INTRODUCTION

This specification defines supplier quality requirements as agreed upon by the following business entities herein referred to as “Member”.

<table>
<thead>
<tr>
<th>Member</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pratt &amp; Whitney</td>
<td>PW</td>
</tr>
<tr>
<td>Pratt &amp; Whitney Canada</td>
<td>P&amp;WC</td>
</tr>
<tr>
<td>Sikorsky Aircraft</td>
<td>SIK</td>
</tr>
<tr>
<td>UTC Aerospace Systems</td>
<td>UTAS</td>
</tr>
</tbody>
</table>

This specification applies to OEM aerospace suppliers and their subcontractors who furnish product, material, processes, or services (as a manufacturer or maintenance provider) to any of the above Members as a contract requirement regardless of supplier’s industry, regulatory accreditation, or certification status.

Members reserve the right to flow down additional requirements to satisfy specific customer and / or business requirements that will apply only to the Member.

Each Member has the individual right to disapprove a supplier’s Quality System as well as the Quality System of their subcontractors.

This document employs, as a foundation, SAE Aerospace Standard (AS) 9100 - Quality Management Systems - Requirements for Aviation, Space and Defense Organizations and is supplemented by Member requirements as defined herein. In an effort to standardize the use and application of the common quality system requirements, the SAE AS 9100 paragraph numbering scheme has been used.

Each Member, its representatives, its customers and its customers’ governmental agencies and regulatory agencies shall have the right of entry into a supplier’s facility or that of their subcontractors. Entry shall provide for access to quality system documentation, quality records as well as the ability to conduct audits, verify product and processes.
REVISION SUMMARY

This document has been revised. Major changes include:

- Introduction: Updated Business Entity listing and clarified right of entry requirement.
- Para. 1.2.1: Revised to clarify certification.
- Paragraph 1.2.2: Added to clarify supplier responsibility for compliance.
- Paragraph 1.2.3: Revised to clarify requirement for distributors.
- Paragraph 1.3: Changed reference AS9104 to AS9104/1.
- Paragraph 2.1: Revised to require supplier to review for the latest revisions every 60 days and to implement changes within 60 days unless extensions or alternatives are approved. Reviews shall be documented.
- Paragraph 2.2: Revised to clarify supplier to comply with the version of product definition specifications referenced in PO requirements.
- Paragraph 2.3: Deleted and subsequent paragraph renumbered.
- Paragraph 2.3 (former 2.4): Specification list updated to reflect current requirements.
- Paragraph 4.2.4: Revised to clarify requirements for control of records and add items to list of examples of quality records.
- Paragraph 6.2.2 (a): Revised visual inspection requirement.
- Paragraph 7.1.4: Revised to add requirements for Work Transfers.
- Paragraph 7.2.2: Revised to add requirements for contract review.
- Paragraph 7.2.3 (a): Revised to clarify requirements for changes that affect quality.
- Paragraph 7.2.3 (b): Revised to add reference to Member on-line system.
- Paragraph 7.2.3 (c): Revised to add requirement for specific documents to be in English and deleted requirement for supplier to provide e-mail address.
- Paragraph 7.4.1: Revised to add Note to reference IAQG SMCH.
- Paragraph 7.4.1 (d): Revised to clarify use of approved sources and delete Note.
- Paragraph 7.4.3 (2): Revised to clarify requirement for validation and frequency of testing.
- Paragraph 7.4.3 (4): Added to provide requirements for counterfeit parts.
- Paragraph 7.5.1 (a1): Revised to clarify Flight Safety Part requirements.
- Paragraph 7.5.1 (a3): Added to provide requirement for deliverable software.
- Paragraph 7.5.1.1 (1): Clarified requirements regarding FAI.
- Paragraph 7.5.1.1 (2): Added Note.
- Paragraph 7.5.1.1 (3): Added to provide requirement for use of Member’s on-line system.
- Paragraph 7.5.2 (a): Revised to clarify requirements for Member approved suppliers of special processes and add reference to International Laboratory Accreditation Cooperation (ILAC). Deleted Note regarding NADCAP accreditation.
- Paragraph 8.2.2: Revised to clarify requirement for internal audit.
- Paragraph 8.2.4 (3): Revised to add requirement for supplier to have a process for selection of measuring and test equipment.
• Paragraph 8.3 (c): Revised to add “physically” to clarify rendered unusable requirement.
• Paragraph 8.5.2: Revised to add requirement for use of RCCA Checklist (new UTCQR Form 11) and AS13000 requirement.
• Paragraph 8.5.2 (f): Revised to add requirement for use of Temporary Key Characteristic.
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QUALITY MANAGEMENT SYSTEMS - REQUIREMENTS

1 SCOPE

1.1 General: No Additional Requirements

1.2 Application
Suppliers and all members of their supply chain that provide Member product shall be compliant to all applicable Quality Management System and ASQR-01 requirements.

1.2.1 Suppliers who receive a purchase order (PO) from a Member shall be certified by an accredited Certification Body (CB) to AS/EN/JISQ 9100.

1.2.2 Suppliers shall ensure that all members of their supply chain are compliant to the requirements of AS/EN/JISQ 9100.

1.2.3 Distributors or organizations carrying out the purchase, storage, splitting and sale of products and not transforming, assembling, or otherwise modifying purchased product shall be certified by an accredited CB to AS/EN/JISQ 9100 or AS/EN/JISQ 9120.

1.2.4 Suppliers and all members of their supply chain that only provide special processes (not part manufacturing suppliers) that receive a PO from a Member shall be certified to Nadcap AC7004 or AS/EN/JISQ 9100.

1.3 Supplier Certificate(s) of Registration to applicable Aerospace Quality Management System (AQMS) assessments shall be issued by a CB.

The CB shall be accredited under the control of the International Aerospace Quality Group (IAQG) certification/registration schemes, as recognized by SAE AS/EN/JAC9104/1. Reference the IAQG website for a listing of accredited CBs.

Note: Suppliers will need to register on the IAQG website and receive a password in order to view the list of accredited CBs.

1.4 Other Party Certificate(s) of Registration or Nadcap Accreditation Certificates/documentation shall be submitted to each Member that issued a PO if information has not been entered into the Online Aerospace Supplier Information Center (OASIS) or Nadcap databases.

1.5 Suppliers shall permit Members access to all data in OASIS and Nadcap databases including registration documentation, certification, audit reports, findings, corrective actions, etc. Members reserve the right to input significant and/or frequent escape data and major audit findings regarding suppliers into the relevant OASIS data base records for those Suppliers.

1.6 The supplier is responsible to provide each Member with notification of any changes in the certification / registration / accreditation or major audit findings within (2) business days of receiving notification of the change or finding. Examples of changes in registration include new certification, suspension, or expiration.
1.7 Suppliers not certified by an accredited CB are subject to removal from any Qualified Supplier List. If the Member elects to continue a business relationship with the supplier, the supplier is subject to QMS and / or Special Process audits by Members. Suppliers may be required to reimburse the Member for the cost of conducting these audits until certification is achieved.

2 NORMATIVE REFERENCES

2.1 The supplier shall comply with the latest revision of the ASQR and UTCQR documents, regardless of the revision level stated on the applicable Member's PO or scheduling agreement. The supplier shall review the applicable Member's Supplier Portal for the latest revisions every 60 days and these reviews shall be documented. All changes must be implemented within 60 days of notification from the applicable Member or upon review of Portal specifications unless otherwise specified by the applicable Member. Implementation extensions or alternatives shall be requested and approved using Supplier Request for Information (SRI) ASQR-01 Form 3.

2.2 Copies of Member-specific specifications can be requested from the applicable Member. It is the responsibility of the supplier to ensure they are complying with the version of product definition specifications referenced in PO requirements.
2.3 It is the responsibility of the supplier to obtain copies of non-Member documents specified by this ASQR. These documents include, but may not be limited to, the following:

<table>
<thead>
<tr>
<th>Document</th>
<th>Available From</th>
</tr>
</thead>
</table>
| ISO STANDARDS             | Canadian Source
|                           | Standards Council of Canada
|                           | 270 Albert Street, Suite 200, Ottawa ON K1P 6N7, Canada                     |
|                           | United States Source
|                           | American National Standards Institute
|                           | 25 West 43rd Street
|                           | New York, New York 10036                                                     |
|                           | European Source
|                           | International Organization for Standardization
|                           | Case Oistake 56 CH-1211 Geneve 20 Switzerland                                |
|                           | Asian Source
|                           | The Society of Japanese Aerospace Companies (SJAC)
|                           | Toshin Tameike Bldg.2nd Floor, 1-1-14
|                           | Akasaka, Minato-ku, Tokyo 107-0052 Japan                                    |
| SAE SPECIFICATIONS       | Society of Automotive Engineers
|                           | 400 Commonwealth Drive
|                           | Warrendale, PA 15096-0001                                                    |
| ANSI SPECIFICATIONS       | American Society for Quality
|                           | 611 East Wisconsin Avenue
|                           | Milwaukee, WI 53201-3005                                                     |
| AWS SPECIFICATIONS        | American Welding Society
|                           | 8669 NW 36 Street, # 130
|                           | Miami, Florida 33166-6672                                                    |
| AEROSPACE INDUSTRIES      | Aerospace Industries Association of America, Inc.
| ASSOCIATION               | 1000 Wilson Boulevard, Suite 1700
| NAS STANDARDS             | Arlington, VA 22209-3928                                                    |
### REQUIREMENTS REFERENCED IN THIS DOCUMENT

<table>
<thead>
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<th>Document</th>
<th>Title</th>
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<tr>
<td>AIA/NAS 410</td>
<td>National Aerospace Non-Destructive Test Project Group</td>
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<td>ANSI/NCSL Z540.3</td>
<td>Requirements for the Calibration of Measuring and Test Equipment</td>
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<td>ASQR-07.5</td>
<td>Control of Software</td>
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<td>ASQR-09.1</td>
<td>Flight Safety Parts Program</td>
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<tr>
<td>ASQR-09.2</td>
<td>UTC Production Part Approval Process (UPPAP)</td>
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<td>ASQR-15.1</td>
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<td>AWS D17.1</td>
<td>Specification for Fusion Welding for Aerospace Applications</td>
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<td>IAQG SCMH</td>
<td>IAQG Supply Chain Management Handbook</td>
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<tr>
<td>ISO 10012</td>
<td>Quality Assurance Requirements for Measuring Equipment</td>
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<tr>
<td>ISO 17025</td>
<td>General Requirements for the Competence of Testing and Calibration Laboratories</td>
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<tr>
<td>PRI AC 7004</td>
<td>Nadcap Audit Criteria For Inspection and Test Quality System</td>
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<tr>
<td>SAE AS 5553</td>
<td>Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition</td>
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<td>SAE AS 6174</td>
<td>Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel</td>
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<td>SAE AS 9100</td>
<td>Quality Management Systems - Requirements for Aviation, Space and Defense Organizations</td>
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<tr>
<td>SAE AS 9102</td>
<td>Aerospace First Article Inspection Requirement</td>
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<tr>
<td>SAE AS 9104/1</td>
<td>Requirements for Aviation, Space, and Defense Quality Management System Certification Programs</td>
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<tr>
<td>SAE AS 9120</td>
<td>Quality Management Systems Requirements for Aviation, Space, and Defense Distributors</td>
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<tr>
<td>SAE AS 13000</td>
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<tr>
<td>UTCQR-09.1</td>
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### FORMS REFERENCED IN THIS DOCUMENT

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<td>ASQR-01 Form 1</td>
<td>ASQR-01 Checklist</td>
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<td>Root Cause Corrective Action Checklist</td>
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3 TERMS AND DEFINITIONS
No Additional Requirements

4 QUALITY MANAGEMENT SYSTEM
4.1 General Requirements: No Additional Requirements
4.2 Documentation Requirements:
4.2.1 General: No Additional Requirements
4.2.2 Quality Manual: No Additional Requirements
4.2.3 Control of Documents:
   a) No Additional Requirements
   b) Corrections to work instructions or documents shall be recorded, dated and traceable to the person making the change (e.g., signature, stamp, etc.) in ink or other permanent marking method with the original data being legible and retrievable after the change.
   c-d) No Additional Requirements
   e) All quality records (non–electronic) shall be documented in ink or other permanent marking.
   f-g) No Additional Requirements
4.2.4 Control of Records:
   1) Electronic imaging/microfilming of records in lieu of storing actual inspection records is permissible. All records shall be retained, retrievable and readable on storage media capable of maintaining the data integrity for the full retention period.

Examples of Quality Records to be retained include, but are not limited to:
• Deliverable and non-deliverable software verification & validation
• First article inspection reports
• In process / final inspection & test records
• Training and certification records
• Manufacturing / fabrication records (e.g. planning sheets, routers, etc.)
• Nonconforming material disposition
• Procurement documents (supplier placed orders)
• Process control records (used as acceptance criteria)
• Radiographs, technique sheets and related acceptance reports
• Receiving inspection records (e.g. test reports, material certifications, etc.)
• Records as defined by Members
2) Retain Quality Management System (QMS) records as identified per AS9100. The following identified quality records shall be maintained for the minimum retention periods specified below:

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Description</th>
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<tbody>
<tr>
<td>40 years from time of manufacture</td>
<td>Flight safety, critical / major rotor parts (i.e. turbine and compressor disks, hubs, shafts, free turbine couplings and turbine disk side plates), serialized major engine (cast / fabricated) cases (i.e. inlet, fan, compressor, intermediate, diffuser, combustion, turbine and exhaust cases) and main shaft bearing supports, which are not integral to a major case.</td>
</tr>
<tr>
<td>30 years</td>
<td>Manned Space Program Hardware</td>
</tr>
<tr>
<td>10 years</td>
<td>All other parts except off-the-shelf industry standard parts.</td>
</tr>
<tr>
<td>5 years</td>
<td>Off-the-shelf / industry standard parts (e.g. AN, AS, MS, JAN, etc.)</td>
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</table>

3) Radiographs: The supplier shall retain radiographs.

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>40 years</td>
<td>Flight safety, Critical / major rotor parts (i.e. turbine and compressor disks, hubs, shafts, free turbine couplings and turbine disk side plates), Serialized major engine (cast / fabricated) cases, (i.e. inlet fan, compressor, intermediate, diffuser, combustion, turbine and exhaust cases), and main shaft bearing supports which are not integral to a major case and engine components traceable by Engineering Drawing / Quality Assurance Data required serial numbers.</td>
</tr>
<tr>
<td>10 years</td>
<td>Castings or parts where the purchase order, engineering drawing or specifications require serial number traceability.</td>
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<tr>
<td></td>
<td>Castings or parts where the purchase order, engineering drawing or specifications do not require serial number traceability, shall be retained only if no other inspection record is retained that documents completion and final acceptance of radiographic inspection.</td>
</tr>
<tr>
<td>5 years</td>
<td>Military hardware - turbine airfoil (blades) casting radiographs for initial casting quality.</td>
</tr>
<tr>
<td></td>
<td>Military hardware - Radiographs of airfoils for the presence of foreign material need not be retained provided an inspection record is retained that documents completion and final acceptance of radiographic inspection.</td>
</tr>
</tbody>
</table>
5 MANAGEMENT RESPONSIBILITY

5.1 Management Commitment: No Additional Requirements
5.2 Customer Focus: No Additional Requirements
5.3 Quality Policy: No Additional Requirements
5.4 Planning: No Additional Requirements
5.5 Responsibility, Authority and Communication: No Additional Requirements
5.6 Management Review: No Additional Requirements

6 RESOURCE MANAGEMENT

6.1 Provision of Resources: No Additional Requirements
6.2 Human Resources
   6.2.1 General: No Additional Requirements
   6.2.2 Competence, Training and Awareness:
      a) Unless otherwise specified, procedures shall be implemented to ensure that eye examinations, including visual acuity and color vision, as applicable, are administered by a medically qualified / trained person to all individuals performing visual inspection and/or other product acceptance activities that require visual acuity.
         • Intervals shall not exceed one year.
         • Individuals shall be tested in at least one eye, either corrected or uncorrected.
         • Color Perception testing is required one time only. Individuals shall be capable of adequately distinguishing and differentiating colors used in the method for which certification is required, the process being performed or inspection activity. Documentation shall be retained.
         • Records shall be retained for each individual.

<table>
<thead>
<tr>
<th>Individual performing …</th>
<th>Shall be compliant with …</th>
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<tbody>
<tr>
<td>Visual inspection</td>
<td>Near vision requirements of</td>
</tr>
<tr>
<td>(i.e. calibration, non-weld, in-process, layout, dimensional)</td>
<td>• Snellen 14/18, (20/30), or</td>
</tr>
<tr>
<td></td>
<td>• Jaeger 2</td>
</tr>
<tr>
<td>Visual Inspections on Welds</td>
<td>American Welding Society Standard (AWS) D17.1</td>
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<tr>
<td>Nondestructive Testing (NDT)</td>
<td>Aerospace Industries Association National Aerospace Standard (AIA/NAS) 410</td>
</tr>
</tbody>
</table>

**Note:** Vision tests may be substituted for the options listed above providing the equivalence is verified and documented by a licensed optometrist or ophthalmologist.

b-e) No Additional Requirements
6.3 Infrastructure: No Additional Requirements

6.4 Work Environment: No Additional Requirements

7 PRODUCT REALIZATION

7.1 Planning of Product Realization: No Additional Requirements

7.1.1 Project Management: No Additional Requirements

7.1.2 Risk Management: No Additional Requirements

7.1.3 Configuration Management: No Additional Requirements

7.1.4 Control of Work Transfers:
When required by Member, supplier shall notify Member via ASQR-01 Form 3 thirty (30) days or more prior to any planned change implementation. The supplier shall have documented procedures for implementing this requirement, ensuring it is applied in their supply base and that decisions to interrupt flow of material from any existing source shall not take place until approved by the Member.

**Note:** For guidelines on implementing a process for work transfers reference IAQG SCMH.

7.2 Customer–Related Processes:

7.2.1 Determination of Requirements Related to the Product:

a-d) No Additional Requirements

7.2.2 Review of Requirements Related to the Product:

**Note:** For guidelines on implementing a process for contract review reference IAQG SCMH.

The supplier shall have a documented Contract Review process that requires:
- Roles and responsibilities of cross-functional reviewers/stakeholders (e.g. Contracts/Legal, Engineering, Materials, Production, Quality, Sales, Procurement, Packaging, Shipping, etc.).
- Review and approval process.

a) Verbal agreements or instructions shall under no circumstances be construed as approval or authorization to proceed.

b-e) No Additional Requirements

7.2.3 Customer Communication:

a) Changes that may affect quality shall be documented and communicated to the applicable Member(s) Quality Assurance and/or Procurement Representative prior to implementation of the change. The following changes shall be documented on ASQR-01 Form 3 or Member on-line system and may require a full or partial FAI.

**EXAMPLE OF CHANGES**
- Ownership
- Company name change
- Management
• Manufacturing location (see para. 7.1.4)
• Process (see 7.5.1.1)
• Product (see 7.5.1.1)
• Inspection Techniques (see 7.5.1.1)

b) ASQR-01 Form 3 or Member on-line system shall be used as the formal communication process.

Supplier Requests for Information may be used for items such as:

• An anomaly noted in a drawing or specification that could result in a nonconformance.
• For clarification / interpretation of a drawing, specification or requirements not requiring formal approval.
• A request for an alternate method to a quality system requirement. Any alternate methods to a quality system requirement shall receive approval from the applicable Member prior to incorporation.

Note: SRIs are not used for processing product nonconformances.

Note: Parts subject to the requirements of ASQR-09.2 shall use ASQR-09.2 Form 2 in lieu of ASQR-01 Form 3 for change notification.

c) For communication with the Member, the supplier shall have the capability to communicate in English. The following documents shall be in English:

• QMS Manual
• First level QMS procedures
• Process documentation (including FAI documentation) as required by the Member

In cases where the supplier maintains copies in their native language as well as in English and there is a conflict, the English language document shall take precedence.

7.3 Design and Development: No Additional Requirements

7.4 Purchasing:

7.4.1 Purchasing Process:

Note: For assistance in managing sub-tiers, consider the guidelines provided in IAQG SCMH.

a-c) No Additional Requirements

d) When specified on the drawing or PO, suppliers shall use only sources approved by the specific Member for a specified material and/or to perform special processes.

e-f) No Additional Requirements
7.4.2 Purchasing Information:

a-f) No Additional Requirements

g) Where a Member owns the design of an article purchased from a supplier (first-tier) who further subcontracts all or portions of that work to other subcontractors (second-tier), the first-tier supplier’s PO shall state that the articles are for applicable Member’s “end use” and shall be controlled per applicable PO requirements.

h-j No Additional Requirements

7.4.3 Verification of Purchased Product:

1) Suppliers shall provide the Member with 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 PO.

2) Where the supplier utilizes test reports to verify purchased product, the data in those reports shall be acceptable per applicable specifications. The supplier shall periodically validate test reports for raw material. That validation shall be accomplished by the supplier or other independent party through periodic, scheduled tests of raw material samples. Schedules for frequency of tests will be established by the supplier based on historical performance of the raw material supplier. Test reports shall be checked 100% against the Member’s requirements and applicable specifications.

3) When Government oversight (e.g. Government Contract Quality Assurance (GCQA), Department of Energy, etc.) is invoked, the supplier shall notify the Government Representative servicing their facility or if none, the Government Inspection office nearest to their facility.

4) Suppliers shall prevent and mitigate the use of counterfeit parts. The requirements of SAE AS 5553 for electronic components and SAE AS 6174 for non-electronic product apply. Supplier must be compliant to the applicable Defense Federal Acquisition Regulation Supplement (DFARS) for government contracts (i.e., DFARS 252.246-7007).

7.5 Production and Service Provision:

7.5.1 Control of Production and Service Provision:

a) 1) When the supplier provides Flight Safety Parts to the Member, the supplier shall comply with the requirements of ASQR-09.1 unless otherwise specified by Member specific part definition.

Note: Some Member specific designations for Flight Safety Parts (FSP) include PW Prime Reliable Part, P&WC Critical Part, P&WC Critical Rotating Part, P&WC Engine Structural Integrity Program (ENSIP) Critical Part.

2) Process Certification: Suppliers shall comply with the requirements of UTCQR-09.1.

3) Deliverable Software: Suppliers shall comply with the requirements of ASQR-07.5.

b-e) No Additional Requirements
7.5.1.1 Production Process Verification:

1) A First Article Inspection (FAI) shall be accomplished for all Member product and performed in accordance with SAE AS 9102 and the additional requirements below:
   - A full or partial FAI shall be performed for affected characteristics unless otherwise specified by Member when any of the following occurs:
     - Change in design
     - Change in manufacturing source(s), process(es), inspection method(s), location(s) of manufacture, tooling or materials.
     - Change in numerical control program or translation to another media.
     - Natural or man-made event, which may adversely affect a manufacturing process.
     - Lapse in production for two years or as specified by the customer.
   - A replication of product part marking (via photograph or sample) that represents production marking shall be included within the FAI Report.
   - The supplier holding the Member PO is responsible for assuring completion of the FAI Report for all finished part characteristics generated by sub-tier suppliers.
   - At any time, a Member may request a complete FAI to be performed in lieu of a partial (delta) FAI.
   - Additional requirements for AS 9102 FAI Form 1:
     - Field 11, Supplier Code: Record Member assigned Supplier Code.
     - Field 12, P.O. Number: Record Member Purchase Order Number.
   - Additional requirements for AS 9102 FAI Form 3:
     - Field 14, for each characteristic: Record FAI Inspection Measuring Equipment used as a media of inspection. Record FAI inspector identification (e.g. signature, stamp, electronic authorization, etc.) used to signify the person that accomplished the inspection.

2) UTC Production Part Approval Process (UPPAP) - Suppliers shall implement the UTC Production Part Approval Process per the requirements contained in ASQR-09.2 when invoked by drawing related documents, purchase order, or any other contractual requirement.

3) When specified by the Member, the supplier shall utilize the Member’s on line system to capture production process verification data and analysis.

7.5.1.2 Control of Production Process Changes: No Additional Requirements

7.5.1.3 Control of Production Equipment, Tools and Software Programs:
Suppliers shall comply with the requirements of ASQR-07.5.

7.5.1.4 Post-Delivery Support: No Additional Requirements

7.5.2 Validation of Processes for Production and Service Provision:
a) Accreditation by either Nadcap or by signatories to the International Laboratory Accreditation Cooperation (ILAC) is required for materials testing laboratories. Suppliers and all members of their supply chain shall use Member approved suppliers when a specific material or manufacturing special process is identified by individual Member. Suppliers and all members of their supply chain that only provide special processes (not part manufacturing suppliers) shall be Nadcap accredited for the following special processes:

- Brazing
- Chemical Processing
- Coatings
- Heat Treating
- Materials Testing
- Non-Conventional Machining
- Nondestructive Testing
- Shot Peening
- Welding

Nadcap or ILAC requirements may be further defined by the Member.

b-e) No Additional Requirements

7.5.3 Identification and Traceability: No Additional Requirements

7.5.4 Customer Property:

Suppliers shall return all documents, records, gaging, stamps, or other customer supplied product upon written notification from Member or when business with the Member has ceased.

7.5.5 Preservation of Product:

Suppliers shall comply with the requirements of ASQR 15.1 for Foreign Object Damage/Debris Prevention, Handling, Storage, Packaging, Preservation and Delivery.

7.6 Control of Monitoring and Measuring Equipment:

Calibration Systems shall meet the applicable requirements of ISO 10012, ISO 17025 or ANSI/NCSL Z540.3.

If ANSI/NCSL Z540.3 is applicable, the Handbook shall be used as the interpretive guide.

a) In accordance with the industry standards and guidance referenced above, stated reliability goals, accuracy ratios and Significant–Out–Of–Tolerance condition criteria shall be established.

1) The Calibration interval analysis methodology used to maintain the reliability of Measuring and Test Equipment (M&TE) shall have a stated reliability goal to meet a minimum 95% reliability target for M&TE in–tolerance at the end of their interval schedule.

2) Significant–Out–Of–Tolerance conditions are defined as any M&TE out–of–tolerance condition exceeding 25% of the product tolerance. These conditions require documented review of impact on quality and notification to the Member if product received by the Member has been affected.

b-e) No Additional Requirements
8 MEASUREMENT, ANALYSIS and IMPROVEMENT

8.1 General: No Additional Requirements

8.2 Monitoring and Measurement:

8.2.1 Customer Satisfaction: No Additional Requirements

8.2.2 Internal Audit:

Audits of ASQR-01 and Member unique requirements shall be conducted annually. Suppliers shall complete ASQR-01 Form 1 with the appropriate documents and paragraphs identified and made available for Member review.

a-b) No Additional Requirements

8.2.3 Monitoring and Measurement of Processes: No Additional Requirements

8.2.4 Monitoring and Measurement of Product:

a-d) No Additional Requirements

1) Statistical Techniques: Suppliers shall comply with the requirements of ASQR-20.1.

2) The use of an operator certification program or other special manufacturing methodologies (e.g. manufacturing controlling features, die/mold control, method of manufacturing, etc.) shall be approved by the appropriate Member via ASQR-01 Form 3 prior to implementation.

3) Suppliers shall have a process in place that ensures monitor and measurement equipment selected for use in the verification of product is appropriate and effective for the application. The supplier should select M&TE with an accuracy ratio of 10 to 1 (product tolerance to M&TE tolerance) however accuracy ratios as low as 4 to 1 are acceptable unless otherwise specified. Use of M&TE with accuracy ratios less than 4 to 1 are not permitted unless a detailed measurement uncertainty analysis in accordance with ANSI/NCSL Z540.3 indicates an uncertainty ratio of 1.5 to 1 or better, and the measurement process is maintained under statistical quality control.

4) When functional performance / test data is required, include the following minimum requirements:

- Test specification number, revision status, amendment number and addendum.
- Part number / serial number and revision letter of material / component being tested.
- Test paragraph, required reading, actual reading (use positive statement, e.g. “No Leakage” if actual reading is not quantifiable).
- Date test was performed.
- Operator identification.
- Inspection approval signature / stamp.
- Blank entries that are not applicable shall be noted “N/A”.

8.3 Control of Nonconforming Product:

a) No Additional Requirements

b) Suppliers shall coordinate all reports of nonconformances for Member supplied material in accordance with the applicable Member requirements.

c) Articles deemed scrap shall be clearly identified and physically rendered
8.4 Analysis of Data: No Additional Requirements

8.5 Improvement:

8.5.1 Continual Improvement: No Additional Requirements

8.5.2 Corrective Action:
When required by the Member, the supplier shall:
- Use Root Cause Corrective Action (RCCA) Checklist – UTCQR Form 11 to document and validate effective root cause, corrective and preventive actions.
- Apply and conform to AS 13000 Problem Solving Requirements for Suppliers.

a-c) No Additional Requirements
d) When required to provide corrective action, supplier shall prepare a report documenting the occurrence, findings, and assessment of the affected product and submit to the applicable Member. Provide objective evidence of root cause analysis and implementation of corrective and preventive action that eliminates risk of reoccurrence.
e) No Additional Requirements
f) To ensure effectiveness of the corrective action, suppliers shall perform 100% inspection of the deviated characteristics for a minimum of the next (3) three consecutive manufactured lots unless otherwise specified by the Member. In the case of a dimensional escape or dimensional disclosure, the Member reserves the right to assign a Temporary Key Characteristic (TKC) subject to Key Characteristic (KC) requirements specified in UTCQR 09.1.

(g-i) No Additional Requirements

8.5.3 Preventive Action: No Additional Requirements

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