

# **PRECISION MICRO PROCEDURE**

## **Supplier Quality Requirements Document**

**Company confidential**

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**REVISION RECORD SHEET** *(keep on separate sheet)*

Version	Date	Description	Approval status
1	28 Apr 2018	New	Current Issue

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## 1. **PURPOSE / INTRODUCTION**

Precision Micro supplier quality and delivery performance is fundamental to ensuring that Precision Micro continues to meet and exceed the increasing demands of its customers. In support of this, Precision Micro expects its suppliers to maintain an effective Quality Management System (QMS), considered as the cornerstone for delivering the highest levels of customer service in the supply of articles, services and processes.

Precision Micro is committed to working with its suppliers to drive continuous improvement on quality, delivery and cost performance through improved processing and organisational efficiency.

Precision Micro support the certification of suppliers to the highest levels and consider certifications as a key asset during any supplier selection process. A lack of such certifications will invoke a raised level of surveillance of the supplier based on a higher level of perceived risk. The list below indicates the primary criteria which Precision Micro use to ascertain a suppliers risk profile.

- The certification held by suppliers.
- Acceptance of Precision Micro terms and conditions (Inc. this document).
- Quality and delivery performance.

The requirements defined by this document are an integral part of the binding contract between suppliers and Precision Micro and will be referenced in all Precision Micro contracts and P.Os.

### 1.1. **DOCUMENT FORMAT**

To facilitate its use, this document is structured according to the chapters of ISO9001:2015 Quality Management Standard, AS/EN/JISQ9100:2016 Aerospace Quality Management Standard (chapters 4-10) and TS16949:2016. Additional Precision Micro requirements are highlighted in bold italic text throughout sections 5- 10.

Precision Micro requires compliance for all sections and sub-sections within this document, including the corresponding section or sub-section of AS/EN/JISQ9100:2016 (the minimum requirement for non- Aviation, Space and Defence suppliers is compliance with ISO9001:2015). The statement which identifies this as a requirement is as follows:

*“The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.”*

### 1.2. **ACCESS**

Precision Micro shall have the right of access to any supplier involved with Precision Micro product. This shall include access to any applicable documentation. The supplier shall provide Precision Micro customers (or the customers “authorised” representatives) and/or Regulatory Authorities rights of access to premises where Precision Micro work is being performed. Such access shall be used to verify that the quality activities being undertaken meet the requirements of the Precision Micro contract.

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Where a supplier is approved to the AS/EN/JISQ9100:2016 series of standards, then the suppliers Online Aerospace Supplier Information System (OASIS) database administrator shall grant Precision Micro access rights to certification and assessment results.

### 1.3. SUPPLIER POLICY COMPLIANCE REQUIREMENTS

In order to supply Precision Micro with products or services all suppliers shall be able to demonstrate compliance to industry-wide acknowledged policies. A list of common industry-wide policies is demonstrated below; this is not a limited list:

- Anti-Bribery Act / Code of Ethics
- Anti-Fraud
- Conflict Minerals
- Counterfeit Avoidance
- Cyber Security
- Modern Slavery
- Substance Abuse
- Whistle-blower Policy

### 1.4. TRADE COMPLIANCE

The supplier shall not release any materials, equipment, hardware/technical data or drawings supplied by Precision Micro to any other party (national or international, including sister companies or associated businesses) without the prior written approval of the Precision Micro Trade Compliance Manager from the applicable Precision Micro site(s).

The supplier shall not purchase materials, components, parts or processes from countries/regions prohibited under export control regulations for use in Precision Micro product. A current listing of prohibited countries/regions is available from Precision Micro procurement.

The supplier shall not, without prior written approval from Precision Micro, change the source for a controlled product or service (national or international, including sister companies or associated businesses).

All technical documents provided to Precision Micro shall have the relevant export control classification information and destination control statements added to them before they are released from the supplier.

Materials supplied from anywhere in the world may be subject to USA, UK or other local, regional and international trade regulations. All Precision Micro sites are subject to these regulations. When required, appropriate licenses, permits and permissions shall be obtained for the export from, and import to, any Precision Micro facility. Precision Micro is responsible for obtaining these authorisations. The Supplier shall provide any information required to obtain these authorisations upon Precision Micro's request.

The supplier is responsible for obtaining required authorisations for the export from, and import to, the supplier's facilities.

In addition, the supplier shall provide the following product classification information for all items supplied to Precision Micro for Precision Micro's use in the export or import of items:

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- Local/Regional Export Control Classification Number
- Harmonized Tariff Number/Commodity Code

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- Country of Origin

A table of countries currently controlled by a US Embargo Sanction is available from Precision Micro Group Procurement upon request.

## 1.5. HEALTH, SAFETY AND THE ENVIRONMENT

The supplier shall be committed to providing a safe and healthy work environment to minimise accidents and injuries.

The supplier should respect the environment and work to minimise waste, prevent pollution and conserve energy. The supplier is required to comply with all applicable permits and authorisations, including material and waste handling. The supplier is required to meet the requirements of international, national and regional legislation that are applicable to the Health and Safety of the product, processing and waste from such activities. This legislation includes, but is not limited to, RoHS, REACH and WEEE compliance where applicable. Registration to ISO14001 and OHSAS18001 is strongly encouraged.

## 1.6. SCOPE

Requirements specified in this document are complementary (not alternative) to the current AS/EN/JISQ9100:2016 series of standards for Aviation, Space and Defence suppliers and TS16949:2016 (for non-aviation, space and defence suppliers ISO9001:2015 shall apply) and contractual/applicable law and regulatory requirements.

This document also contains:

- Supplier requirements for Precision Micro recognition of certification, as issued by an accredited Certification Body (CB), in accordance with International Aerospace Quality Group (IAQG) requirements.
- Precision Micro expectations for all of its Suppliers today and in the future.

Allowance to deviate from the Precision Micro requirements within this document is at the sole discretion of Precision Micro and will have to be agreed with the relevant Precision Micro Supplier Quality Assurance point of contact.

Deviation requests regarding PMPRC-10 by the supplier shall be completed using MFT-31. The supplier shall use this document to identify all deviations and mitigation activity which has been/will be implemented. Authorized deviations will be managed under the Precision Micro "Limited Approval" process and shall be noted in the Supplier's Scope of Approval.

Where deviations from PMPRC -10 have been requested, and when directed by Precision Micro, the supplier shall submit a Precision Micro Supplier Industrial Dossier (using template MFT-65).

Where communicated Precision Micro also requires , Suppliers to conform to Precision Micro "key customers of interest" requirements e.g. where supplying parts/articles which are to be used within product for Airbus, the supplier shall conform to Airbus quality requirements.

## 1.7. APPLICABILITY

This Precision Micro Supplier Quality Requirements Document (SQRD) is applicable to all suppliers who furnish product, material, processes or services that contribute to product quality for any Precision Micro sites within Precision Micro PLC.

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The quality system requirements specified herein are intended to form part of Precision Micro contract requirements, and are in addition to all (contractual or other) requirements which may need to be

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complied with by the supplier, including any legal, regulatory or administrative requirements. For the purposes of this document, a contract exists when the supplier accepts an obligation to supply products or services to any Precision Micro site, whether under a purchase order, long term agreement or otherwise.

The acceptance by the supplier of a contract stipulating application of this document (total or partial) indicates acceptance of the content of this document. It is a requirement for the supplier to communicate and flow down these requirements to its sub tier sources. The supplier shall be able to provide the relevant evidence of such communication upon request by Precision Micro.

It is the suppliers' responsibility to ensure it implements any revisions of this document and its content within its own organisation. The latest version of this document is available upon request

## 1.8. TERMS AND DEFINITIONS

Suppliers of products/services used by Precision Micro in Aviation, Space & Defence (ASD) applications are required to meet the terms defined within AS/EN/JISQ 9100:2016.

Suppliers of products/services used by Precision Micro in Non-Aviation, Space & Defence applications are referred as "Industrial" suppliers later in this document, these suppliers are required to meet the terms defined in the ISO9001:2015 standard as a minimum.

### ASD SUPPLIER

- Supplier of components for use within an Aviation, Space & Defence application.

### INDUSTRIAL SUPPLIER

- Supplier of components for use within a Non-Aviation, Space & Defence application.

## 1.9. MEANS OF UNDERSTANDING

The use of **shall**, **should**, **must**, **will** and **may** within this document shall observe the following rules:

- The word **shall** in the text denotes a mandatory requirement: deviations from such a requirement is not permissible without formal agreement.
- The word **should** in the text denotes a recommendation or advice on implementing such a requirement of the document; such recommendations or advice is expected to be followed unless good reasons are stated for not doing so.
- The word **must** in the text is used for legislative or regulatory requirements and shall be complied with.
- The word **will** in the text denotes a provision or service or an intention in connection with a requirement contained in this document.
- The word **may** in the text denote a permissible practice or action; it does not express a requirement contained in this document.

These means of understanding are applicable in the entirety of the document.

**1.10. FORMS AND FORM TEMPLATES**

Forms and form templates referenced in this document are available from the applicable Precision Micro procurement department.

## 1.11. REFERENCE DOCUMENTS

It is the responsibility of the supplier to ensure that they are working to the latest version of specified standards referenced within this document as well as contract requirements.

Requests for Precision Micro or Precision Micro customer specific specifications that are needed shall be requested from the applicable Precision Micro procurement department.

It is the responsibility of the supplier to obtain copies of non Precision Micro documents referred to below. These documents include, but may not be limited to, the following:

- ISO 10012 Requirements for Measurement Processes and Measuring Equipment
- ISO 13485 Medical devices -- Quality management system requirements
- ISO 17025 Requirements for the Competence of Testing & Calibration Laboratories
- ISO 31000 Risk management -- Principles and guidelines
- ISO 9000 Quality management systems -- Fundamentals and vocabulary
- ISO 9001 Quality Management Systems Requirements
- ISO 15489 Information and documentation. Records management.
- AS 6081 Fraudulent/Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition - Distributors Counterfeit Electronic Parts; Avoidance Protocol, Distributors
- AS/EN/JISQ 9100 Requirements for Aviation, Space and Defence Organizations
- AS/EN/JISQ 9102 Aerospace First Article Inspection Requirement
- AS/EN/JISQ 9103 Variation Management of Key Characteristics
- AS/EN/JISQ 9110 Requirements for Aviation Maintenance Organisations
- AS/EN/JISQ 9115 Requirements for Aviation, Space and Defence Organizations- Software
- AS/EN/JISQ 9120 Requirements for Aviation, Space and Defence Distributors
- AS/EN/JISQ 9131 Nonconformance Data Definition and Documentation
- AS/EN/JISQ 9145 Requirements for Advanced Product Quality Planning and Production Part Approval Process
- AS 13000 Problem Solving Requirements for Suppliers
- ASME VIII Requirements for Pressure vessels
- ASME II A/B/C Material specification
- ASME IX Requirements for Qualification Welding/Brazing
- ASME V Requirements for Non Destructive Testing
- PED 97/23/EC Requirements for Pressure Equipment Directive
- IATF 16949 Transition Strategy ISO/IATF 16949 › IATF 16949 — Revision 1

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## 2. **SUPPLIER APPROVAL**

Dependent upon the suppliers business sector and classification, the supplier shall comply with the requirements of the standard(s) listed in the table in section 3. Additional requirements may apply, and exceptions may be considered at the discretion of Precision Micro and agreed on completion of MFT-31.

Approved suppliers and sub-tier suppliers shall establish, document and maintain a Quality Management System (QMS) that is independently assessed and certified. Precision Micro shall only accept Certification Bodies which conform to ISO/IEC 17021 and/or are approved by IAF MLA signatory accreditation organizations such as ANAB, UKAS etc.

**Note: Although recommended certification to AS/EN/JISQ 9100, AS/EN/JISQ 9102, AS/EN/JISQ 9110 or AS/EN/JISQ 9115 is not mandated**

### 2.1. **SUPPLIER SURVEILLANCE**

Precision Micro shall maintain a supplier scorecard for all key suppliers. Dependant on supplier performance and risk to Precision Micro, suppliers may be subject to continual surveillance.

Precision Micro surveillance of suppliers shall include as appropriate, onsite audits, assessments or inspections as deemed necessary.

At any time, Precision Micro may revoke the approval granted to a supplier (thus removing them from any Approved Supplier List) or place conditions on a suppliers approval(s).

Where required the supplier shall implement an improvement plan approved by Precision Micro, and submit a follow up status report as defined and agreed by Precision Micro.

### 2.2. **CHANGES TO THE SUPPLIERS ORGANISATION**

Suppliers shall notify Precision Micro within two (2) working days of any changes in its organisation affecting key management personnel and approvals.

Suppliers shall notify Precision Micro of any changes, prior to implementation, in its organisation affecting manufacturing site location, manufacturing processes, approved sub-tier sources, or other such changes that affect the production materials or supply of services to any Precision Micro facility.

The list of required information and timelines are defined in section 8.1.5 (Control of Work Transfer).

### 2.3. **SUPPLIER CLASSIFICATION**

Precision Micro suppliers are classified as per below:

- **PROPRIETARY (CODE A)**

A supplier, who designs, fabricates, assembles or tests products using its own engineering specifications and drawings. This classification also includes those suppliers who supply airborne software and avionics.

Also called „OEM“, „Make to Spec“, „Build to Spec“ or „Design Supplier“.

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- **SUBCONTRACTOR (CODE B)**

A supplier who fabricates, processes or tests products using Precision Micro or Precision Micro's customer engineering specifications and/or drawings.

Also called „Make to Print“, „Build to Print“ or „Producer“.

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- **MANUFACTURER (CODE C)**

A supplier who produces catalogue items, raw materials, hardware, process materials (chemicals and/or consumables) which meet Precision Micro, Precision Micro customer or industry standards and specifications including castings and/or forgings.

- **MAINTENANCE AND REPAIR (CODE D)**

A supplier, who repairs, overhauls and/or maintains products in accordance with Original Equipment Manufacturer (OEM), Precision Micro, customer or military documents, and under specific approval granted by the applicable Regulatory Agencies and the OEM.

Also called a „Service Provider“.

- **DISTRIBUTOR (CODE E)**

A supplier of part or material that conforms to a published specification by an established industry or national authority, and whose characteristics are defined by a text, national/military standard drawing, or catalogue item (This shall also include suppliers who provide but do not manufacture or modify Precision Micro designed parts).

Unless otherwise requested Commercial Off the Shelf (COTS) parts or materials shall not require a First Article Inspection (FAI) report.

Also called a „Stockist“ or „Dealer“.

- **NON PRODUCTION (CODE F)**

A supplier of a service or a product which is not part of the end manufactured product and which does not contribute directly to its key characteristics, including but not limited to consumables, tooling and ground equipment.

### 3. **AS/EN/JISQ9100:2016 AND ISO9001:2015 CERTIFICATION**

As a member of the International Aerospace Quality Group (IAQG) and complying with IAQG recommendation, Precision Micro recommends every supplier of products for Aviation, Space & Defence applications to be registered to the AS/EN/JISQ 9100 series by an accredited Certification Body which is approved by IAQG. The scope of the certification shall include the product and/or service provided to Precision Micro. As a minimum, all suppliers are required to comply with ISO9001:2015; the registration shall be conducted by an accredited Certification Body approved by the national governing body for Quality Registrations.

The table below identifies the classifications for Precision Micro suppliers, along with the recommended minimum QMS requirements for the respective business sector:

#### 3.1. **TABLE 1**

Supplier Type Code	Supplier Class Description	Aviation, Space & Defence (ASD) Supplier	Industrial Supplier (Inc. Energy/Oil, Medical and Gas/Automotive)



A	Proprietary (Engineering Design)	AS/EN/JISQ9100:2016 with "Design and Development"	ISO9001:2015 or industry equivalent
B	Subcontractor	AS/EN/JISQ9100:2016	ISO9001:2015 or industry equivalent

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Supplier Type Code	Supplier Class Description	Aviation, Space & Defence (ASD) Supplier	Industrial Supplier (Inc. Energy/Oil, Medical and Gas/Automotive)
C	Manufacturer	AS/EN/JISQ9100:2016	ISO9001:2015 or industry equivalent
D	Maintenance	AS/EN/JISQ9110:2016	ISO9001:2015 or industry equivalent
E	Distributor	AS/EN/JISQ9120:2016	ISO9001:2015 or industry equivalent
F	Non Production	ISO9001:2015	ISO9001:2015 or industry equivalent

**NOTE: In addition, regulatory authority approvals may be required in the applicable sector such as EASA (European Aviation Safety Agency) and FAA (Federal Aviation Administration) etc.**

**NOTE: When identified by Precision Micro, special processes shall be conducted by an approved NADCAP source. Special processes include, but are not limited to:**

- **Brazing**
- **Cable and Harness**
- **Chemical processing (Including: anodising, plating, painting, passivation etc.)**
- **Coating**
- **Composites**
- **Elastomeric Seals**
- **Heat treating**
- **Material testing laboratory**
- **Nonconventional Machining**
- **Non-destructive testing**
- **Printed circuit assemblies**
- **Printed circuit boards**
- **Shot peening**
- **Welding**

#### **4. QUALITY MANAGEMENT SYSTEMS (QMS)**

##### **4.1. Understanding the Organization and its Context**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### **4.2. UNDERSTANDING THE NEEDS AND EXPECTATIONS OF INTERESTED PARTIES**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### **4.3. DETERMINING THE SCOPE OF THE QUALITY MANAGEMENT SYSTEM**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

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#### 4.4. QUALITY MANAGEMENT SYSTEM AND ITS PROCESSES

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 5. **LEADERSHIP**

#### 5.1. Leadership and Commitment

##### 5.1.1. General

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### 5.1.2. Customer focus

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***The supplier shall ensure that product conformity and on-time delivery to Precision Micro is measured and appropriate action is taken when the suppliers management become aware that planned results (e.g. quality and delivery) are not being, or shall not be, achieved. A designated person shall immediately notify Precision Micro in any instance where planned results are not, or may not be, met.***

#### 5.2. POLICY

##### 5.2.1. Establishing the Quality Policy

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### 5.2.2. Communicating the Quality Policy

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

#### 5.3. ORGANIZATIONAL ROLES, RESPONSIBILITIES, AND AUTHORITIES

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 6. **PLANNING**

#### 6.1. Actions to Address Risks and Opportunities

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## 6.2. QUALITY OBJECTIVES AND PLANNING TO ACHIEVE THEM

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

## 6.3. PLANNING OF CHANGES

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

## 7. SUPPORT

### 7.1. Resources

#### 7.1.1. General

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***Any changes in any resources that may affect the products or services provided to Precision Micro shall be reported to Precision Micro within 14 days of a notification of change to those resources.***

***The supplier shall establish a business continuity plan to identify, analyse, evaluate and mitigate risks associated with business continuity addressing, but not limited to:***

- ***Product, facility or individual skill***
- ***Equipment and systems (including email/internet connectivity)***
- ***Access to alternative production facilities***
- ***Critical points of failure***
- ***Action plans and timescales for business recovery***
- ***Procedures to follow in the event of an emergency***

#### **Organisational Structure**

- ***The supplier shall make available to Precision Micro a complete and up to date description of the organisational structure, job roles and skill requirements for personnel contributing to product quality. This is also noted as a requirement in section 7.2.***

#### 7.1.2. People

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

#### 7.1.3. Infrastructure

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#### 7.1.4. Environment for the Operation of Processes

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***The supplier shall maintain its workplace in a state of order, cleanliness and repair consistent with the product and production process needs.***

***NOTE: Precision Micro recommend the implementation of improvement tools such as 6S (Six-S) and visual management (for workplace design/organisational improvement) as an approved means of compliance.***

- ***Product verification activities that require accurate visual verification shall be conducted in lighting conditions that provide a white light intensity of not less than 1100 LUX (UK)/102 Foot-candles (US). The white light intensity conditions shall apply to all aerospace suppliers, and where it is communicated as a customer specific requirement, industrial suppliers.***

#### 7.1.5. Monitoring and Measuring Resources

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***Calibration systems shall meet the applicable requirements of ISO 10012, ISO 17025 or ANSI/NCSL Z540.***

***NOTE: The supplier should ensure that all measurement systems have been tested for Repeatability and Reproducibility (R and R) in line with Industry Standards, such as AS13003.***

#### 7.1.6. Organisational Knowledge

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 7.2. COMPETENCE

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

**Competence and Training**

- ***The supplier shall establish a documented procedure for identifying training needs, completion of training and review of competence of all personnel performing work which directly or indirectly affects conformity of product or production process requirements.***
- ***The supplier shall maintain a complete and up to date description of the organisational structure, job roles and skill requirements for personnel contributing to product quality.***
- ***A skills matrix for all personnel performing work directly or indirectly affecting product conformity (operators/inspectors/others) shall be established and maintained. This shall cover both temporary and contract personnel.***

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- ***The supplier shall maintain records of training and competence for the period that the relevant employee remains within the supplier's organisation and for three (3) years after leaving the organisation.***

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- **Eye examinations, including visual acuity and colour vision, shall be administered by a medically qualified/trained person to all individuals performing visual inspection and/or other product acceptance activities that require visual acuity. Tests shall be conducted annually for visual acuity, for colour vision only a single test is required. Records of all eye tests shall be maintained by the supplier for three (3) years after leaving the organisation.**

### 7.3. AWARENESS

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 7.4. COMMUNICATION

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 7.5. DOCUMENTED INFORMATION

#### 7.5.1. General

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

#### 7.5.2. Creating and Updating

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

#### 7.5.3. Control of Documented Information

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

#### **Control of Documents**

- ***Where Precision Micro modifies a document referenced within the contract, the supplier shall take the appropriate actions to ensure that the modification is applied in accordance with the contractual provisions and inform Precision Micro of its application.***
- ***Corrections to documents shall be recorded, dated and traceable to the originator (e.g. by using the signature or stamp) – see section 8.5.2 for requirements of operator certification and stamp control. All amendments shall be made by a single line through the original text using black permanent ink, in such a way as to leave the original text legible. A stamp, signature (or electronic equivalent) and date shall be placed adjacent to that amendment.***

#### **Control of Records**

- ***The supplier shall maintain, and have available on a timely basis, all records traceable to the conformance of Product/Parts/Services delivered to Precision Micro, including delivery/post-delivery documentation, shall be kept for a minimum of 10 years from the date on which that document was published.***

- ***Precision Micro reserve the right to require documentation for some products to be retained for the “life of the aircraft”.***

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- **Supplier records shall be made available to Regulatory Authorities and Precision Micro Authorised Representatives, and their customers, within one (1) business day of request.**
- **Supplier shall notify Precision Micro of records to be disposed of prior to disposal. Precision Micro reserve the right to request delivery of such records, in the event Precision Micro chooses to exercise this right the supplier shall deliver such records to Precision Micro at no additional cost on media agreed by both sides.**
- **Records shall be stored in secure areas to negate the effects of damage and deterioration from, for example, fire and floods and ensure ease of retrieval. Backup copies shall be stored in a separate facility.**
- **All data that is stored by electronic means shall be secure, regularly backed up, supported by a disaster recovery procedure that is defined, documented, implemented and regularly audited for compliance.**
- **In the event of supplier closure, insolvency or similar event, termination / expiry of the contract, all pertinent records shall be supplied to Precision Micro.**

**NOTE: It is recommended that the suppliers apply the principles and practices of records management, as detailed in BS ISO 15489-1:2016.**

## **8. OPERATION**

### **8.1. Operational Planning and Control**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***The supplier shall implement a process to control the whole product lifecycle. Consideration should be given, as a minimum, to the following:***

- ***Sales, Inventory and Operations Planning (SIOP)***
- ***Master Production Schedule (MPS)***
- ***Material Requirements Planning (MRP)***

***A process to plan and manage production capacity shall be maintained and take into account availability of personnel, equipment and all customer"s demand.***

***The supplier shall, when requested, submit a product quality plan which shall be approved by Precision Micro prior to delivery of any product.***

#### **8.1.1. Operational Risk management**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products.*

***In addition to the above:***

***The supplier shall demonstrate how pro-active obsolescence management is implemented, controlled and monitored. This shall be an integral part of the design, development, manufacturing and product support processes, and shall be detailed when requested in an***

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*agreed obsolescence management plan.*

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**NOTE: When conducting its periodic risk review the supplier should consider employing a structured assessment methodology, e.g. ISO31000 and apply it internally, as well as to sub-contractors.**

**8.1.2. Configuration Management**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products.*

**In addition to the above:**

- **Suppliers shall establish a configuration management system to ensure:**
  - **Technical and administrative functions identify, document, control, report and validate the physical and functional characteristics of a product.**
  - **Engineering definition of products and their change history are known at any point in time and can be provided to Precision Micro upon request.**
  - **Verification that all aspects of a change have been assessed for completeness.**
- **Suppliers shall establish procedures to identify, document, review, approve and control all changes and modifications.**

**8.1.3. Product Safety**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products.*

**8.1.4. Prevention of Counterfeit Parts**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products.*

**In addition to the above:**

**For electronic component suppliers, the requirements of AS6081 shall apply.**

**8.1.5. Control of Work Transfer**

- **The supplier shall plan and manage work transfers in a controlled manner so that the product conforms to requirements during and after the temporary or permanent transfer of the following types:**
  - **From the suppliers facility to another facility/location.**
  - **From the suppliers facility to a subcontractor/sub-tier supplier.**
  - **From a subcontractor/sub-tier supplier to the suppliers facility.**
  - **From one subcontractor/sub-tier supplier to another subcontractor/sub-tier supplier.**
  - **Any transfer of work within the suppliers facility that could have an effect upon the continuity of supply or quality of the product (dependant on risk).**
- **The supplier shall also consider the intent of this clause for significant changes to their ERP/MRP system that would affect or disrupt continuity of supply to Precision Micro.**
- **The supplier shall manage the risk of work transfer, notify and seek approval for any changes a minimum six (6) months in advance to Precision Micro procurement for approval. A timing plan for the proposed change, supported by mitigation plans that shall eliminate any quality, delivery or cost implications shall be provided to Precision Micro.**

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- **The supplier shall as a minimum, make available the following before and after the transfer;**
  - **Description of the new location, with general layout and pictures or floor plan.**

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- *A list of parts involved in the transfer.*
- *Timeline and plan for each step of the transfer.*
- *Last article inspection plan from the current location.*
- *A full first article inspection report plan prior to first production in the new location.*
- *This activity shall be at the suppliers cost, and an agreed minimum safety stock shall be guaranteed to cover the transition period.*
- *The supplier may only proceed with the work transfer (source change) when a response has been received from their Precision Micro purchasing contact, the supplier shall comply with requirements specified in the response.*
- *A single point of contact shall be identified by the supplier and shall regularly inform Precision Micro of progress, key risks and associated mitigation plans.*
- *The supplier shall ensure delivery performance is protected during and after any work transfer.*

## 8.2. REQUIREMENTS FOR PRODUCTS AND SERVICES

### 8.2.1. Customer Communication

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***The supplier's management representative shall be the principal link between the supplier and Precision Micro quality. This representative shall be the authorised contact on all matters affecting the quality and delivery of product shipped to Precision Micro.***
- ***Changes that may affect either quality or delivery shall be documented and communicated to the applicable Precision Micro quality and/or procurement representative prior to the change being made.***
- ***All communications between the supplier and Precision Micro shall be written in the English language, unless legal requirements preclude this.***

### 8.2.2. Determining the Requirements for Products and Services

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 8.2.3. Review of Requirements Related to the Product

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***Verbal agreements or instructions shall under no circumstances be construed as approval or authorisation to proceed with any activity relating to product or service to be delivered to Precision Micro.***

#### 8.2.4. Changes to Requirements for Products and Services

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

### 8.3. DESIGN AND DEVELOPMENT OF PRODUCTS AND SERVICES

#### 8.3.1. General

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

#### 8.3.2. Design and Development Planning

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***The supplier shall maintain mechanisms, establish structured project teams, and/or demonstrate practices that consider the cross-functional nature of the product design throughout the product lifecycle.***
- ***The supplier shall maintain a current and approved design and development plan and “design to delivery” process flow diagram where required by Precision Micro. This shall include a software quality plan when the product contains software (QMS Requirements can be found using AS/EN/JISQ9115).***

#### 8.3.3. Design and Development Inputs

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***The supplier shall review all design specifications, requirements, drawings, statutory requirements, and quality requirements for completeness and confirm that there are no omissions. Any omissions identified shall be advised to Precision Micro in writing. It is the supplier’s responsibility to mitigate any product (design specific) requirements omissions.***

#### 8.3.4. Design and Development Controls

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***The supplier shall prepare and submit to Precision Micro the following:***

- ***Qualification Programme Plan (QPP) - a plan for the qualification of each individual part number.***
- ***Qualification Test Procedure (QTP) - document that describes all tests/verification to be performed in order to demonstrate the compliance of the part number to its design requirements.***

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- **Qualification Test Report (QTR) - report of the result(s) of each QTP.**

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- **Declaration of Design and Performance (DDP) - preliminary or final document to summarise the test, verification and results which declare the status of a part number with any applicable limitations.**
- **Acceptance Test Procedure (ATP) – detail of the testing methods employed during series manufacture to verify product compliance and based on those utilised during validation of the product.**

8.3.4.1. When tests are necessary for verification and validation, these tests shall be planned, controlled, reviewed, and documented to ensure and prove the following:

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- **The supplier shall perform technical reviews of all product and outputs from their design and development process.**
- **Design reviews are only considered to be closed when all actions are completed and documents have been approved.**
- **Examples of reviews to be conducted include, but are not limited to:**
  - **Preliminary Design Review (PDR)**
  - **Critical Design Review (CDR)**
  - **Test Readiness Review (TRR)**
  - **Production Readiness Review (PRR)**
  - **Qualification Review (QR)**
- **Records of all reviews shall be made available to Precision Micro.**
- **Precision Micro may request attendance at any of the above reviews.**

### 8.3.5. Design and Development Outputs

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- **Where the supplier is involved in the product design the design and development outputs shall include the Design Failure Mode Effect Analysis (DFMEA) for the product produced by an appropriate cross functional team.**
- **The DFMEA shall be used to identify any critical risk items, including identification of key characteristics, overall product performance, and product weight (mass) and determine and record specific actions to be taken for these items.**
- **The design and development output shall consist of the necessary configuration and the design features of the product. This will include the manufacturing and assembly data necessary to enable the supplier's cross functional team to prepare the initial Process Failure Mode Effect Analysis (PFMEA), which will confirm manufacturability of the design. The PFMEA shall identify all process and product key characteristics required for manufacture.**

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- ***Sole source and proprietary products/processes used or bought by Precision Micro suppliers shall be communicated to and approved by a Precision Micro procurement representative.***

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### 8.3.6. Design and Development Changes

- **Design and development changes including software shall be identified and records shall be maintained.**
- **Following the agreement of a production baseline, defined at the CDR, all changes are to be identified and classified as follows:**
  - **Class 1 (major) - change/modification, which affects the operational performance, interchange ability, fit, form or function.**
  - **All class 1 (major) change/modification requests shall be submitted to and approved by Precision Micro prior to incorporation.**
  - **Class 1 changes shall result in a change of supplier part number. This includes software.**
  - **Class 2 (minor) - all changes that cannot be defined as major.**
  - **For class 2 (minor), a supplier can use their own change request form. The form shall contain sufficient information to define the proposed change.**
  - **Precision Micro shall be forwarded all class 2 changes for review prior to implementation.**
  - **For all changes and prior to any change, the risk shall be assessed by the cross functional team by updating the D/PFMEA.**
- **The organization shall retain documented information relating to the following:**
  - **Design and development changes.**
  - **The results of reviews.**
  - **The authorization of the changes.**
  - **The actions taken to prevent adverse impacts.**

## 8.4. CONTROL OF EXTERNALLY PROVIDED PROCESSES, PRODUCTS, AND SERVICES

### 8.4.1. General

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

#### **Purchasing Process**

- **When specified on the drawing or contract, suppliers shall use only sources approved by Precision Micro or a Precision Micro customer to perform special processes or procure raw material.**
- **The supplier shall be responsible for the quality of all products purchased from sub-tier suppliers, including Precision Micro or Precision Micro customer sources.**
- **The supplier shall monitor subcontractor/sub-tier Supplier performance through, at a minimum, the following indicators:**
  - **Delivered product quality**
  - **Customer returns**
  - **Delivery schedule performance**

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***This shall include taking appropriate corrective action with poorly performing subcontractor/sub-tier suppliers.***

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- *The supplier shall demonstrate risk management in the selection and monitoring of subcontractors and sub-tiers.*
- *The supplier shall implement appropriate controls for counterfeit parts prevention to assure product origin and conformance to Precision Micro requirements and related engineering drawings.*
- *Additional purchasing requirements for distributors:*
  - *Products shall only be purchased from approved distributors, when full traceability can be demonstrated back to the original manufacturer.*
  - *Original manufacturer's certificate of conformance shall be made available.*

#### 8.4.2. Type and Extent of Control

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

*In addition to the above:*

##### **Verification of purchased product**

##### **Inspection – General**

*When sample inspection is undertaken as a means of component verification/inspection, this may only be undertaken when the requirements of section 8.5.1 (Control of Production and Service Provision) have been met and the sample plan has been authorised by the relevant Precision Micro site.*

##### **Inspection – Material/Special Process**

- *Suppliers shall provide raw materials test reports/certification results/laboratory analysis requirements (e.g., tensile strength, stress rupture, hardness, chemical composition, etc.), as defined by the product definition and/or the purchase order.*
- *Where the supplier utilises test reports to verify purchased product, the data in those reports shall be acceptable per applicable recognised specifications.*
- *The supplier shall periodically validate test reports for raw material. This shall be conducted by a source independent to that of the source testing of the material to assure the material is in conformance.*
- *Personnel responsible for the review of material and special process test reports shall be trained to interpret and evaluate test results for the purpose of ensuring that all drawing and/or specification requirements of the product are met.*

##### **Source Inspection**

- *Precision Micro retains the right to perform source inspection at the supplier's facility or at its sub-tier supplier's facility. Precision Micro may assign its quality representative to be located at the suppliers and sub-tier supplier's facility at any time during the life of the contract.*
- *Precision Micro source inspection does not supplement or replace the suppliers own inspection system.*

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- *The supplier shall give Precision Micro a minimum of seven (7) days" notice of the date of inspection where source Inspection is a requirement of the contract.*
- *When source inspection is required, the supplier and sub-tier supplier shall make available to the Precision Micro quality representative such area, facilities, equipment, inspection records, or*

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*other assistance requested in the course of verifying product conformance to requirements.*

- *In the event source inspection is invoked as a result of an identified supplier product issue or nonconformity, then the inspection and associated actions shall be at the suppliers cost.*

#### 8.4.3. Information for External Providers

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

*In addition to the above:*

##### **Purchasing Information**

- *The supplier shall ensure that the purchasing information/documentation communicates (flows down) the supplier requirements and Precision Micro's requirements to all subcontractors/sub-tier suppliers.*
- *Where Precision Micro owns the design of a product being purchased from a supplier who further subcontracts all or portions of that work, the suppliers purchase order shall state that the products are for Precision Micro "end use" and shall be controlled as per the applicable purchase order requirements, including any trade control requirements.*

## 8.5. **PRODUCTION AND SERVICE PROVISION**

### 8.5.1. Control of Production and Service Provision

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

*In addition to the above:*

*Precision Micro shall approve proposed amendments to Critical Part instructions.*

*Amendments to work instructions are to be completed by authorised personnel only. The following shall be required:*

- *An amendment shall be made by a single line through the original text using permanent ink.*
- *A stamp, signature (or electronic equivalent) and date shall be placed adjacent to an amendment.*
- *Correction fluid shall not be used.*

##### **Inspection**

- *All product characteristics shall be 100% inspected at appropriate stages of the process.*
- *Inspection plans shall be utilised as requested by Precision Micro.*
- *Inspection plans shall be in a format that is approved and agreed by Precision Micro.*
- *Typically these shall be requested on complex machined parts, castings and any other parts, as deemed necessary by Precision Micro.*
- *Reduced and sampling inspection can only be introduced if the requirements of the sub sections below ("Reduced Inspection" or "Sample Inspection") are met, and approval is given by Precision Micro.*

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- ***Personnel performing product verification/inspection activities shall be appropriately trained and competent.***

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- **Personnel involved in final inspection shall be independent of the manufacturing process.**

#### **Reduced Inspection**

**The supplier may only apply reduced inspection of variables and formed characteristics when:**

- **Process stability and capability can be demonstrated during product verification activities.**
- **Control methods such as control of process settings, tooling, standard processes and/or mistake proofing have been introduced.**
- **The proposed sample size, verification method of the product characteristic and/or formed characteristic has been documented in a control plan.**
- **The control plan has been submitted to, and approved by the applicable Precision Micro quality representative.**
- **Reduced inspection is not permitted on any FAI product, key characteristics or acceptance testing.**

#### **Sample Inspection**

- **The supplier may only introduce sample inspection as means of product acceptance when:**
  - **Process stability and capability can be demonstrated during product verification activities.**
  - **The proposed sample size and verification method of each product characteristic has been documented in a control plan.**
  - **The control plan/sample plan use has been submitted to, and approved by the Precision Micro quality authority.**
- **Sample inspection is not permitted on any FAI product, key characteristics or acceptance testing.**
- **Results shall be recorded when identified on the product drawing, for all key characteristics and whenever a Coordinate Measuring Machine (CMM) is the method of inspection. Results shall be made available to Precision Micro.**

#### **Variation Management**

**The requirements of AS/EN/JISQ9103 apply.**

- **The supplier shall have a process to determine product and process Key Characteristics (KCs).**
- **Key characteristics shall be clearly identified on drawings and production documentation as applicable.**
- **This includes KCs designated by Precision Micro.**
- **The supplier shall establish process capability for the designated KCs using representative data gathered in time sequence from three or more concurrent batches/lots containing a combined total of at least twenty-five (25) products.**
- **The supplier shall ensure that a process using variable data can demonstrate process capability of Cpk (Process Capability Index)  $\geq 1.33$  or as specified by Precision Micro.**
- **Records of measurements shall be retained and provided to Precision Micro as requested.**

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### **Operator Certification**

- ***Where the supplier has an operator certification program, this shall be documented, and where requested this shall be made available to Precision Micro for approval.***

### **Stamp Control**

- ***The supplier shall maintain a procedure for effective control and administration of inspection stamps. Inspection stamps means all stamps authorised within the Supplier quality system, including electronic acceptance media.***
- ***The procedure shall provide that stamps lost or withdrawn from use shall be quarantined for a defined period of time of not less than six (6) months.***
- ***If signatures are used instead of stamps, a record of the authorised signatures with the person's position shall be part of the documented procedure.***
- ***Where applicable, this procedure shall also provide for security controls for electronic signatures (i.e. passwords, etc.).***

#### 8.5.1.1. Control of Equipment, Tools, and Software Programs

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### ***In addition to the above:***

- ***The supplier shall have a system for the management of pre-production and production tooling, jigs and fixtures including identification, protection, storage, tool life and modification.***
- ***The supplier shall identify key process equipment and provide resources for machine/equipment maintenance to develop an effective planned total preventative maintenance system. This shall, at a minimum:***
  - ***Utilise predictive maintenance methods to continually improve the effectiveness and efficiency of production equipment.***
  - ***Have a measurement system in place for downtime, planned versus unplanned, etc.***
  - ***Ensure that preventive maintenance schedules are current, and reflect all machines/equipment.***

#### 8.5.1.2. Validation and Control of Special Processes

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

##### ***In addition to the above:***

- ***Supplier shall validate any processes for production and service provision where the resulting output cannot be verified by subsequent monitoring or measurement and, as a consequence, deficiencies become apparent only after the product is in use or the service has been delivered.***

***NOTE: These processes are often referred to as special processes.***

- ***Suppliers and sub-tiers shall ensure that the following special processes are carried out***

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*internally or externally under the scope of NADCAP accreditation and are carried out by NADCAP accredited processors unless otherwise agreed by Precision Micro.*

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- **Brazing**
- **Cable and Harness**
- **Chemical processing (Inc. anodising, plating, painting, passivation etc.)**
- **Coating**
- **Composites**
- **Heat treating**
- **Material testing laboratory**
- **Nonconventional Machining**
- **Non-destructive testing**
- **Printed circuit assemblies**
- **Printed circuit boards**
- **Shot peening**
- **Welding**

**NOTE: Special process audits shall be scheduled through the suppliers audit plan.**

#### 8.5.1.3. Production Process Verification

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- **The supplier shall plan, conduct and record FAI (First Article Inspection) in accordance with AS/EN/JISQ 9102 or any other applicable standard according to sector or industry.**
- **A partial or re-accomplishment of a FAI shall be conducted per the requirements of AS/EN/JISQ 9102, or where requested by Precision Micro.**
- **A replication of product part marking (via photograph or sample) that represents production marking shall be included within the FAI Report or equivalent.**
- **The supplier is responsible for ensuring completion of the FAI report or equivalent for all finished part characteristics generated by sub-tier suppliers.**
- **Where a Precision Micro contract refers to PPAP (Production Part Approval Process) then the requirements of AS/EN/JISQ 9145 shall apply.**
- **The supplier shall prepare a manufacturing process flow diagram for the product. The complete flow diagram shall include steps from material receipt to preparation of dispatch documentation. (A separate process flow diagram is required for each out-located process). The manufacturing process flow diagram shall show:**
  - **Inspection points**
  - **Process machinery, tooling, assembly stations, test benches, stores for sub-assemblies, rework area(s). Plant numbers or machine ID shall be included for all prime equipment**
  - **First pass yield data collection points**
  - **Identification of potential bottlenecks**
  - **Identification of operator skills sets**

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- **Capacity plans for any equipment(s) not dedicated to the production of Precision Micro product**

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- **The process flow steps shall be designated in such a way that they can be cross referenced to the PFMEA.**

**Process Failure Mode Effect Analysis (PFMEA)**

- **The supplier shall use a cross functional team to conduct process PFMEA in advance of producing product.**
- **The supplier shall demonstrate appropriate action has been taken to eliminate or reduce the chance of a failure mode occurring.**
- **The supplier shall ensure that the PFMEA process for production is updated regularly and considers:**
  - **New component or part**
  - **New, changed or improved process/sub-process**
  - **New, changed or improved subcontracting activity**
  - **Precision Micro requirements**
  - **Manufacturing yield data and failure mode occurrence changes**
  - **New failure mode**
- **All PFMEA activity shall have a feedback to the DFMEA as required.**
- **The supplier shall demonstrate that high risk failure modes determined from the PFMEA are addressed in the control plan. Where appropriate risk mitigation cannot be provided, this shall be communicated to Precision Micro in a timely manner.**

**8.5.2. Identification and Traceability**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- **All products are to be identified and traceable in accordance per drawing/design documentation or as agreed with Precision Micro.**
- **The traceability system employed shall reduce the probability of the need to conduct a full product recall in the event of product noncompliance.**
- **Traceability shall be maintained for all product throughout production (including product quantities, split orders, nonconforming product etc.) from raw material to finished product.**
- **The supplier shall manage and record the serial numbers or batch numbers of the products, if numbers are provided by Precision Micro or a Precision Micro customer the supplier shall use these instead of their own serial or batch numbers.**
- **The supplier shall ensure that it implements a methodology for preventing the generation of duplicate numbers.**
- **Traceable items that, for reason of size and/or application do not allow the part number and serial number identification, shall be individually packaged and identified by an appropriate label.**

**NOTE: The supplier shall implement a process, or policy, for the control of “Split Batches”.**

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**8.5.3. Property Belonging to Customers or External Providers**

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The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.

**In addition to the above:**

- **The supplier shall ensure that Precision Micro owned/issued tooling, jigs and fixtures are adequately registered and maintained with the period status given on request.**
- **The jigs and fixtures shall be identified and controlled at all times.**
- **The supplier shall return all documents, records, gauging, stamps, tooling or any other Precision Micro supplied equipment (such as materials or product) upon written notification from Precision Micro or when business with Precision Micro has ceased.**

#### 8.5.4. Preservation

The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.

**In addition to the above:**

- **The supplier shall establish a process to detect and prevent Foreign Object Debris - Damage (FOD) or any type of contamination. The process shall contain the following elements as a minimum:**
  - **Production FOD process review**
  - **Training of applicable personnel in FOD prevention**
  - **Material handling and product protection**
  - **Tool/hardware accountability**
  - **Lost items search and documentation process**
  - **Physical entry control into FOD critical areas**
  - **Inspection for foreign objects**
- **Exposed pipe ends, electrical connectors, coaxial cable and exposed openings are to be sealed externally, where possible, to prevent contamination.**
- **Products that are (or contain) Electrostatic Sensitive Devices (ESD) shall be clearly marked accordingly and packaged in accordance with national and international specifications.**
  - **ESD products shall only be removed from protective packaging in an ESD protected area. This includes goods receiving and final inspection.**
- **Limited life materials are to be identified and controlled so that „out-of-life“ materials are not used.**
  - **Material with a limited life shall be delivered to Precision Micro with a minimum of 75% of its life remaining, or as formally instructed by Precision Micro.**
- **The supplier shall document details of the packing procedures, illustrations of internal packaging/product support and specify the materials to be used. The preparation of these procedures shall ensure appropriate packaging for sensitive product and no inclusion of prohibited packing materials.**

#### 8.5.5. Post-Delivery Activities

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The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply

#### 8.5.6. Control of Changes

The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.

##### **Operator Certification**

**Where the supplier has an operator certification program, this shall be documented, and where requested this shall be made available to Precision Micro for approval.**

##### **Stamp Control**

**The supplier shall maintain a procedure for effective control and administration of inspection stamps. Inspection stamps are all stamps which have been authorised within the Supplier quality system, including electronic acceptance media.**

- **The procedure shall provide that stamps lost or withdrawn from use shall be quarantined for a defined period of time of not less than six (6) months.**
- **If signatures are used instead of stamps, a record of the authorised signatures with the person's position shall be part of the documented procedure.**
- **Where applicable, this procedure shall also provide for security controls for electronic signatures (i.e. passwords, etc.).**

##### **Document Change Requirements**

- **An amendment shall be made by a single line through the original text using permanent ink.**
- **A stamp, signature (or electronic equivalent) and date shall be placed adjacent to an amendment.**
- **Correction fluid shall not be used.**

#### 8.6. RELEASE OF PRODUCTS AND SERVICES

The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.

**In addition to the above:**

##### **Release Inspection**

- **The supplier shall have a process to ensure release documentation meets Precision Micro requirements. This shall include:**
  - **Training of all personnel involved in the release of product.**
  - **Providing two (2) copies of release documentation. One (1) inside and one (1) outside the packaging.**
  - **The supplier shall provide a certificate of conformance (C of C) with the following annotated statement:**

**„THESE PRODUCTS HAVE BEEN MANUFACTURED, INSPECTED, TESTED AND UNLESS OTHERWISE STATED ABOVE CONFORM IN ALL RESPECTS WITH THE PURCHASE ORDER REQUIREMENTS.“**

- **The C of C shall contain the following information as a minimum:**
  - **Unique traceable document reference number.**
  - **Supplier name, address and telephone number.**
  - **Delivery address.**
  - **Country of origin for the parts being supplied.**
  - **Precision Micro purchase order number (including purchase order item number).**
  - **Description of the product (per purchase order number).**
  - **Part number, including drawing revision status (per purchase order number).**
  - **Quantity.**
  - **Date of despatch/shipping date.**
  - **Conformance/compliance statement per above.**
  - **Signature of person authorised to release the product to the customer (an Electronic signature shall be accepted).**
- **Additional information, as applicable, shall include:**
  - **FAI or equivalent Report reference.**
  - **Concession/Production permit reference.**
  - **Traceable reference (serial, batch, lot, heat, cast numbers - as applicable).**
  - **ATP reference.**
  - **Raw material certificate reference.**
  - **Hazardous substances/safety data sheet reference.**
  - **Shelf life information.**
  - **Customers specific requirements.**
- **The responsible designated supplier representative shall countersign and date the C of C (Quality stamp and initials are also acceptable). Electronic signature is acceptable providing the supplier has documented procedures.**

## 8.7. CONTROL OF NONCONFORMING OUTPUTS

- 8.7.1. The organization shall ensure that outputs that do not conform to their requirements are identified and controlled to prevent their unintended use or delivery.

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

**Containment**

- ***The supplier shall establish a method of detecting product and process nonconformance, at a minimum, this shall include:***

- **Containing nonconformities by segregating the product or process to prevent its unintended use or delivery.**
- **Taking necessary actions to contain the effect of the nonconformity on other processes or products at supplier or sub-tiers.**
- **Nonconforming parts, with their associated documentation and identification (e.g. Red label or tag), are to be segregated until an approved. Written disposition is to be given by the relevant engineering authority.**
- **If a decision is made to scrap parts, prior to final disposal, proprietary parts shall be defaced in such a way that it precludes any possibility of reuse or rework. Any special considerations on nonconforming product imposed by Precision Micro or by their customer shall be adhered to.**
- **The supplier shall notify Precision Micro immediately (with 24 hours or the next business day), in writing, when a nonconformity is discovered in the suppliers manufacturing processes or components/assemblies for a product already delivered. This notification shall include as a minimum:**
  - **A clear description of the nonconformity**
  - **Affected part number, serial number, batch number, heat lot, manufacturing date etc.**
  - **Delivered quantity**
  - **Purchase order**
  - **Containment plan including corrective action(s)**
  - **Deviations (concession/production permit)**
  - **If information is not yet determined, notify immediately with detail to follow**
- **The supplier shall have a process for the control of concessions and production permits (deviations). This shall include training of personnel in the role and responsibility they play in the process of control of concessions and permits.**
  - **Concession - is a temporary/conditional permission granted to use or release a limited quantity of material, detail parts or assemblies already manufactured which do not strictly comply with the approved drawings and/or specifications.**
  - **Production permit - is a temporary/conditional permission granted, in advance of manufacture, to use materials or to make detail parts or assemblies which differ from the approved drawings and/or specifications.**
- **Only when a supplier is responsible for the design, and the nonconformance is classed as minor, can the supplier disposition products using their own nonconformance system. Requirements shall include:**
  - **Major concessions (affecting form, fit, function, airworthiness, safety, strength, life, interchangeability, maintenance, reliability and/or appearance that may cause the user concern over its serviceability). When a major concession has been raised and submitted to Precision Micro, using a Precision Micro format (unless otherwise agreed), then corrective action must be implemented and the nonconformity closed prior to delivery of any parts.**
  - **Minor concessions are not required to be submitted to Precision Micro but shall be retained and made available to Precision Micro. Nonconformities must be closed prior to delivery of any parts.**
- **Unless otherwise formally agreed, no nonconforming product, under cover of concession, shall be delivered until the concession has been formally accepted by Precision Micro.**

### **Precision Micro Returned Product**

- **The supplier shall have a process for the control of customer (Precision Micro) returned product identified as nonconforming product.**
- **Suppliers shall be notified of identified product nonconformity by a Supplier Corrective Action Report (SCAR) or equivalent.**
- **If the supplier does not agree with the Precision Micro nonconformity report issuance, the supplier shall inform Precision Micro within two (2) working days after receiving the notification. Otherwise, the supplier is deemed to have accepted the responsibility for the nonconformity report.**
- **The supplier shall respond to the nonconformity.**
- **This process shall include returned items dispositioned as Fault Not Found (FNF); in particular those which have been returned on more than one occasion.**

**NOTE: Precision Micro shall not accept redelivery of any product which fails at a Precision Micro facility and has been returned to the Supplier on more than one occasion for the same nonconformity.**

8.7.2. The organization shall retain documented information that:

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

## **9. PERFORMANCE EVALUATION**

### **9.1. Monitoring, Measurement, Analysis, and Evaluation**

#### **9.1.1. General**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

**The supplier shall implement standard quality management methods for product and process improvements such as 5 Why, Ishikawa (Fishbone diagram), 8D or 7-step, 6S, and PFMEA, and ensure personnel are suitably trained in their use.**

#### **9.1.2. Customer Satisfaction**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

**Unless specifically agreed with Precision Micro the supplier shall:**

- **Monitor quality and delivery performance using key performance indicators.**
- **Ensure 100% quality performance Parts per Million (PPM) and 100% on-time and in-full (OTIF) delivery performance or as agreed within the Precision Micro scorecard.**

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- ***Take appropriate corrective actions when quality or delivery performance is not being achieved.***
- ***Immediately notify their Precision Micro purchasing contact when delivery schedules are not being achieved and submit a recovery plan.***

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- **Monitor the implementation of improvement plans and evaluate the effectiveness of the results.**
- **Prepare for and participate in performance reviews conducted periodically by Precision Micro.**

### 9.1.3. Analysis and Evaluation

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

## 9.2. INTERNAL AUDIT

### 9.2.1. The organization shall conduct internal audits at planned intervals to provide information on whether the quality management system;

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

***The supplier shall establish a system to appropriately manage an internal audit programme that includes product and process audits, to verify compliance on products and processes related to Precision Micro delivered products.***

### 9.2.2. The organization shall:

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***The audit programme shall be prioritised based on product and process risk.***
- ***The programme shall ensure all Precision Micro products are audited at identified intervals and at appropriate stages of production using a sample product that has been selected at random from the current production process.***
- ***Auditors shall be independent of the function being audited, and shall be suitably trained and experienced.***

### 9.3. Management Review

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

***In addition to the above:***

- ***When required by Precision Micro, the supplier shall provide the appropriate quality data (charts, indicators, acceptance rate, shop findings, etc.) that demonstrates the suppliers internal quality performance and the corrective actions taken in order to prevent impacts at Precision Micro.***

## 10. IMPROVEMENT

### 10.1. General

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**10.2. Nonconformity and Corrective Action**

**10.2.1.** When nonconformity occurs, including any arising from complaints, the organization shall:

*The requirements of AS/EN/JISQ9100:2016 section 10.2.1 shall apply for aerospace products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- **The supplier shall use error proofing methods in their corrective action process where appropriate.**
- **The supplier shall establish a customer protection plan to ensure continuity of supply while nonconformances are being investigated.**
- **Personnel involved in the identification, review and closure process shall be suitably trained in the applicable quality methods.**
- **The supplier shall review/update and be able to demonstrate the Process Failure Mode Effects and Analysis (PFMEA) and the control plan when corrective action has been identified.**
- **Nonconformities identified by Precision Micro may include product, process and audit nonconformity.**
- **The supplier shall ensure that Precision Micro requested corrective actions are responded to in the required time frame. Unless agreed by the Precision Micro Quality department, or Precision Micro auditor, the following timescales shall apply in all cases.**

<b>Nonconformity Type</b>	<b>Containment</b>	<b>Root Cause / Corrective Action Plan</b>	<b>Nonconformity Closure</b>
<b>Product Related Failure</b>	<b>≤2 calendar days (48 hours)*</b>	<b>≤21 calendar days*</b>	<b>≤30 calendar days*</b>
<b>Audit Finding</b>	<b>n/a</b>		

**\* Where number of days is counted from the issuance of a Nonconformity Report (NCR)**

- **Where requested, the supplier shall document all actions to rectify the nonconformity including utilising 8D or industry standards (such as AS13000: Problem Solving Requirements for Suppliers).**
- **Where a supplier quality performance is not meeting required targets, Precision Micro shall initiate interaction with the Supplier to identify required corrective actions and improvements. This may include request for a formal action plan and/or an onsite assessment.**

**10.2.2.** The organization shall retain documented information as evidence of:

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**10.3. Continual Improvement**

*The requirements of AS/EN/JISQ9100:2016 apply for ASD products and for other industries ISO9001:2015 shall apply.*

**In addition to the above:**

- ***The supplier shall maintain an active lessons learned improvement process and utilise a database of products, known capabilities, identified nonconformity and lessons learned for the purpose of continuous improvement.***

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