEP User applications within the activity or organization that require access to GIDEP information.

3 First Article Inspection Requirements

For details of Ultra's First Article requirements see PUR-SOPS-003

3.1 Ultra Designed Equipment

For Ultra designed items, suppliers procuring or manufacturing items requiring AS9102 compliance shall contact the Ultra assigned Supplier Quality Assurance Engineer a minimum of 5 days prior to the supplier procuring the items or beginning any manufacturing activity for this Purchase Order.

Ultra's assigned Quality Engineer may elect to review or participate in the suppliers FAI process at any time through the FAI process based on complexity/criticality of the item and the Suppliers performance to Ultra's requirements.

Distributors that purchase Ultra designed equipment shall ensure that the manufacturer has performed FAI and that the documentation is available on request.

3.2 Supplier Designed Equipment

For supplier designed equipment that has an associated Ultra Source Control Drawing, the supplier shall meet as a minimum Ultra's FAI requirements as detailed in this document and PUR-SOPS 003. Ultra shall have the right to request additional verification of the FAI process as required by the Ultra Quality Assurance Engineer or Ultra's Customer.

The supplier shall contact Ultra's assigned Quality Engineer a minimum of 5 days prior to the supplier procuring the items or beginning any manufacturing activity for this Purchase Order.

Ultra's assigned Quality Engineer may elect to review or participate in the suppliers FAI process at any time through the FAI process based on complexity/criticality of the item and the Suppliers performance to Ultra's requirements.

3.3 Engineering Changes

The supplier shall contact Ultra's assigned Quality Engineer a minimum of 5 days prior to creating or starting any changes that affect product in line with the requirements of AS9102.

The supplier shall submit documentation of complete or partial FAI's accomplished as a result of such changes to the Ultra assigned Quality Engineer

3.4 FAI Entrance Criteria

Ultra Designed items

FAI Documentation requirements (AS9102 forms or equivalent) begin once development is complete and production begins with released, baseline engineering. Only one FAI report (AS9102 forms or equivalent) will be required.

Note! Exceptions or deferrals will be by direction from Ultra assigned Quality Engineer

Supplier Designed Items

FAI Documentation requirements (AS9102 forms or equivalent) begin once development, Safety of Flight and Qualification are complete, Ultra's assigned Quality Assurance Engineer has been notified, no variances exist for the purchased part and production begins with released, baseline engineering and approved Acceptance Test Procedure. Only one FAI report (AS9102 forms or equivalent) will be required.

Note! Exceptions or deferrals will be by direction from Ultra assigned Quality Engineer

3.5 FAI Exit Criteria

Ultra Designed Items

- Manufacturing of a minimum of (6) consecutive parts, and
- Internal rework quantities equal to 66 internal rework defects per thousand inspection points and
- Initiation of no more than two (2) supplier responsible NCR documents requiring corrective action for the minimum (6) consecutive parts, and
- Completion of the FAI report created during the FAI Entrance phase.

Note! Exceptions or defferals will be by direction from Ultra assigned Quality Engineer

Supplier Designed Items

- Validation of each element of the applicable time-bound FAI package (to include process controls for key parameters) with supporting objective evidence
- Successful completion of first-pass final ATPs for item / system on (3) consecutive production units.
- Completed sub-tier FAI documentation, as applicable
- Validation of sub-tier assembly/detail FAI(s) with supporting objective evidence including validation of conformance of subcontracted Special Processes.
- Completion of the FAI report created during the FAI Entrance phase.

Note! Exceptions or deferrals will be by direction from Ultra assigned Quality Engineer

4 FOD Prevention

The requirements for Foreign Object Damage/Foreign Object Debris (FOD) prevention are based on the National Aerospace Standard (NAS) 412, Foreign Object Damage/Foreign Object Debris Prevention, which establishes a baseline FOD prevention policy/procedure. NAS 412 supports the quality management system standard, AS/EN/JISQ 9100/9110/9120 which requires suppliers carry out a program for the prevention, detection, and removal of foreign objects from its products.

The minimum requirements of a FOD Prevention Program for all product/service suppliers shall include:

a. A FOD training program shall be in place to increase employee awareness on causes and effects of FOD, promote active involvement through specific techniques and emphasize good work habits through work discipline. FOD training is required for all employees and contractors (internal and external) as applicable and shall be on going, (i.e., initial and periodic) to maintain employee awareness.

Training shall include (but is not limited to) the following topics:

- Causes and effects of FOD
- Protection of product
- General housekeeping program and formal 5-S practices
- Clean as you go principles
- Tool control/accountability
- Unrestricted hardware control/accountability
- Consumable control/accountability

b. A documented procedure for material handling and part protection to eliminate potential FO/FOD and handling hazards that includes:

- Risk identification for sensitive parts, assemblies, surfaces, areas, etc.
- Risk identification related to packaging, handling, shipping and storage processes.
- Evaluation and controls for risk mitigation specific to cleaning, protection, and care processes.
- Defined process sequencing that allows for proper contamination prevention, cleaning, and detection on parts and containers at appropriate process points.
- Defined methods to protect parts where contact with other elements may be detrimental to the part (e.g., columbium, titanium, magnesium, etc.).

c. A general housekeeping program and formal 5-S practices that includes:

- Area cleaning in accordance with 5-S principals (i.e., assembly, test, manufacturing, warehouse, and operational support areas).
- Tool control

- Periodic cleaning/sweeping floors, work-surfaces and any other pertinent surfaces.
- Maintaining critical process areas free of open food and beverages.
- Areas having clear signage indicating requirements.

d. A FOD reporting and investigation process shall be in place and define how to:
   - Report and investigate FOD occurrences and include the use of common root-cause analysis tools as part of the record.
   - Advise personnel of how to react in the event of a FOD incident, (e.g. do not disturb evidence, cease operation, immediately notify supervision, begin investigation, etc.).
   - Ensure effectiveness of corrective/preventive actions taken to preclude recurrence.

e. Storage controls shall include:

   - Facilities, as necessary, provide isolation/protection to material pending use or shipment.
   - Periodic assessment of the condition of material in stock.
   - “First in - First out” issuance of materials subject to degradation.
   - Shelf life control applied to processing material, as required.

f. Preservation and Packaging controls shall include:

   - Preservation of material during processing, fabricating, assembly and testing, through shipment of end items.
   - Regular preservation fluid checks for contamination and maintained free from FO via filtering or replacement of preservatives.
   - Visual inspections prior to final preservation to ensure parts are free from contaminants, debris, foreign material, finger marks and stains. When required, a bore scope examination shall be carried out to ensure freedom from machining chips and debris for internal passages that cannot be inspected visually.
   - Prevention of oil system contamination from silicone-based lubricants.
   - External cleaning when there is evidence of external contamination.
   - Packing material does not induce contamination to parts and assemblies.

g. Prohibited packing material is not used. This includes, but is not limited to:
   - Newsprint
   - Loose packing material small enough to block internal passages, holes and crevices or parts
   - Glue bearing material

h. Packing methods consider weight, physical configuration, and method of shipment to preclude damage to parts.

i. Optical systems, electrical components or assemblies containing cadmium, lead, zinc or magnesium are not protected with Vapor Corrosion Inhibitor (VCI) treated materials.

j. Protection against corrosion and damage during transit or storage

5 Variation Management

Suppliers of Major Electronic, Mechanical and Electro Mechanical Assemblies that are controlled by A Design Performance Specification (DPS) shall implement a variability reduction programme in accordance with AS9103. Any Key Characteristics identified shall have their capability be reported to the Quality Team at Ultra Electronics Precision Air & Land Systems on a quarterly basis.

A process or characteristic shall be determined as Capable when a CPK value of 1.33 or greater is being achieved consistently. All processes or characteristics not meeting this requirement should have a process improvement plan including timescales.

*** End of document ***