PCS Supplier General Requirements

PUR-SOPS-003

Issue: **14**

Precision Control Systems

Material Acquisition and Receipt

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

Owner: **Purchasing Manager**

BMS change number: **BMS551-21**

Date: **16th March 2021**

ULTRA

Amendment record sheet

Issue	Summary description of change	BMS change form
1	Formal Issue	
2	Section 17.0 – New Para added “In the event that the Supplier becomes insolvent or goes into liquidation……” This is to address a CAA non-compliance in May 2013 where a risk to supplier record protection was identified. Para 5.5 Document reference was “HSW-SOPS-xxx” now corrected to “HSW-SOPS-005	
3	Para 4.1 The supplier shall maintain a management system based on the principles of either AS9100 or BS EN ISO9001:2008 latest revision but not necessarily 3rd party assessed. Preference shall be given to suppliers who currently hold and maintain a 3rd Party registration, however irrespective of whether the supplier holds 3rd party registration or not, in all instances when supplying to the requirements of a Ultra purchase order the requirements of this document shall take precedence. This clashes with Para 1.4 that states: - The supplier shall maintain a management system based on the principles of either AS9100 or BS EN ISO9001:2008 latest revision but not necessarily 3rd party assessed, however preference shall be given to suppliers who currently hold and maintain a 3rd Party registration. Para 4.1 Replaced by: - The supplier shall maintain a management system based on the principles of either AS9100 or BS EN ISO9001:2008 latest revision but not necessarily 3rd party assessed, however preference shall be given to suppliers who currently hold and maintain a 3rd Party registration. This change removes the ambiguity and simplifies the requirement. Para 13.1 Reference to AS (EN) 9130 deleted. Other minor format improvements incorporated	
4	Updated to include Non-Deliverable software requirements and clarifications regarding production and storage of quality and manufacturing records	
5	Clarification of the Quality Records retention period – “permanently” plus being “easily retrieved & legible”.	
6	Major update to incorporate improvements from Customer Audits/Contract requirements. These details have now been removed from this amendment list due to the amount of changes that were incorporated, and the space taken. Documented Information exists within previous Issue 6 of this document. For viewing actual changes that were introduced at Issue 6, please refer to Head of Management Systems.	
7	Incorporation of DPS345 Requirements (DPS345 now Obsoleted)	

	Addition of "Ultra encourage the implementation of FOD systems in line with NAS412" into section 11.0 Issue 6 amendment details removed from this point on – see above.	
8	Section 9.5 Conflict Minerals introduced. Change request BMS014-15 refers	
9	Removal of reference to PI020 from Paragraph 10.2.4	
10	Section 1.2 Compliance Matrix added Definitions added for Counterfeit Part & Authorised Distributer Additional Clarification in the following areas: • 9.3.2 – Counterfeit Parts Supplier Notification to Ultra • 12.1 – Certification Activities – Verification • 16.7 – Deliveries – Supplier Authorisation of C of C	
11	Paragraph 5.4 – NEW paragraph ADDED covering Control of Substances Hazardous to Health & Reach	
12	Appendix A forms brought into line with latest revision AS9102 Issue B.	
13	Front Page: "(Supersedes PI020 and QAP1901)" removed from title, "Approved by: I.R.Bradley – Head of Management Systems" replaced by "Amended by: Abigail Thomas – Senior Buyer". "Authorised by changed from "D.Massey – Commercial Director" to "Mark Aitken – Operations Director". Page 13, Section 5.2 NOTE ADDED: "IMPORTANT – Due consideration shall be given by the individual to their contribution to product or service conformity, product safety and the importance of ethical behaviour at all times." Page 16, Section 9.5.1 Conflict Minerals Policy – Last paragraph added as required by AS9100D. Page 21, Sections 11.2 & 11.3, last paras added as required by AS9100D.	BMS130-17
14	Procedure moved to new template Removal of Electronics in the business name	BMS551-21

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Security

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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.

1.2 Compliance Matrix

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

UEPCS 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 supporting requirements for Suppliers of products or services against a Ultra purchase order, whilst providing the basis for a cost effective management system through good communication and teamwork.

1.4 Purchasing Objective

Together with our customers, shareholders and employees, our suppliers are of prime importance to the future prosperity of this Company.

In the interests of beneficial supplier relationships, we shall develop long-term supply chain objectives, designed to promote and maintain sound yet commercially robust relationships, with those suppliers who can continually satisfy our quality, price and delivery performance requirements and the conviction to continually improve.

Provide a platform that utilises the supplier’s expertise, skill and experience together with our design and product knowledge whilst working in partnership.

We encourage suppliers to invest and improve their overall resource capability, optimise efficiency, facilitate and enable improved overall performance for the mutual benefit of both parties.

1.5 Application

Compliance with the requirements of this document is mandatory when invoked by purchase order. In the event of conflict arising between the requirements of this document and the purchase order, the requirements of the purchase order shall take precedence.

It is the responsibility of the supplier to ensure that they are working to the latest version of specifications referenced within this document as well as purchase order requirements. Requests for Specific specifications that are needed shall be requested from the Ultra Procurement Team

Verbal agreements or instructions shall under no circumstances be construed as approval or authorization to proceed. Clarification must be confirmed in writing. Written PO Amendment or Concession must be issued when the contract/PO cannot be met in full.

Changes that may affect quality must be documented and communicated to the Ultra Quality Assurance Dept and/or Procurement Representative prior to effectivity of the change. Examples of changes include, change in ownership, manufacturing location, Manufacturing Process, Inspection Techniques etc.

1.6 Definition

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.

1.6.1 Purchase Order

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

1.6.2 Item

The subject matter on the purchase order.

1.6.3 Proprietary Equipment

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

1.6.4 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.

1.6.5 Key Characteristic

The features of a material, process, or part whose variation has a significant influence on a product, fit, performance, service life or manufacturability.

1.6.6 Process Capability

A comparison of process performance with product specification requirements that is made over an extended period when the process is in a state of statistical control.

1.6.7 Capability Indices

$$Cp = \frac{\text{Specified Tolerance}}{\text{Process Spread}}$$

Where:

Process Spread = 6 x Standard Deviation

Cp = A Capability Index, a measure of the spread of the process in terms of specification.

1.6.8 Quality Assurance Testing
Periodic audit surveillance conducted on “production” or “development/ engineering” item(s) during the assembly and/or test stages at the time and place of manufacture during the duration of the programme.

1.6.9 Salvage Scheme
A formal scheme that is authorised by the purchaser for the repair/reclamation of an item(s) that do not conform to design standards, specifications or documents.

1.6.10 Concession Waiver
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.

1.6.11 Supply Chain Team
A team comprising of representatives from Purchasing and Quality who work with the supplier.

1.6.12 Certificate of Conformity
A formal document issued by the suppliers authorised representative that provides relevant information pertinent to the item(s) supplied pursuant of the purchase order.

1.6.13 Contractor
A contractor is any firm, company or person carrying out work on the premises of any division within Ultra.

1.6.14 Risk Assessment
Formal evaluation of the process(s) to be carried out in order to identify potential hazards with a view to elimination or control of these potential hazards.

1.6.15 Safe System of Work
Formal procedure that results from a systematic examination of a task in order to identify all the hazards. It defines safe methods to ensure that hazards are eliminated, or risks minimised.

1.6.16 Competent Person
A person who is suitably qualified to perform a task or activity based on education, training and experience.

1.6.17 Permits to work
A formal safety control system to prevent accidental injury to personnel or damage to plant/equipment, where foreseeable hazardous work is undertaken. A permit to work may also be used to communicate and co-ordinate various policies.

1.6.18 Business Continuity Planning

A comprehensive analysis to identify potential risks to the continuation of the business. Each risk is assessed for its impact on business and a risk mitigation plan is created to ensure business continuity in the event of identified risks being realised.

1.6.19 Counterfeit Item or Part

Counterfeit Item or Part is defined to include, but is not limited to, (i) an item that is an illegal or unauthorized copy or substitute of an Original Equipment Manufacturer ("OEM") or Original Component Manufacturer ("OCM") item; (ii) an item that does not contain the proper external or internal materials or components required by the OEM or OCM or that is not constructed in accordance with OEM or OCM design, but is represented as such; (iii) an item or component thereof that is used, refurbished or reclaimed but the Seller represents as being a new item; (iv) an item that has not successfully passed all OEM or OCM required testing, verification, screening and quality control but that Seller represents as having met or passed such requirements; or (v) an item with a label or other marking intended, or reasonably likely, to mislead a reasonable person into believing a non-OEM or OCM item is a genuine OEM or OCM item when it is not.

1.6.20 Authorised Distributor

"Authorized Distributor" is defined as a distributor with which the OM has a contractual agreement to stock, repackage, sell and distribute its product lines. Authorized Distributors normally offer the product for sale with full manufacturer flow-through warranty.

2 Approval Process

2.1 Confidentiality Agreement

To protect both parties a confidentiality agreement shall be signed between the supplier and Ultra at the instigation of any business. Refusal to accept or sign the agreement shall result in no further business.

2.2

Suitably authorized Ultra personnel shall be entitled to affect the following;

- Conduct an initial appraisal of the organisation and the supporting facilities to ensure that the management system is adequate to meet the requirements of the purchase order.
- Thereafter, conduct periodic surveillance audits to ensure continuing compliance.
- Conduct other checks as deemed necessary on finished and part finished items or processes at the supplier premises.
- Verify the integrity of items delivered to determine that they conform to purchase order requirements.
- Review unsatisfactory conditions revealed during audit and examination, in order to identify the root cause of the problem and introduce an effective corrective action.

2.3
The above actions by Ultra representatives, does not absolve the supplier of their contractual obligations and responsibilities.

2.4 Rights of Access
The supplier shall permit access at all reasonable times to any authorised representative of Ultra, who may be accompanied by representative(s) of their customer under the terms of the prime contract, to all areas of the supplier's premises and or 2nd tier suppliers.

2.5 Approved Suppliers
To record the approval of a supplier Ultra maintains a list of suppliers of known capability to which reference shall be made prior to placing a purchase order.

3 QA Appraisal Surveillance & Review
3.1 Appraisal
Initial appraisal shall be performed by the Ultra Supply Chain Team to determine if the potential supplier has the capability to perform to contract;

- Where a potential supplier has been assessed and holds 3rd party registration, the requirement for an on-site visit may be relaxed at the discretion of Ultra.
- Where the potential Supplier does not hold any form of management system then an on-site visit is mandatory.

3.2 Surveillance Visits
Surveillance visits shall be performed under the control of the Ultra Supply Chain Team representatives.

Ultra reserve the right to conduct any of the following type of surveillance visit as deemed necessary:-

1. A manufacturing assessment review, where it is considered that the capability of the potential supplier to perform to contract to be high risk.
2. A production readiness review on contract award to ensure the supplier can meet the production rate expected.
3. A project quality audits, ensuring compliance with the requirements of the project quality plan (if applicable)
4. A Product Audit which may be considered as part of the ongoing monitoring and surveillance of an organisation's Ultra quality approval.
   A product audit may also form part of an Ultra quality investigation of persistent and/or special cause type rejections.

3.3 Timing

Wherever possible, prior to placement of the initial purchase order, these audits shall be performed and addressed at Suppliers premises simultaneously, in order to reduce disruption to supplier's normal operation.

3.4 Performance Review

Suppliers shall have their performance reviewed on a regular basis, based on the number of items rejected against the number of items delivered, (R1) together with their delivery schedule adherence (D1) and the perceived interaction performance, Voice of the Customer (VOC).

Ultra will actively encourage, help and assist suppliers to improve their performance and reduce costs.

After suitable notification, failure by a supplier to effect improvement when required shall result in withdrawal of approval and loss of potential business with Ultra.

4 Management System Requirements

The supplier shall maintain a management system based on the principles of either AS9100 or BS EN ISO9001:2008 latest revision but not necessarily 3rd party assessed, however preference shall be given to suppliers who currently hold and maintain a 3rd Party registration.

Supplier Certificate(s) of Registration to applicable Quality Management System(s) assessments must be issued by a Certification Registration Body (CRB)

Where the supplier has a documented Quality Manual detailing the system by which the supplier assures the quality of the items to be supplied, this document shall be available to Ultra QA on request, for assessment purposes.

Seller shall notify Buyer's Supplier Quality Engineer, in writing, within 10 days of any of the following:

- change in its quality system status; or
- loss of third party registrar's certification status; or
- change in Seller's quality organization, process or procedures that affects conformity of any Item; or
- adverse action taken by Seller's customer, the Government or the Civil Aviation Authority ("CAA") to include any of the following:
    i. Issuance of a Level II Corrective Action Request ("CAR") associated with Buyer Items
    ii. Issuance of any Level III CAR
    iii. Suspension of Government Source Inspection ("GSI")

* Seller shall notify Supplier Quality Engineer and Buyer, in writing, at least 90 days in advance of any sale, relocation, or transfer of Seller's manufacturing operations. Seller shall include the following, as a minimum, in the written notification:

- Purpose of the relocation,
- Address of the new location(s),
- Assessment of actual or potential impact to current POs,
- Risk mitigation plan to ensure compliance to existing requirements,
- Plan defining the identification, storage, protection, retrieval and retention of records,
- Master schedule and timeline of relocation activities, and
- Relocation Coordinator/Point of Contact.

5 Health & Safety

5.1 Legislation

The supplier shall comply with the requirements of current Health & Safety legislation and ensure a safe system of work is in operation to protect the health and safety of their employees, Ultra representative's and company visitors at all times. The supplier shall notify Ultra of any improvement notices issued or any past or pending prosecutions against Health & Safety Legislation.

5.2 Competent Personnel

All personnel performing work shall be competent based on appropriate education, training, skills and experience.

IMPORTANT – Due consideration shall be given by the individual to their contribution to product or service conformity, product safety and the importance of ethical behavior at all times.

5.3 Product Safety

Product safety shall always be maintained. Where required by law (such as CE Marking) or where appropriate manufactured products are required, they shall be supplied with relevant safety information such as Product Safety Data Sheets, to enable Ultra to conduct associated risk assessments

5.4 Control of Substances Hazardous to Health & REACH

All substances shall be REACH compliant. Any substances used in the product or associated processes that listed as 'Sunset' shall be notified to the Buyer, as soon as this is known. It should not be automatically accepted that the recommended substitutes are fit for purpose and must be verified as fit for purpose prior to being introduced.

Any substances that are identified as hazardous to health shall be suitably identified, assessed, stored and handled in accordance with legislation requirements. The supplier shall provide a material data sheet and a REACH compliant statement with any other information needed to enable Ultra to conduct a risk assessment.

5.5 Contractors

All contractors who perform work for, and on behalf of any division of ULTRA PCS shall provide Ultra with copies of risk assessments, safe systems of work, together with evidence of competency of personnel for evaluation prior to commencement of any activities in accordance with Health, Safety & Welfare procedure HSW-SOPS-005 “Contractor Regulations”.

6 Environment

All necessary precautions shall be taken by the supplier to meet current legislation requirements, and to prevent damage to the environment.

The supplier shall notify Ultra of any improvement notices issued or any past or pending prosecutions against Environmental Legislation.

As far as reasonably practical, no ozone depleting substances shall be used on Ultra products, without the prior approval of Ultra.

7 Control of Drawings & Specifications

The supplier shall maintain a system for the control of Drawing, Specifications and Technical Instructions required meeting the requirements of the purchase order.

Note: The supplier shall ensure that Ultra intellectual property rights are always protected.

Purchase order requirements shall be reviewed by the supplier, and queries on drawings, specifications and technical instructions shall be notified in writing to the Ultra Purchasing Department.

In instances whereby the requirements contradict the objectives, Ultra Purchasing/QA shall arbitrate.

8 Control of Measuring, Test Equipment & Tooling

All measurement and test equipment including personally owned equipment shall be identified, and subject to periodic calibration that is traceable to International or national standards.

Where no such standard exists, the basis for calibration shall be established.

The supplier shall ensure that all gauging and test equipment provided by Ultra has been certified for conformance before use, protected from damage and deterioration at all times, and calibrated at the required timescales to confirm accuracy.

Seller shall include in its documented quality system written procedures for the registering, ownership, control, maintenance and calibration of special tooling, jigs, inspection & test equipment, and other devices used in the manufacturing process.

9 Material Receipt & Control

9.1 Policy

The supplier shall only purchase products to be delivered or incorporated in an assembly to ULTRA PCS from known sources of supply that are directly traceable to either the Original Component Manufacturer (OCM) / Original Equipment Manufacturer (OEM), or through an authorised OCM / OEM distributor

9.1.1 Proof of Compliance

The supplier shall ensure that supplies have proof of compliance with specification and shall be batch numbered or serial numbered in order to co-relate with incoming documentation.

Any “x” ray or test reports shall be retained by the supplier as part of their manufacturing records.

Records in the form of Certificates of Conformance for all Electronic, Electrical and Electromagnetic, components and devices, including those items in assemblies / sub-assemblies delivered as part of the purchase order, shall be maintained in accordance with section 13.1 of this procedure.

9.2 Raw Material Validation Checks

Periodic independent raw material validation checks shall be performed by Ultra on samples of raw material to ensure that they are acceptable per applicable specifications. These checks shall be performed at an independent test house at Ultra expense.

When requested, the supplier shall provide Ultra with a sample of material together with supporting documentation, for analysis.

9.3 Counterfeit Parts

9.3.1 Counterfeit Parts Prevention & Control

To prevent the delivery of counterfeit parts, the supplier shall undertake counterfeit parts prevention and control using Industry Standard AS 5553 and / or AS 6174 as a guideline.

9.3.2 Supplier Notification to Ultra

The supplier is not authorised to deliver any item procured from sources other than OEMs or OCMs, or their Authorized Distributors without prior written authorisation from Ultra Procurement.

The supplier **MUST** inform Ultra as soon as is reasonably practical if he suspects that counterfeit parts have been supplied against the requirements of the purchase order. The supplier shall segregate and provide traceability identifiers (i.e. Date Code / Lot Code., Serial number) for all items delivered to Ultra which contain an item procured from sources other than OEM"s or OCM"s or their Authorized Distributors. These parts shall be replaced at no cost to Ultra

9.3.3 Free Issue Parts

Where free-issue parts are supplied from the Buyer these shall be used unless there is written authority from the Buyer for a different action to be taken.

9.4 Point of Acceptance

This is indicated on each PO issued.

When the Buyer requires Accept at Source, the Buyer acceptance can involve periodic surveillance by the Buyer of Sellers quality system, manufacturing processes or physical item, including work at sellers sub-tiers. Based on sellers performance, Buyers acceptance activities may result in the requirement for full time oversight of sellers and/or sellers sub-tier suppliers.

The location of performance of buyers acceptance, prior to shipment, shall be the sellers facility address referenced on the buyers PO. If sellers item manufacture, acceptance and/or shipment will be at or from a location other than the contracted PO address, seller shall: -

a. Provide buyers supplier quality engineer with sellers written plan at least 30 days prior to manufacturing activities that, as a minimum contains the following:

- Name & location of sellers sub-tier and/or manufacturing site.
- How seller will be performing acceptance of product from a sub-tier location and/or manufacturing site.
- Upon request, example of sellers purchase order to validate appropriate flow down of buyers requirements.
- Date that manufacturing activity will begin
- Assessment of actual or potential impact to current PO's and,
- Risk mitigation plan to ensure compliance to existing requirements.

b. Obtain buyers written acknowledgement and concurrence, prior to any manufacturing activity.

c. Reflect sellers contracted supplier name and location, regardless of the point of final acceptance or delivery, in sellers shipping document and CoC.

9.5 Conflict Minerals

9.5.1 Conflict Mineral Policy

Ultra Precision Control Systems (PCS) is committed to sourcing materials from companies that share our values regarding respect for human rights, integrity and environmental responsibilities.

We undertake to:

- Support the aims and objectives of the US legislation on the supply of 'conflict minerals' (the Dodd-Frank Act of 2010)

- Not knowingly procure materials which contain metals that originate from facilities in the ‘Conflict Region’ that are not certified as ‘Conflict Free’
- Our suppliers shall undertake reasonable due diligence with their supply chains to assure that specified metals are being sourced only from:
    - Mines and smelters outside the ‘Conflict Region’ or
    - Mines and smelters which have been certified by an independent third party as ‘conflict free’ if sourced within the ‘conflict region’

Evidence that the components and materials we use are ‘conflict free’ shall be obtained, and when this is not the case UEPCS shall move to ‘conflict free’ products.

9.5.2 General Arrangement

The new reporting requirements reflect congressional concerns that revenues obtained from the mining and transportation of “Conflict Minerals” help finance human rights violations in the Democratic Republic of Congo (DRC) and surrounding countries, resulting in a humanitarian crisis.

9.5.3 Review by Supplier

All suppliers shall perform an initial survey at the Contract Review stage following receipt of a UEPCS purchase order, to determine compliance with the above.

To assist this review, use the links below and complete the Conflict Minerals Template CFSI CMRT3 excel spreadsheet and retain a copy for their records.

- www.conflictfreesmelter.org.
- http://www.conflictfreesourcing.org/conflict-minerals-reporting-template/

All non-conformances shall be notified to PCS Quality at the following email address;

quality@ultra-pals.com

10 Design Performance Specifications (DPS)

10.1

Where conflict arises between the requirements of the DPS and this document, the supplier shall formally notify Ultra quality department of the instance in writing. In instances whereby the requirements contradict the objectives, Ultra Supply Chain Team shall arbitrate.

10.1.1 Proprietary Equipment

Suppliers of Catalogue and Proprietary items who have design authority for the equipment shall provide objective evidence that their Engineering activities are such to ensure the integrity of the specification and performance data.

10.1.2 Design Performance Specification (DPS)

Suppliers who design and manufacture products against a DPS shall establish and maintain control of all engineering activities, and shall be able to provide objective evidence of control.

These controls shall include but not be limited to:-

- Traceability from DPS requirement to product/service functionality
- Review and “Buy off” of drawings prior to manufacture to accept the matching of design to manufacturing capability and specification requirements.
- The preparation of drawings and specifications and a documented change control system
- The control of reliability, life, safety and maintainability
- The use of FRACAS (Failure Report Analysis Corrective Action System) and TAF (Test Analyse & Fix) during development
- The use of Value Engineering and cost reduction techniques
- The feedback of information concerning the performance, cost reduction, manufacture, assembly and test.
- Preparation of FMECAS (Failure Modes Effects Criticality Analysis System).

10.1.3 Acceptance Test Schedules

The Supplier shall define the method, sequence and test parameters and test equipment to be employed on DPS items at their premises prior to delivery

- Test documents shall be forwarded to Ultra Engineering Department, signed by the relevant Supplier authorities, for approval prior to use.
- The test procedures shall not be used for any certification testing until Ultra has approved the content of the procedure.
- Once sealed, no amendments shall be permitted without the prior written permission of Ultra Engineering Department.

10.2 Configuration Control

The Suppliers of DPS controlled items shall maintain a system for configuration and authorised change control.

10.2.1 Development Items

During the development phases of a project, the Supplier shall maintain control of all associated drawings, specifications and data for use by Ultra Engineering/QA Departments during subsequent design reviews prior to delivery of first production hardware.

10.2.2 Production Items

Following completion of all development testing and prior to the final design review that results in establishing a production baseline standard of hardware, the Supplier shall provide Ultra Engineering Configuration Control with a copy of the data information package that includes the following.

- Copy of the Parts List detailing the order of hierarchy

- General Assembly Drawing
- Outline, Space Envelope and interface drawings
- Test schedules, Performance Specifications, together with supporting data

10.2.3 Physical Configuration Audit (PCA)

PCA may be performed both, on development / pre-production prototypes (at the request of Engineering) and on the first deliverable Item of production standard hardware.

- PCA`s shall be performed by Ultra QA department, assisted by any necessary support from specialist areas. The Supplier shall provide all necessary resources (personnel, documentation etc), to enable the requirements of the PCA to be satisfied.
- The PCA shall determine the build standard of the Item at the date of the PCA. This shall include the modification standard of all elements of the item, determine any unresolved problems or uninstalled modifications, demonstrate that the drawing Package/Master Record Index is up to date etc.
- The PCA, if successful, shall be followed by a repeat test demonstration to the requirements of the agreed test schedule.

10.2.4 First Article Inspection (FAI)

FAI shall be performed in accordance with paragraph 12.3 of this document and AS9102 – First Article Inspection. This shall be applied to the first Customer Deliverable unit and/or the first Production unit, as defined on the Purchase Order.

10.2.5 Authorised Change Control

Following approval of the sealed production baseline configuration standard, NO change shall be permitted WITHOUT the prior consultation and agreement of Ultra Engineering Department.

- The Supplier shall notify Ultra and agree the class of change prior to submission.
- Class 1 changes are defined as any change that affects Fit, Form, Function, Safety, Reliability or Interchangeability. Ultra MUST approve these modifications in writing prior to embodiment.
- Class 2 changes are defined as any change that does not affect fit, form, function, safety, reliability or interchangeability. Ultra MUST be notified of these changes, but approval is not mandatory. However Ultra exercise the right to amend the classification of change should it be deemed necessary.
- Requests for change shall be submitted to Ultra engineering configuration control.
- Documentation may be submitted in the Suppliers own format, and should state clearly what the intended change is, and this must include provision for acceptance signature by Ultra representatives.

10.3 Quality Plans

Where requested by Purchase Order, a Quality Plan shall be produced and submitted to Ultra QA Department for agreement within 28 days of receipt of order when specified by the Ultra purchase order, or any other contractual requirements.

The Plan shall define how the supplier will assure compliance with the order requirements. It may include Software Quality Plan if this is a requirement.

The structure and content shall be in accordance with ISO 10005 Guidelines for Quality Plans.

11 Process Control

11.1 Manufacturing Processes

The supplier shall ensure that they have the necessary processes in operation, that are capable and controlled to meet the requirements of the purchase order.

NB: Where processes are considered to be out of control the requirements of section 15.6 shall apply.

Where specified by contract any process deemed to be categorised as “special” (as marked on the drawing or purchase order) these processes shall be approved by ULTRA PCS in conjunction with relevant customers prior to any work being performed.

Note *No work shall commence without prior approval*

11.1.1 Manufacturing Process Changes

No changes to manufacturing processes shall be made without the prior approval and permission of Ultra QA department.

Furthermore, any deviations from drawing and specification requirements will require a concession or production permit in accordance with the requirements of Section 15.2 of this document.

Corrections to work instructions or documents must be legible, recorded, dated and traceable to the originator (e.g., signature, stamp, etc.) in ink or other permanent marking method with the original data being legible and retrievable after the change.

11.1.2 Work Environment/FOD

Ultra encourage the implementation of FOD systems in line with NAS412

In order to provide provision for the prevention, detection and removal of foreign objects and debris, the supplier shall ensure all work areas are controlled and maintained.

The procedure established by the supplier ensures the standard of FOD prevention activities to ensure the integrity of components delivered to our Customers.

Most FOD can be attributed to poor housekeeping, facilities deterioration, improper maintenance or careless assembly and inadequate operational practices.

By identifying potential problems, correcting negative factors, providing training and raising awareness through communication and access to industry feedback. With the adoption of procedure and the resulting continuous improvement, our products can be assured to be robust.

The objective of any FOD Prevention Process is to promote Ground and Flight safety and preserve private and national assets.

The Condition where foreign object debris may cause damage/or failure should the product be put into use. Examples are:

- Metal or wire clippings, solder balls and debris lying in the vicinity or electrical terminals, circuitry, connectors, components, etc.
- Construction debris
- Contaminated or dirty service equipment such as funnels, hydraulic test stand connectors, grease gun nozzles and etc.
- Improperly installed or secured operational or test equipment
- Fluid leaks.

11.2 Materials

The supplier shall ensure that all materials procured and used, comply with the requirements of both the drawing and the Ultra purchase order.

IMPORTANT – When specified by purchase order ensure the use of customer-designated or approved external providers, including process sources (e.g., special processes)

11.3 Key Characteristics

For parts that have certain parameters classed as key characteristics, the supplier shall employ statistical process control techniques during processing to ensure that the process producing the characteristic is statistically capable, monitored and is under control.

The supplier shall be notified via the purchase order.

NOTE - All statistical sampling plans must be industry recognised and PCS quality advised prior to use.

11.4 Traceability

The supplier shall maintain batch/lot manufacturing traceability from receipt to despatch, for all materials, products, processes and services.

11.5 Identification

All parts shall be marked in accordance with the drawing requirements and shall also carry a unique code number by which full manufacturing traceability shall be possible.

If there is physically no area / space on the component or the drawing states “not marked”, identification should be by means of an individual bag/tally.

11.6 Work instructions

The supplier shall create and maintain an operation plan, or route card, for each part, or family of parts, and shall ensure written instructions are provided to operators, and operations conducted recorded.

To improve clarity of the instruction the use of visual aids and photographs is recommended. Controls shall be in place to ensure changes to instructions are properly controlled.

11.6.1 Electronic Transmission Files

Where there is a requirement to provide electronic transmission files to a supplier, in order to assist in the preparation of NC programs, these shall be produced in IGES, CATIA, DXE, and SHRINKWRAP Pro/E format as appropriate.

Files may be sent to the supplier via e-mail or CD with the exception of ITAR restricted data and information which must be posted.

The supplier shall ensure, ALL ITAR restricted data and information is stored in a secure location / password protected / encrypted files as appropriate.

Controls shall be in place to ensure changes to instructions are properly controlled.

11.7 Welding

Where required, the supplier shall ensure all welding processes are conducted and controlled in accordance with Ultra technical instruction TI No 118 “Weld Classification and Inspection” and that operators are certified and approved by the appropriate regulating authority perform the task.

11.8 Soldering

Where required, the supplier shall ensure all soldering operations are conducted and controlled in accordance with IPC-J-STD-001- latest revision or equivalent (as agreed with Ultra Engineering Dept).

11.9 Anodising

Where required the supplier shall ensure all anodising of hardware is conducted and controlled in accordance with TI 5031 “Hard Anodising Requirements and Guidelines”.

11.10 Cleaning

Where required, the supplier shall ensure all interoperation and final cleaning of hardware is conducted and controlled as appropriate.

11.11 Pressure Testing

Where required, the supplier shall ensure all proof pressure testing and certification of vessels is conducted and controlled in accordance with TI 5035 “Pressure Testing for HiPPAG Systems”.

11.12 Sub-Contractors

When manufacturing item(s) to a Ultra purchase order, suppliers may only sub contract work to their 2nd Tier source if the supplier maintains a system of sub-contractor approval and surveillance, and passes any Ultra order conditions onto his sub-contractor.

Where the supplier does not maintain a system of sub-contractor approval and surveillance, permission must be sought from Ultra Purchasing Department prior to outsourcing.

11.13 Process Capability

Suppliers shall conduct sufficient studies to demonstrate that their processes are capable of consistently producing products and services to required specifications.

When requested by the supplier, guidance is available from Ultra QA Department.

11.14 Process Improvement

The supplier shall undertake to participate in the development, implementation and verification, of a process based continuous improvement system that is focused to process control as opposed to defect detection.

The prime objectives being, stable processes, quality and reliability of conforming items, reduced waste/scrap, increased throughput, flexible scheduling, reduced costs, delivery when scheduled and beneficial long-term supplier chain relationships.

12 Certification Activities

12.1 Verification

All products and processes shall be verified to confirm that they comply with the requirements of the drawing, specification and purchase order requirements.

The level of verification shall be appropriate to the activity or process being performed. Where indicated by Purchase Order, results from the verification activity should be supplied with the C of C.

12.2 Verification Methods

All verification methods shall be appropriate to the process/parameter being verified and shall demonstrate acceptable risk reduction.

12.3 First Article Inspection (FAI)

The manufacturer shall perform a FAI on all new products that is representative of the first production run and completed in the English Language. Prototype parts, or parts manufactured using methods different from those intended for the normal production process shall not be used for the FAI.

The FAI shall satisfy the requirements specified in AS 9102 (EN 9102). The manufacturer shall inform Ultra of its intention to perform an FAI and shall advise the proposed date of the inspection.

The supplier shall invite Ultra to witness the inspection if it so wishes however it is NOT mandatory that Ultra attend the FAI.

Following completion of the First Article Inspection (FAI) a First Article Inspection Report (FAIR) shall be submitted to Ultra with or prior to the first delivery. As a minimum the FAIR shall contain the 3 forms shown in Appendix A, together with a cover page.

The supplier shall perform a full FAI, or a partial FAI for affected characteristics, when any of the following events occurs:

- A change in the design affecting fit, form or function of the part.
- A change in manufacturing source, process, inspection method, location of manufacture, tooling or materials, that can potentially affect fit, form or function.
- A change in NC/CNC program or translation to another media that can potentially affect fit, form or function.
- A natural or man-made event, which may adversely affect the manufacturing process.
- A lapse in production for two years or as specified by the customer.

12.4
The following Items shall not require FAI, unless otherwise directed by Buyer:

- Standard hardware and electronic piece parts (AN, MS standard hardware, etc.).
- Commercial Off-the-Shelf (“COTS”) Items.
- Metallic (plate, bar, rod, etc.) and non-metallic (paints, sealants, adhesives, etc.) raw
    - Materials.
- Engineering models, design/concept prototypes, etc.
- Items that have been returned by Buyer for repair.
- Items procured to Buyer's part number where Buyer has not developed drawings and/or specifications controlling the Item’s physical and functional requirements.

12.5
Seller shall ensure that discrepancies and non-conformances, if any, discovered during the FAI are documented and dispositioned by the appropriate Material Review Board (“MRB”) actions,

(i.e. Seller’s MRB for Seller’s design and Buyer’s MRB for Buyer’s design).

12.6
For subsequent lots, seller shall present FAI documentation records for validation to buyers assigned supplier Quality Engineer, if requested by the buyer.

12.7
Seller shall provide to Buyer, within 48 hours of a request by Buyer, a complete copy of FAI reports at no increase in the cost, price, or fee of the PO.

13 Quality Records

13.1 Certified Design & Manufacturing Records
All certified design & manufacturing records of products supplied to Ultra shall be permanently retained, easily retrievable & legible. Liquid Paper is prohibited to be used on records. Records can only be disposed of when authorised in writing by Ultra.

Examples of Records include:

- Evidence of Goods-Inwards Inspection / Verification
- Raw Material Certifications
- Traceability of Purchased Materials throughout Manufacture
- Manufacturing Route Cards
- Evidence of Process Control
- Calibration Records
- Evidence of Stage / Final Inspection & Product Conformance
- Test Results – where applicable
- All FAI, Manufacturing, Inspection, test, CofC and shipping.
- Process capability or tooling control if applicable.

- All non-conforming material, dispositions, assignable causes, corrective actions and effectiveness of corrective actions.
- Forward records to Ultra upon request,

Where specified by the purchase order, records shall be made available for review by Ultra's Customers & Regulatory Authorities as appropriate.

14 Software Control

14.1 Deliverable Software/Firmware

If Software/Firmware is to be delivered, a Software Quality Plan is required, which shall be submitted to Ultra QA Department for approval within 28 days of receipt of the purchase order.

In addition, a Software Requirements Definition Specification (SRDS) shall be supplied which includes but is not limited to the following:-

- Scope & Applicable Documents
- Outline Design Specification (Hardware & Software)
- Overall Function
- Hardware Structures
- External Inputs / Outputs
- Programming Languages & Development Tools
- Flow Diagrams
- Compliance Matrix

14.2 Non-Deliverable Software

The supplier shall have procedures that address the following minimum requirements:

14.2.1

Organizational responsibility and authority including product and process integrity

14.2.2 Verification & Validation

- Define the Verification and Validation process.
- Test procedure or test description and results shall be documented, reviewed and retained.
- Provide objective evidence that the software performs its required function.
- Inspection review and approval of software must be performed by someone acting in an acknowledged product integrity role. Software used to verify quantitative values (e.g., CMM, etc.) requires an independent method of validation (i.e., layout inspection, fixture check or comparison with another CMM program previously verified by an independent method) and correlation of the two sets of results.

Note! Acceptable correlation requires the difference to be within 10% of the tolerance for each characteristic. Differences greater than 10% but not exceeding 25% may be acceptable

with documented justification and approval from Ultra Quality Team. Differences greater than 25% are not acceptable.

14.2.3

Uniquely identify each version of the software.

Note: In cases where the library contains production, test and developmental software programs, there shall be a unique identifier assigned to distinguish the three types {e.g., CMM_V1_dev, CMM_V1_test, and CMM_V1_Prod etc.}

14.2.4 Change Control

Define the software change process. This includes, but is not limited to:

- Identifying problems.
- Analysis for problem cause
- Implementation and verification of corrective action
- Re–verification and re–validation of software shall be employed to ensure that the modified software meets the changed requirements.

14.2.5 Access Control

Limited access control shall be defined and implemented. Examples of such controls include:

- Read and write access of the master and copies.
- Edit Key restrictions (e.g. NC, CNC Machine, etc.).

14.2.6 Archiving, Backup & Recovery

Define the process used to prevent the use of obsolete software programs. Software that is no longer required for production shall be:

- Restricted and/or removed from all systems so it is no longer available for use.
- Master copies, duplicates, and user copies shall be restricted and/or removed from all areas except the archive.
- Obsolete software in the archive shall have restricted access to prevent unauthorized use.
- Master copies shall be stored in a secure location.
- Software programs shall be archived in a manner that allows retrieval of all released versions of software programs for traceability purposes.
- Master copies shall be backed up regularly

14.2.7 Identification, Storage, Handling & Release

Define the method for identification, storage, handling and release of software to the user. The end user shall only access the latest software program version.

14.3 Obsolescence Management

The supplier shall operate and maintain a process for the control of obsolescence management on **ALL** components and equipment supplied to ULTRA PCS.

14.3.1 Supplier Notification to Ultra

Supplier **SHALL** notify ULTRA PCS immediately that a component and or material is planned to become obsolete to enable suitable actions to be taken by ULTRA PCS design personnel.

15 Non-Conformance

15.1 Supplier

The supplier **MUST** inform Ultra as soon as is reasonably practical if he suspects that non-conforming items have been supplied.

The supplier **Shall** identify all non-conformities and immediately segregate from acceptable product and in sentencing the part, shall document the item(s) and the actions to prevent recurrence.

Item(s) **Shall not** be salvaged without the prior written authority from Ultra Engineering/QA Departments.

15.2 Concession or Production Permit Application

The Supplier may request that Ultra accept the non-conformance by first notifying Ultra Purchasing Department, and then submitting a concession or production permit.

Before submitting the application, the supplier shall discuss the problem first with the QA and Engineering department so that a quick preliminary decision can be made. This is to save time if the components are not acceptable and have to be re-manufactured.

Note If permission is given to submit an application, a charge may be levied for the administration costs of processing any such application irrespective of acceptance or not.

15.3 Completion & Submission of the Application

15.3.1 Application for Concession/Waiver

All applications shall be submitted on an Application for Concession / Waiver (BMS-FORM-005). A copy is posted on the Supplier Portal.

15.3.2 Completing & Submission

The supplier shall complete the Section 1of the Concession / Waiver application form, (BMS-FORM-005) and then submit the application to the Buyer quoted on the purchase order.