Supplier Quality Manual

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1. Doing Business with AD&M Units

1.1 About AD&M Business Unit

AD&M Business Unit is a global technology leader in connectivity systems for aviation, space, military and marine use. AD&M Business Unit is part of TE Connectivity. TE Connectivity has the industry's broadest range of connectivity solutions. TE is one of the world's largest suppliers of electronic components and network solutions, including connectors and interconnection systems, relays, switches, circuit protection devices, fiber optics, antennas, touch screens, sensors, and wire and cable. Our products are used in virtually every industry—from consumer electronics, energy and healthcare, to automotive, aerospace and communication networks. Please see our company website for latest updated information: https://supplierportal.te.com

1.2 Purpose of the AD&M Business Unit Supplier Quality Manual

The purpose of this manual is to communicate the AD&M Business Unit expectations to our suppliers, and the core set of tools, processes and systems that are to be used in the manufacture, design and development of parts, products and services supplied to the AD&M Business Unit and its manufacturing locations. AD&M Business Units believe the implementation of the various tools and procedures described in this manual, will assist our suppliers in the continuous development of their business and manufacturing processes. References to the terms 'shall' and 'must' mean that the described requirement is mandatory, while the term 'should' indicates the described requirement is needed and expected with some flexibility in how it can be completed.

1.3 Supplier Responsibilities

It is the responsibility of the supplier to understand and comply with this manual and the quality policies, procedures, work instructions, and other requirements flowed down by TE as related to their scope of work. Work performed by a Supplier's sub-tier/sub-contract Suppliers shall meet AD&M Business Unit's quality, procedures and work instructions as related to their contracted scope of work. Requirements can be communicated through drawings, specifications, on the face of the PO, and through referenced policies and procedures. It is the Supplier's responsibility to flow-down these requirements to sub-tier/sub-contract Suppliers and to meet these requirements. AD&M Business Unit understands that our business locations may differ in nature and in some cases may have unique supplier quality requirements that are market specific. However, the processes and tools represented in this manual represent the core expectations and requirements of our business. The differences that you will see across our organization will be minimal and will be driven by customer and/or market specific requirements.

1.4 Guide to Ethical Conduct

The TE Connectivity Guide to Ethical Conduct outlines AD&M Business Unit's expectations regarding workplace standards and business practices of our suppliers. All suppliers shall adhere to this code. Please make your employees aware of our TE Connectivity Guide to Ethical Conduct. The TE Connectivity Guide to Ethical Conduct is translated into many languages and may be downloaded through our portal website at http://www.te.com/aboutus/ethicalConduct.asp

One key component of the Supplier Code of Conduct is Compliance Monitoring

The supplier will allow AD&M Business Unit and/or any of its representatives or agent's access to its facilities and all relevant records associated with the products and services provided to AD&M Business Unit. The review of the material contained within the TE Connectivity Guide to Ethical Conduct shall be completed by your company's highest ranking official and serve as a model in understanding TE Connectivity's core values and expectations of our suppliers. Refer to TEC 1015 in the supplier portal.

1.5 Conflict Minerals

Under legislation passed by the US Security and Exchange commission (SEC), manufacturers who file certain reports with the SEC must disclose whether products they manufacture, or contract to manufacture, contain conflict minerals that come from sources that support or fund inhumane treatment.

2. Supplier Requirements

All AD&M Business Unit direct material suppliers shall be minimally compliant to requirements of ISO–9001 or AS9100 and approved in the SSU (Supplier Set Up) system. All *new* suppliers shall be certified to either ISO-9001, AS9100, IATF16949 latest revisions, AS EN9100, (or ISO13485 if manufacturing parts related to medical applications), or in accordance with TEC-1006 Approval of Suppliers section 4.1 C6 or F, and have been approved in accordance with 102-32022 – Supplier Audit for ADM Business Unit. This pertains to those suppliers who directly supply product or services to AD&M Business Unit, including service, and special process suppliers, regardless of tier level. Special preference shall be given to plating suppliers that have NADCAP certifications.

- Distributors - Distributors shall have a quality system that conforms to specific ISO / Industry specific guidelines (e.g., AS-9120). AD&M reserves the option to audit the distributor prior to final approval.
- Calibration Suppliers / Testing Houses (if applicable) - Calibration suppliers shall have a quality system that conforms to A2LA, ISO 17025 (Guide 25) or other country certifying body.
- Raw Material Suppliers (if applicable) - Raw material suppliers shall have a quality system that conforms to relevant industry quality standards, and airworthiness regulatory requirements, as required.
- All other suppliers shall have a quality system that conforms to ISO-9001 or AS9100, latest revision.

  Conformity to the above quality standards must be evidenced by either: third-party certification; or an AD&M Business Unit approved 5176 audit conducted by the supplier quality engineering function.
- TE supplier shall permit access by representatives of TE, TE customers, and applicable regulatory agencies to the supplier's premises (and the premises of Supplier's subcontractors and supplier (s) for the purpose of evaluating Supplier's facilities, process, goods, quality system and records.
- A supplier not meeting the above quality system requirements may be assessed at any time for reasons not limited to performance, and may be liable for the actual costs of such assessments, at the AD&M Business Unit's option.

2.1 Supplier Confidentiality

Documents furnished by AD&M Business Unit to the Supplier are solely for the purpose of doing business with AD&M Business Unit. These documents shall be controlled by the Supplier and must not be transmitted to others without the written consent and approval of AD&M Business Unit

2.2 Quality Planning

Suppliers shall follow industry standard Product Quality Planning requirements. See section 4.0 of this Manual for more detailed information. Quality planning must be maintained throughout all phases of the product life cycle, from inception to delivery to the customer. See section 4.0 of this Manual for more detailed information.

2.3 Sub Tier Supplier Control

The supplier must maintain quality and technical qualifications for sub-tier suppliers/contractors and the products purchased through these sub tier suppliers. The AD&M Business Unit reserves the right to specify or approve sub-tier suppliers contracted by its suppliers for work performed on AD&M Business Unit material. This includes but is not limited to special process, materials testing services, distributors, and other subcontractors. AD&M approval does not relieve the supplier's responsibility for non-conforming products shipped to AD&M. Special processes include but are not limited to, Non-Destructive Testing, Heat Treating, Welding, Chemical Processing Plating & Coatings.

- Suppliers shall flow down to its sub-tier contractors, all relevant quality requirements imposed by this manual and other contractual documents, including government-regulatory and Defense requirements. Suppliers shall conduct regular audits of their key sub-tier contractors

2.4 Material Identification

The supplier must establish, document and communicate to the AD&M Business Unit a system for the control and identification of all materials.

When acceptance authority media (AAM) are used (e.g. stamps, electronic signatures, passwords), the organization shall establish controls for the media

A. *Seller shall, within organization and its supply chain, ensure that the use of AAM is clearly defined within its Quality Management System (QMS)*

B. *Seller shall be able to demonstrate evidence of communication to its employees and its supply chain; employees and the supply chain shall be accountable for managing the required compliance and conformity.*

C. *Seller shall maintain compliance to the AAM requirements by assessing its process and supply chain as part of its internal audit activities. The areas of focus of this assessment shall include but not limited to:*

- *Authority Media Application Errors (i.e. Omission, Typos, Legibility, etc.)*
- *Authority Media Application Untimely use (i.e. Documentation is not completed as planned, "Stamp/Sign as you go", etc.)*
- *Authority Media Application Misrepresentation (i.e., Uncertified personnel, Falsification of documentation, Work not performed as planned, etc.)*
- *Authority Media Application Training Deficiencies (i.e. Ethics, Culture awareness, Proper use of authority media, etc.)*

2.5 Lot Traceability

Suppliers shall establish a lot traceability system that tracks components from raw material through inspection and test operations, including rework and sub-supplier procedures and finally through shipment to AD&M Business Units. Suppliers must certify, as part of sample submissions, compliance with current U.S., EU or other Federal regulations on restricted, toxic or hazardous substances as specified by PO or contract. **(TEC-1015, and TEC-138-702 Environmental Compliance also applies to lot traceability)** See additional information in TEC-1005.

2.6 Problem Solving

All suppliers for the AD&M Business Unit must establish and maintain documented procedures for implementing a system for corrective and preventive action with disciplined problem solving methods. See section 6.0 of this Manual for more detailed information.

2.7 Internal Audits

A supplier must conduct regular internal audits to ensure continued compliance with internal procedures and customer requirements in accordance with the minimal requirements of ISO-9001 / AS 9100, latest revisions. In lieu of certifications, the supplier QMS must show evidence of an internal audit procedure.

2.8 Operator and Inspection Instructions

The supplier must have written operator and inspection instructions for employees who have responsibilities for operation of the process and inspection. In addition, suppliers will prepare, train and appropriately maintain operator and inspection instructions.

The supplier may use reduced-frequency (sampling) inspection plans only when historical records indicate that a reduction in inspection can be achieved without jeopardizing the level of quality. The supplier shall employ sampling inspection in accordance with nationally accepted / customer required standards as specified by the AD&M Business Unit.

- However, if sampling discovers a defect or discrepancy, then 100% inspection of the lot is required.
- The supplier shall maintain quality records in sufficient detail to establish evidence that any sampling was representative, the required tests and verifications were properly performed, and that only material meeting specified requirements have been accepted for production and delivery to AD&M Business Unit. These records shall be available for review by AD&M Business Unit or an AD&M Business Unit authorized representative, as required. Copies of individual records shall be furnished to the AD&M Business Unit upon request.

2.9 Packaging Plan

The supplier must comply with specific packaging / bar coding instructions defined by the AD&M receiving facility as called out in purchase order requirements. Suppliers must follow up as appropriate with the AD&M Business Unit location on any additional or unclear packaging requirements to ensure protection against damage in transit.

2.10 Business Changes

Any significant changes in business climate such as acquisitions, divestitures, pending litigation, or any activity that may change the financial viability of the supplier's organization must be communicated to the AD&M Business Unit purchasing or commodity manager representative.

2.11 Communications

All documentation must be communicated to the AD&M Business Unit in English unless otherwise specified. Suppliers must maintain and have access to an electronic form of communication i.e., the internet/worldwide web. See sections 4.2, 4.3, & 4.10 of this Manual for more detailed information.

2.12 Supplier SNMS System

The Quality Assurance function at the supplier location must submit for secondary access and register a company designated person, who shall have access to the SNMS (Supplier Notification Management System). Access is through the supplier portal, at http://access.tycoelectronics.com. Training and communications are available within the portal tool. This is the TE Complaint Handling System (TECHS) that supports 8D problem solving for suspected supplier related quality issues and is supported by TEC-1002 TE Complaint Handling System, the global specification for complaint handling. Suppliers shall perform effective 8-D problem solving in accordance with TEC-402-115 TE Global Problem Solving Process. The SNMS (Supplier Notification Management System) is the tool that must be used by the supplier to view and react to suspected supplier complaint issues.) The requirements above are the procedural process that must be followed on a regular basis to ensure effective corrective action to maintain a continuous supply of material to AD&M Business Unit facilities.

2.13 Environmental Health and Safety (EHS)

Through our products, practices and people, TE Connectivity and the AD&M Business Unit are helping to create a more sustainable world. TE Connectivity and the AD&M Business Unit commitment to sustainability goes far beyond a mere program. It's woven into the fabric of our culture. TE Connectivity and the AD&M Business Unit has a culture of responsibility that encourages every employee to ask the questions that lead to more sustainable processes and practices, and help our company support a sustainable future. We encourage ISO14001 for all our suppliers. Our suppliers are an important part of this culture. TE Connectivity and the AD&M Business Unit expects all suppliers to adhere to principles of

- Offering a safe work environment for employees
- Protection of the environment and pollution prevention
- Committing to continuous improvement in EHS performance

TE Connectivity and the AD&M Business Unit expect all suppliers to implement Management Systems that identify, document and address operational risks to the environment and employee health and safety. These EHS Management Systems should include identification of key EHS risks and impacts, development of operational controls to address the risks and minimize the impacts and preparation of response plans to address emergencies. TE Connectivity and the AD&M Business Unit expect all suppliers to adhere to legal requirements for EHS (local, state, provincial, and federal) in all jurisdictions in which they operate. Please refer to the TE Connectivity and the AD&M Business Unit Guide to Ethical Conduct on-line at: http://www.myte.tycoelectronics.com

2.14 Counterfeit Materials and Parts

The purpose of this section is to describe the process and due diligence performed to prevent the purchase and / or use of Counterfeit Materials and Parts and to meet to the requirements of the AS 5553 - Counterfeit Electronic Parts, Avoidance, Detection, Mitigation, and Disposition. This shall be done in accordance with TEC-1006 Approval of Suppliers. Below are the minimal requirements for providers of such materials / parts:

COUNTERFEIT PARTS / MATERIALS

a. Definitions.

- "Counterfeit Goods" shall mean items, including any material, part, component, module, or assembly of such items, whose description, origin, material, source of manufacture, performance, or characteristics are misrepresented. This term includes items that (i) are an unauthorized copy or substitute of an Original Equipment Manufacturer or Original Component Manufacturer (collectively, "OEM / OCM") item; (ii) are not traceable to an OEM / OCM sufficient to ensure authenticity in OEM / OCM design and manufacture; (iii) do not contain proper external or internal materials or components required by the OEM / OCM or are not constructed in accordance with OEM / OCM design; (iv) have been re-worked, re-marked, re-labeled, repaired, refurbished, or otherwise modified from OEM / OCM design but not disclosed as such or are represented as OEM / OCM authentic or new; or (iv) have not passed successfully all OEM / OCM required testing, verification, screening, and quality control processes.
- "Authorized Distributor" shall mean a person, business, or firm that is expressly authorized or franchised by an OEM / OCM to sell or distribute the OEM / OCM's products. Seller/Authorized Distributor shall make available immediately to Purchaser's request, OEM / OCM and other documentation that authenticates them as an "Authorized Distributor".

b. Seller shall not furnish to Purchaser any items under this Order that are or contain Counterfeit Goods.

c. Seller shall establish, implement and maintain a documented Counterfeit Materials and Parts Prevention system in accordance with Industry Standard AS-5553 as a guideline. Such system shall be adequate to prevent the delivery of counterfeit materials and/or parts and to control materials and parts identified as counterfeit to ensure that items furnished to Purchaser are not Counterfeit Goods. Seller's system shall include, but is not limited to, the direct procurement of items from only OEM / OCM's or their Authorized Distributors and conducting approved testing or inspection to ensure the authenticity of items. Seller shall not acquire items from any source other than OEMs / OCMs or their Authorized Distributors unless first approved in writing by Purchaser's Procurement representative. Seller must present complete and compelling support documentation for its request and include in its request all actions Seller will take to ensure the items thus procured are not Counterfeit Goods. Purchaser's approval of Seller's request does not relieve Seller of its responsibility to comply with all requirements of this Order, including those contained in this section. Seller must make available immediately to Purchaser, at Purchaser's request, OEM / OCM and other documentation that authenticates traceability of the items to that applicable OEM / OCM.

d. If Seller becomes aware or has reason to suspect that it has furnished Counterfeit Goods to Purchaser, Seller immediately shall notify Purchaser and replace, at Seller's expense, such Counterfeit Goods with OEM / OCM's or Purchaser-approved items that conform to the requirements of purchase order. Seller shall be solely liable for all costs related to the replacement of Counterfeit Goods and any testing or validation necessitated by the installation of authentic items after Counterfeit Goods have been replaced. The remedies contained in this article are in addition to any remedies Purchaser may have at law, equity, or under other provisions of this Order.

e. Seller shall bear the sole responsibility for procuring authentic items from its suppliers and subcontractors and shall flow down the requirements of this section to its suppliers and subcontractors at any tier for the performance of this Order.

2.15 For AD&M Business Unit Aerospace Suppliers

Source Inspection. When invoked via contract / PO, the supplier shall support Source Inspection activities required by the AD&M Business Unit, Customer, or Government representatives. The supplier will contact the appropriate party for source inspection upon completion of the product. Product shall not be shipped until source inspection has been completed, including appropriate documentation. If the supplier has difficulty in reaching the appropriate source inspector, they shall contact their buyer for support without undue delays.

2.16 Foreign Object Debris/Damage Prevention Program (FOD)

Product suppliers must have an FOD program for the purpose of prevention, detection, and removal of foreign object debris. The program must meet the following requirements as applicable:

- FOD prevention shall be implemented in all areas as applicable and FOD training awareness must be given.
- Parts must be protected from handling damage in all areas; material handling awareness training must be provided to all employees and handling standards documented.
- Supplier must document all FOD incidents and perform root cause analysis.
- Metrics must be documented if FOD incidents occur.
- If critical FOD areas are noted/ required, Physical Entry Controls must be established with entry requirements visually posted outside each area.
  Internal auditing of FOD prevention in all critical FOD areas must be conducted and documented.

2.17 Certification of Conformance (CoC) or Certificate of Analysis (CoA)

Unless otherwise specified by PO/contract, a supplier must provide adequate certification of conformance for all materials and processes specified on the purchase order or contract, for each shipment. Where available, these may be submitted electronically. Suppliers are responsible for all PO terms and conformity characteristics per the PO/contract accepted, i.e., for (direct) suppliers delivering a product which includes sub-contracted or special processes, all such processes must be indicated on the direct supplier's certificate of conformance. The CoC and CoA must be signed and dated by a duly authorized supplier representative.

This CoC shall include the TE part number and revision level, purchase order number, quantity of parts in the shipment, date of manufacture and the release authority's signature. This signature must be in compliance with AAM (Authority Acceptance Media) signature, stamp or any other way of approval and must be on the CoC. Where CoA's are requested by material specification or other, they also must be signed and dated. Material reports shall accompany all raw material or contact material shipments. Supplier shall supply a current Material Data Safety Sheet (MSDS) for raw material, compounds, and other applicable materials.

Shelf Life / Age-Sensitive materials, General Certificates

A general certification of conformance, where required, shall be used for all parts and materials, unless otherwise indicated herein. This form, or an AD&M Business Unit-approved equivalent, shall be used unless otherwise specified by contract/PO. If the supplier also supplies the raw metallic material for machined or stamped components, a copy of the original mill certificate shall be provided.

Special Process Certificates

In addition to the general certification, where an additional special process certification is required, the certificate of conformance shall contain at a minimum:

- TE part number and revision level
- TE part description
- Purchase order number
- TE part number and revision level
- The process performed
- Lot Size / Quantity
- the process (s) performed
- The Specification number and level
- Sample size (optional)
- Applicable process specifications/controls
- Applicable test results
- Serial numbers where applicable to contract

If the job was processed using a NADCAP accredited process, the supplier shall include a statement indicating the job was processed per their NADCAP accreditation, and shall include their accreditation number and expiration date.

Raw metallic materials (including forgings and castings) supplied, shall include a copy of the original mill certificate or material test report (certification). Supplier shall submit the name of the test laboratory to the AD&M business unit Purchasing and Quality departments for review and acceptance by AD&M Quality and/or Engineering personnel. Raw material mill certifications may not be altered or have any markings other than check marks from verification of physical and chemical values and/or indication of inspection acceptance. Stamps may be applied by warehouses/distributors to add incidental information such as the AD&M Business Unit purchase order, weight shipped, etc.

- Casting and forging suppliers shall also include the physical or mechanical properties with heat treat batch-lot numbers.
- When required by contract/PO, certification shall show that all materials comply with all Government requirements including country of origin and country where the material is melted.

2.18 Employee Training and Competency

Supplier shall ensure that all employees (full time / part time / temporary) are trained and competent in the job tasks responsible for. Competency proof shall be in the form stated in the suppliers QMS and training records shall be on file and maintained in accordance with TE AD&M Business Unit's Aerospace record retention requirements (10 years)

3. Supplier Assessment and Qualification

The AD&M Business Unit business group maintains a supplier selection and sourcing process that adequately evaluates and identifies potential sourcing partners for the AD&M Business Unit.

AD&M Business Unit suppliers must be capable of meeting the applicable AD&M Business Unit group's quality, delivery, cost, environmental and health and continuous improvement requirements. The AD&M Business Unit will validate these requirements as a part of their supplier selection process through supplier assessment and qualification activities. Supplier assessment results from one AD&M Business Unit supplier quality review may be sufficient endorsement for another TE Connectivity Business Unit, to use that supplier without re-qualification. The AD&M Business Unit supplier assessment and qualification process includes the following:

3.1 Supplier Approval Process

The supplier approval process shall be done in accordance with internal document TEC-1006 Approval of Suppliers. This specification establishes the criteria for the selection, qualification, and approval of suppliers to TE Connectivity and applies to all suppliers of externally acquired production and non-production goods and services. The requirements of TEC-1005 Total Quality Management Requirements for Suppliers defines the minimum quality management system requirements for suppliers of production materials, components and assemblies and service suppliers (test labs, calibration service, tooling, warehouse / logistics) that have impact on product quality, product environmental compliance or delivery.

3.2 AD&M Supplier Requirements

The Supplier Quality Group will perform the quality screening process based on the review of Form 4483 as part of the SSU (Supplier Set-Up) application program:

- Suppliers need to show evidence of registration (from an accredited registrar) to an industry sector quality system, (e.g., ISO 9001 / AS-9100 / NADCAP) to be approved as part of the SSU (Supplier Set-Up) application program, or show evidence of a QMS that will be audited by supplier quality engineering (see next section)

3.3 Supplier Assessment

Once the SSU (Supplier Set-Up) application screening process is completed and the supplier is identified as a potential supplier to AD&M Business Unit, a supplier Quality System Assessment (QSA) shall be completed to include an on-site and/or desktop-audit or self-assessment if the supplier is not certified by an accredited registrar.

The SAP SSU form 4483 Quality Approval section shall have approval options for "one time buys". These suppliers are termed as "Transitional Suppliers". This shall be for a temporary time period only as defined on

this form. The part number status option in SAP shall show as “one time pre-approved buy as a pre-production part” when / where required.

All other suppliers shall have an on-site or desktop audit completed in accordance with 102- 32022 Supplier Audit for ADM Business Unit by an ADM SQE. These suppliers are termed as “key suppliers”, and must complete the self-audit checklist (Form 5176-6) and submit with evidence to the Supplier Quality Group prior to an on-site audit being conducted.

Suppliers are encouraged to conduct self-assessments to become familiar with AD&M Business Unit’s Quality System expectations. The results of the assessment will be reported and maintained via the TE Connectivity AD&M Business Unit portal system. Per customer requirements, some AD&M Business Unit facilities may require annual on-site supplier quality assessments. AD&M Business Unit reserves the right to schedule additional assessments based on factors not limited to risk, performance and/or non-compliance to quality system requirements. The cost associated with audits performed as a result of risk induced by supplier performance or compliance issues may be charged to the supplier at AD&M Business Unit’s option. Third party quality system registration such as ISO-9000 or AS-9100 may be recognized in lieu of a periodic on-site assessment if the AD&M Business Unit business group deems it appropriate. Any third party providing certification to these standards must be accredited from a country authorized entity such as example ANAB (USA).

For AD&M Business Unit Aerospace service suppliers:

Upon notification from the AD&M Business Unit, any direct service supplier may be required to submit a self-assessment. This assessment must be submitted to AD&M Business Unit Aerospace Supplier Quality function and be kept current not to exceed 36 months. At AD&M Business Unit’s option, calibration sources / testing houses, may submit A2LA, ISO 17025, or equivalent accreditation in place of a requested survey.

3.4 Assessment Results

In most cases the potential supplier will receive a formal report within 15 business days of the assessment. When system deficiencies are identified, a response time will be provided by AD&M Business Unit personnel for the supplier to define corresponding corrective actions. Failure to provide a suitable response in a timely manner is cause for disapproval for further consideration. AD&M Business Unit personnel may discontinue the qualification process at any time.

3.5 Approvals

Types of approvals may be granted:

- Full Approval – requires a minimum score of (90) - enables AD&M Business Unit to award business with a supplier at any time within the capabilities or categories listed on the AD&M Business Unit ASL.
- Conditional approval – score between (70 – 89) - enables AD&M Business Unit to award business to a supplier that is pending a corrective action completion/verification from the Quality System Assessment (QSA). A corrective action plan must be submitted and approved by AD&M Business Unit within 30 days. For AD&M Business Unit Aerospace suppliers – A supplier could obtain conditional approval for several reasons; including an unacceptable QSA (Quality System Assessment) score, unacceptable performance and/or risk found during on-site activities.
- Rejected / Un-approved (Probation Suppliers) – a score below 70 - suppliers previously approved who fail to meet AD&M Business Unit quality and product requirements. AD&M Business Unit shall not issue contracts/purchase orders to suppliers who are not approved. They shall be considered as Probationary Suppliers. Once Approval has been established, the supplier will be added to an Approved Supplier Listing (ASL). Where directed or where sole source conditions exist, the supplier shall have an approved corrective action plan in place to protect TE and its customers.

4. Quality Planning and Product Approval

4.1 General Requirements

New Product Development, for suppliers with design responsibility as part of the product realization process, shall be done in accordance with the requirements of AS 9100, section 8.0 Operation, with specific attention to section 8.3 Design and Development of Products and Services. The supplier must have a documented design review process that defines the structured method and established steps necessary to assure that a product meets customer expectations., The supplier’s manufacturing processes must have the capability to consistently meet these requirements. Design Review shall be done at each step of the determined design and development stages. Frequency of follow up, in accordance with project timeline, shall include review of

data results and evidence and shall be documented. These requirements shall be flowed down in accordance with AS 9100 section 8.4 Control of Externally Provided Processes, Products and Services

Production Process Verification shall be done in accordance with the requirements of AS 9100, section 8.5.1.3 This section defines the general requirements for production part qualification and approval. Additional requirements may apply. Prior to first production shipment, part or component being sourced must be approved for production by the AD&M Business Unit facility engineering functions. The AD&M Business Unit facility or business group will approve parts via the following:

- First Article Inspection (FAI) – FAI is only applicable to AD&M Business Unit suppliers and shall be done in accordance with AS 9102. FAI report requirements are defined by each AD&M business unit using internal document procedure 102-32067.

4.2 Record Retention

The supplier must retain adequate quality system records, including all advanced quality planning

documents, process guidelines, laboratory test instructions, gauge/test equipment verification, calibration and performance test methods and product and process validation test results. The TE AD&M Business Unit Aerospace default requirement for supplier record retention is 10 years unless otherwise specified by procurement. In addition, the supplier must retain quality performance records, including but not limited to control charts, FAI, inspection and test results. At a minimum, the supplier must retain the records for at least (10) years unless otherwise specified by the procurement function, and make them available for review as required:

- Quality system records (control charts, inspection and test records, audit records) – default is 10 calendar years
- Quality performance records (production part approvals, purchase orders and amendments, tooling records, customer complaints) - one calendar year after part production is discontinued
- Contact the TE Buying Site at the end of the record retention period for record disposition instructions.

* For some AD&M Business Unit Aerospace facilities, the above records may be required to be retained for longer than 10 years. (The supplier will be notified via PO/contract when this is a requirement). The supplier agrees to transmit to the AD&M Business Unit, those records kept in support of the AD&M Business Unit work, in the event that the supplier discontinues business operations.

4.3 Change Management

Once approved, the supplier shall notify AD&M Business Unit of any planned changes to the design, process, or site. Conditions requiring notification and/or partial / full FAI resubmission are listed in the latest edition of the AS 9102 First Article Inspection Requirement.

Drawing and Change Control

The AD&M Business Unit Supplier Quality Engineering shall ensure the suppliers internal document control procedures and forms meet guidelines set forth in internal TE document TEC-1037. The supplier's quality system must ensure that the latest engineering drawings and specifications are available at the manufacturing, test or inspection location. This is accomplished by TE Suppliers registering for and utilizing the Tyco Electronics Global Supplier Portal access at https://supplier.te.com/web/supplier-portal/home which grants access to engineering specifications and drawings. This includes applicable previous revisions if AD&M Business Unit contract/PO language requires other than the most recent revision(s).

- for written procedure(s) there should be an indicated method utilized for receipt, review or distribution of all changes and the method of recalling and disposing of an obsolete item. A review process must be established in the quality system to confirm that applicable drawings and specifications are at the latest revision level with the issuing source. Supplier must sign up for Document Subscriptions in the portal, to receive the applicable documents latest revisions, once registered in the portal.

NOTE: Direct material suppliers are required to obtain documentation of the AD&M Business Unit approval prior to implementing any change. This requirement includes direct product suppliers, (including aerospace distributors)

Conditions requiring AD&M Business Unit notification include, but are not limited to the following:

- Change of raw material used to produce ADM parts
- New or modified production tooling or manufacturing equipment

- Production parts produced at a new facility
- Product or process changes (internal or externally by sub-suppliers)
- Change of raw material suppliers or sub-supplier for outside services (heat treat, plating, etc.)
- Change in test/inspection methods (techniques)
- Change in engineering drawings or specifications
- Production suspended / stopped for (12) months or more

4.4 Operations

The supplier shall have work practices, tools, and analytical techniques describing the Operation Process and specifically Advanced Quality Planning, and shall follow the requirements as found, in section 8 of the AS 9100 requirements. There are specific supplier procedures and forms that support the use of critical quality tools. The most important tools are listed below:

- Technical and Specification Reviews (required)
- Design Failure Mode and Effects Analysis (DFMEA) (preferred but not required)
- Process Failure Mode and Effects Analysis (PFMEA) (preferred risk assessment tool if AD&M is subject to repeat failure modes)
- Control Plan / Quality Inspection Plan (required)
- MSA Studies (Measurement Systems Analysis) and Capability of Measuring and Test Equipment (not required, may be requested if repeat fail modes)
- Process Capability (AS 9103 Variation Management of Key Characteristics) (preferred but not required)
- Full Dimensional Layout (AS 9102 First Article Inspection Requirement) (required)

4.5 Performance Test Requirements

Suppliers shall conduct performance testing to confirm that current production meets design requirements. Testing is to be conducted in accordance with the established control plan, and / or qualification plan / QIP / QPL.

Performance test failures are cause for a supplier to stop production immediately, pending analysis of the process and corrective action. Suppliers are required to immediately notify the AD&M Business Unit quality and procurement representatives of any test failure, and will suspend shipments and identify suspect shipped lots.

4.6 Measurement System Analysis for Key Characteristics

The Supplier shall perform Measurement System Analysis (MSA) studies for all gages used to measure key product characteristics as defined by the design record (drawings and specifications). These shall be done in accordance with (TEC-402-51 “Error of Measurement Studies Manual or 402-1001 Measurement System Analysis Manual). The supplier’s measurement and calibration methods must be agreed to by AD&M Business Unit representatives to ensure consistent qualification of parts.

4.7 Process Capability requirements for Key Characteristics

Key Characteristics require process capability analyses at new product launch and when product or process changes affect these characteristics. Additional periodic capability analyses may be required by the AD&M Business Unit. If no key characteristics are identified, the Supplier should evaluate and identify product and/or process characteristics that can be used to ensure process capability. This shall be reviewed and agreed to by AD&M Business Unit representatives to ensure alignment and process quality. Initial process studies shall be summarized with the following capability or performance indices: (Cp/Cpk) and shall be in accordance with AS 9103 Variation Management of Key Characteristics.

AD&M Business Unit minimum requirements for short-term capability and stability are an Index > 1.67. AD&M Business Unit minimum requirements for long-term capability and stability is an index >1.33. If acceptance criteria are not satisfied, Supplier shall contact AD&M Business Unit with a corrective action plan and a modified Control Plan providing for 100% inspection. Variation reduction efforts shall continue until the acceptance criteria are met, or until approval is obtained from AD&M Business Unit.

Note: 100% inspection methodologies are subject to review and concurrence by AD&M Business Unit SQE. For special cases where the annual usage volumes do not meet the guidelines for a thorough process capability assessment, requirements shall be defined by the AD&M Business Unit business. Suppliers should reference the latest version of AS 9103 Variation of Key Characteristics.

For AD&M Business Unit Aerospace suppliers, they shall implement a process conforming to AS9103 Variation Management for Key Characteristics where identified on design records. SPC data, including Cp and Cpk summaries for key characteristics shall be identified in the control plan / QIP, and may be required with each shipment at the discretion of the AD&M receiving site facility.

4.8 First Article Inspection (FAI)

FAI is applicable to AD&M Business Unit suppliers. First Articles shall be performed by the supplier in accordance with AS9102 First Article Inspection and AS9103 Variation Management of Key Characteristics. Specific commodity based part requirements may apply and these shall be done in accordance with additional flow down requirements as defined in purchase orders in support of AS9102 requirements.

FAI Full or partial will be required, when any of the following occurs:

1. A change in the design characteristics fit, form, or function of the parts
2. A change in manufacturing source (s), process (es), inspection method (s), location of manufacture, tooling, or materials that can potentially affect fit, form, or function
3. A change in numerical control program or translation to another media that can potentially affect fit, form, or function
4. A natural or man-made event, which may adversely affect the manufacturing process
5. An implementation of corrective action required to complete a previous FAI
6. A lapse in production for two years shall require an update for any characteristics that may be impacted by the inactivity. This lapse is from the completion of last production operation to the actual restart of production

FAI Report Status (As determined by the AD&M Business Unit facility):

FAI Report package is to be submitted to the Supplier Quality Engineering function or buyer for

package content review. Packaged documentation may include the follow documents

- process capability reports for quantity and production requirements,
- gage studies (Gage R&R)
- CpK data for all key characteristics
- Control Plan / QIP review
- PFMEA
- applicable forms as required in AS 9102 Appendix A.
- depending of the change other documents may be required

New Supplier On Board Requirements (New Part):

- All requirements as defined in TEC-1006 Supplier Approval must have been met and supplier approved in SSU.
- FAI Report in accordance with AS 9102 Procedure for First Article Inspection and Qualification of Parts / AS 9103 Variation Management of Key Characteristics and where applicable TE requirements as defined.

Existing Supplier On Board Requirements (New Part)

- Review of supplier certification status in the SSU shall be done by the Supplier Quality Manager to ensure status is current. Upon concurrence, where additional evidence of new process is required only a process audit needs to be conducted in accordance with 102-32022 –Supplier Audit for ADM Business Unit.

- FAI Report in accordance with AS 9102 Procedure for First Article Inspection and Qualification of Parts / AS 9103 Variation Management of Key Characteristics and where applicable TE requirements as defined.
- Existing suppliers on board may be exempt for first article / production when adding by similarity, a part family previously approved by TE representative
- Existing suppliers on board may be exempt on certain testing / requirements that were approved / tested previously where documented evidence is on file (i.e.; color & elongation if same resin used)

FAI Status:

The following are the status indicators for a FAI report package submitted by a supplier:

- Approved: Indicates that the product meets all AD&M Business Unit requirements and authorizes supplier to ship production quantities of the product. Note: Supplier is not authorized to ship product until product is approved by AD&M Business Unit. Approval is defined as a customer approved and signed AS9102 Form#1.
- Conditional Approval: Permits supplier to ship product on a limited time and/or piece quantity basis. Note: Interim approval expires after -30 days from the time FAI report is dispositioned. A FAI report resubmission is required by the supplier, along with a corrective action, to obtain a status of approved. Additional guidelines on product containment should be reviewed in the latest edition of the AS 9100 standard. After 30 days, if a new FAI report has not been received, parts will be rejected.
- Rejection: Indicates that the FAI report documentation and/or product does not meet AD&M Business Unit's requirements for approval. Appropriate action shall be taken by the supplier to correct the deficiency and FAI report re-submission is required. Note: Supplier is not authorized to ship product. New production run must be re-submitted and approved by AD&M Business Unit. Failure to comply with this may lead to a Defective Material Report (DMR) or a Quality Notification being issued against the supplier and associated fees may be levied.

4.9 Production Part Supply Process

TE Facility Incoming Inspection Process

- TE facility incoming Inspection shall be performed on all legacy and newly approved supplier parts in accordance with Local procedure for Inspection and Testing. New parts, parts from a new supplier, ECN parts, parts previously rejected at incoming inspection / in manufacturing / by the end customer cannot qualify for skip lot (102-81 Skip Lot Inspection) or SAR (Stock-As-Received)
- ECN Parts – shall be handled in accordance with: (102-21 – Process Engineering Change / 102-2559 – Engineering Change Request / Notice for AD&M)
- SAR Parts – SAR (Stock-As-Received) parts shall be handled in accordance with: (102-33 – Supplier Part Numbers Stock-As-Received. Minimal qualification requirements include: (3) consecutive lots received without defects.
- Acceptance Sampling Plans – Incoming receiving inspection plan for approved supplier parts must be based on a C=0 sampling, and set up in accordance with (102-1324 Procedure For Zero Acceptance Number Sampling Plan / 102-27 Sampling Plan Inspection Strategies). AQL (Acceptable Quality Level) must be in accordance with: (ANSI/ASQC Z1.4 – Sampling Procedures & Tables for Inspection by Attributes / ANSI/ASQC Z1.9 – Sampling Procedures & Tables for Inspection by Variables for Percent Non Conforming / MIL-105E - Sampling Procedures & Tables for Inspection by Attributes / MIL-414 - Sampling Procedures & Tables for Inspection by Variables for Percent Defective / ISO-2859 – Acceptance Sampling)

4.10 Notice of Escape (NOE)

A Notice Of Escape is required from a supplier when it is discovered by the supplier that they unknowingly shipped product that does not meet the requirements of an FAI approved part. A NOE is required to be submitted within the first 24 hours of discovery of the problem to the ADM business unit of concern. The supplier shall identify all suspected lot identification information to include minimally (lot identifier /date codes / quantities, etc) and traceable to P.O.'s in the NOE along with all contact information. Suppliers form shall be acceptable if it meets these requirements. Suppliers are required to implement an immediate CAPA plan with a timeline. The plan shall be submitted to the ADM supplier quality manager and the commodity manager.

5. Cost of Poor Quality

All costs incurred by AD&M Business Unit that are associated with the failure of a supplier to meet AD&M Business Unit's quality requirements will be charged back to the responsible supplier. The following is a list of examples of COPQ (Cost of Poor Quality) charges. The list should not be construed as exhaustive:

Receiving Process

- Sorting
- Rework
- Line disruption
- Premium freight, and return freight to replace original lot defects
- Cost of increased inspection
- Premium product cost paid to support production
- Excess inventory
- Misidentified parts
- Shipping documentation errors
- Customs fees

In-Process Fallout

- Downtime
- Overtime
- Line speed reduction
- Additional manpower
- Line changes due to material availability
- Equipment breakage
- Associated material losses
- Outside processing required
- Premium product cost paid to support production
- Rework-labor, tooling, and fixturing
- Customs fees

Customer Issues

- Rework at customer premises, travel, manpower
- Replacement of material at customer
- Premium freight
- Reimbursement of all charges from customer
- Costs of Internal containment actions
- Added inspection, certification of product, etc.
- Warranty costs
- Customs fees

Calculations of hours / costs related to above will be determined with associated plant accounting function and the supplier shall be notified by the site procurement or supply chain representatives. Any costs related to sorting / rework will be calculated, and an estimation will be provided to the supplier before such activities take place to approve such actions.

6. Non Conformity and Corrective Action

The AD&M BU process for Nonconformity investigation and Corrective Action shall be done in accordance with TEC-1002 TE Complaint Handling System (TECHS). AD&M suppliers must meet these requirements through the use of the SNMS system and associated training as defined in the TE portal training program and outlined in section 2.13 (Supplier SNMS).

SQE's are responsible for follow up of all TECHS issued to suppliers, monitoring the responsiveness, and validating the effectiveness of the actions indicated in TECHS. SQE shall communicate with suppliers in a timely manner when a TECHS is generated and sent to suppliers.

All TECHS shall have containment (D3) within (24 hrs), a corrective action plan developed and submitted within (10) business days of receipt of defect samples (D5) and must have implementation and verification within (40) business days (D8). When TECHS cannot be closed within 40 days, extended corrective action verification information shall be detailed in the associated TECHS complaint with SQ management approval.

SQE's shall follow up periodically until closure. All correspondence with suppliers may or may not reside in TECHS, such correspondence includes and may not be limited to email, phone calls, meetings, visits, memos, etc. Key milestones and actions shall be documented on the plant FRB (Fast Response Board).

The PPSR (Practical Problem Solving Report) form or the 8-D Evaluation form, are tools that must be used by the supplier to document the closed loop 8-D process and should be referenced in the associated TECHS. The SQE will close the TECHS after review of supplier's submitted responses, evidence of action taken, and supporting documentation.

All suppliers for AD&M Business Unit must establish and maintain documented procedures for implementing a system for Non Conformity and Corrective Action with disciplined problem solving methods. This shall be used when a nonconformance to specification or requirements occurs.

Any corrective or preventive action taken to eliminate the causes of actual or potential non-conformities shall be appropriate to the magnitude of problems and commensurate with the risks encountered. The supplier shall implement and record any changes to the documented procedures resulting from corrective and preventive action. When supplier non-conformances are identified within an AD&M Business Unit Business Unit and are determined to be significant in nature, a TECHS complaint notice will be automatically initiated. The Corrective Action Request through the SNMS / TECHS system is completed by the supplier in the following steps below, on the TECHS form.

- D1- Identifiable team members: Identify the contact person (s) responsible for this TECHS corrective action if other than assignee
- D2- Definition / Description of the problem: A statement if the deficiency / condition as documented in the complaint, restated in terms of the supplier's process as necessary
- D3 – Containment Action (s): Action taken immediately upon identification of the potential noncompliance, such as rejections tags, line checks, legacy product in inventory, product in transit, or sub-supplier notification. Containment actions must be completed within 24 hrs.
- D4 – Identify and Verify Root Cause: The source or origin of the noncompliance, as well as any contributing factors involved. Should include the following three steps of root cause:
    1. Occurrence root cause: What process failure allowed the nonconformance to be generated?
    2. Escape root cause: What allowed the nonconforming product to escape the immediate process, subsequent process, and the supplier's facility
    3. Systematic root cause: What management systems allowed the nonconformance to be generated?

    D4 must be complete within 10 business days of receipt of sample, pictures or detailed description of supplier acknowledged defect
- D5 – Develop Corrective Action Plan: The supplier team must quantitatively confirm that the corrective and preventive actions will resolve the problem for the customer and will not cause undesirable side effects.
- D6 – Implement / Verify Corrective Action Plan. The remedial corrective action implemented to address the source or root cause of the noncompliance that will preclude recurrence are verified with documented data

- D7 – Prevent Recurrence: Preventive actions must include an evaluation of, and corrective action for, other processes or products where the same or similar defect could occur.
- D8 – Communicate Success: The supplier will provide periodic corrective action status reports if/as directed. Failure to respond to requests as required will result in procedural escalation to the appropriate AD&M Business Unit Manager or Supplier Quality Manager. Any questions are to be directed to the AD&M Business Unit SQE. Assignee's documented corrective action plan will be assigned to the responsible AD&M SQE for review of adequacy and effectiveness. This may require an on-site visit at the assignee's facilities. Assignee will be notified of acceptance or rejection of plan upon review.

Note: Suppliers should be cautious to avoid root causes of "operator error" and instead look deeper for underlying factors. If operator error is truly the cause, error-proofing actions must be employed to prevent recurrence; re-training alone is insufficient.

For product that has been found or suspected discrepant prior to shipment to AD&M Business Unit, all requests for deviations, approvals for repair or to be "used as is", must be submitted to AD&M Business Unit purchasing representative for approval. In addition, material must be held at the supplier's address pending receipt of documented AD&M Business Unit approval, prior to further processing and/or shipment of nonconforming material. For products identified or suspected as nonconforming returned from the customer's facility; performance testing; and/or the field, the analysis must determine the cause(s) of the nonconformance. Failure to respond to a corrective action request may result in penalties up to and including suspension and/or removal from the AD&M Business Unit Approved Supplier List (ASL). Parts or products removed from the normal process flow must be positively segregated and clearly marked in accordance with the requirements section 8.7 Control of Nonconforming Outputs in AS 9100.

- AD&M BU reserves the right to hold off payments on the materials that have past / overdue 8D / PPSR's or if supplier delay's or fails to respond to ADM 8D / PPSR request.

7. Supplier Development

Supplier development activities at AD&M Business Unit involve working closely with key suppliers to achieve the following supplier results:

- Process control improvement
- Quality system improvement
- Product quality improvement
- Delivery performance improvement
- Cost reduction
- Supply Chain effectiveness improvement
- Lead time improvement
- Productivity improvement
- Capacity increases
- Supply Chain optimization

The amount of supplier development activity varies within the AD&M Business Unit. The selection criteria for this activity includes, initiating and performing supplier development activities and project management, and should include the following activities:

- Procurement Management supplier scorecard rating
- Cross-functional teaming
- Project Selection
- Supplier Selection
- Pre-Audit – if evidence indicates clear shortfalls in systems or processes that could present risk to ADM
- Communicating and training the supplier on Lean and/or Six Sigma as necessary
- Gantt chart and RAIL of timeline and actions and owners
- Implementation

- Post Audit
- Analysis of Benefits

Management involvement from the supplier as well as the AD&M Business Unit business group site is vital to the success of the supplier development project. The AD&M Business Unit selects suppliers for development who present the best opportunity for improvement and the greatest potential impact to the organization.

Suppliers may be selected for development based on the following factors:

- Strategic growth suppliers
- Provider of critical parts
- Risk revenue partner
- Key to manufacturing flow
- Performance issues

Suppliers selected for development projects must have a willingness to change and improve and show evidence of internal continuous improvements efforts. Suppliers should also have adequate capability and systems such as:

- Approved quality system
- Material scheduling
- Cost tracking, etc.

Once a supplier has been selected, a cross-functional team consisting of appropriate AD&M Business Unit and supplier personnel will be formed to conduct a pre-audit (situation analysis) in order to gather and establish baseline data. The supplier may be trained on techniques for operational and process improvement as deemed appropriate. The team develops and implements the improvement plan. The AD&M Business Unit facilitates the supplier team through development and implementation of an improvement plan and ensures project implementation and completion. A post audit should be performed on all projects in order to verify improvement and follow-up actions.

8. Supplier Performance

AD&M Business Unit recognizes supplier quality achievement on a regular basis using measured results and takes the appropriate action regarding, expanded business or de-sourcing based on these results. An AD&M business unit supplier scorecard will be developed for the top suppliers following the guidelines of internal document TEC-1003 Supplier Performance Reporting and Continuous Improvement Process for Direct Material Suppliers and internal document TEC-1006 Total Quality Management Requirements for Suppliers. Several types of meetings may be held with suppliers including a Quarterly Supplier Performance Review of the supplier scorecard. The quality scorecard consists of:

- Quality, cost, delivery metrics tracked for strategic suppliers
- Supplier Scorecard – quarterly evaluation scoring summary
- Semi-Annual Review Items: quality, cost, delivery performance to goals, improvement opportunities, cost savings and value add opportunities, QMS certifications, and outstanding action items
- Supplier review records will be maintained by the AD&M BU
- Thresholds for supplier performance shall be defined annually by TE Global Procurement in accordance with section 7.2 (items A and B) of TEC-1003. Targets will be flowed down to the supplier by the procurement team.
- Supplier risk assessment

8.1 Focus Review

Suppliers who do not meet TE' performance expectations may be selected to participate in a monthly Supplier Focus Review meeting which could last up to 6 months. This process is designed to ~~drive~~ assist suppliers in identifying the systemic / management issues that are impacting quality and delivery, along with a step-down plan to achieve goals.

The planned outcome of the Focus Review Meeting is a mutually agreed ~~to~~ step down plan with realistic goals and targets against which the supplier is monitored by effectively closing the gap on quality and delivery metrics. Criteria for entry and exit will be shared by the SQE, at the meeting invitation.

9. Continuous Improvement

TE Connectivity globally supports and requires Continuous Improvement internally as well as externally. The AD&M Business Unit quality function requires all suppliers to pursue Continuous Improvement initiatives. These initiatives should be carried out in accordance with TE Connectivity LEAN processes. The deployment of these initiatives is the responsibility of AD&M Business Unit's suppliers.

LEAN Process Tools

The following is a list of LEAN process tools utilized within TE. Supplier's quality management systems should use these as a guideline for supplier initiated continuous improvement activities:

Lean Enterprise Accelerated New Product Development Process (LEANPD)

- LEANPD – Development Execution
- LEANPD –Specific Development Execution Requirements
- LEANPD – Product Requirements Documents (PRD), Preparation of
- LEANPD – Project Mapping of Lessons Learned
- 5S +1 Assessment and Improvement Methodology
- Implementing Cell Design
- Kaizen Events
- Kanban, Supermarkets and Material Replenishment
- QCPC: Quality Control / Process Control For Manufacturing Operations
- Quick Changeover
- Visual Factory for Workplace Improvement
- Total Productive Maintenance
- Standard Work Assessment and Improvement Methodology

10. Definitions

- Control Plan / QIP (Quality Inspection Plan)

  Written description of the system for controlling processes that produce products for AD&M Business Unit. Suppliers must establish a control plan / QIP for each new product and address all significant and key characteristics, process parameters and performance tests.

- TECHS

  TE Complaint Handling System (TECHS) is a method by which all non-conforming quality conditions are reported to the supplier and corrective action is requested.

- Functional Check

  Evaluation performed on initial samples by some AD&M Business Unit facilities to ensure that the samples can be assembled properly and conform to operational requirements. The engineering sample evaluation report is utilized for this approval.

- Process Change

  Change in a process that could alter its capability to meet design requirements or durability of a product. This includes:

  (1) new, different, relocated or rehabilitated production machinery/equipment;

  (2) any change in subcontracted products or services including the use of engineering-approved alternate materials; or

  (3) changes to rework methods. Process change also includes changes in the sequence of operations and chemical compounds such as adhesives, sealers, lubricants, etc., which are parts of the product. Contact your AD&M Business Unit business group representative for further definition.

- Key Product Characteristics

  Characteristics designated in the Design Record (drawings and specifications) that, with reasonable anticipated variation, could significantly affect a product's safety or compliance with applicable standards or regulations and/or is likely to significantly affect customer satisfaction with a product. Key Characteristics may be described by the engineering teams in various AD&M Business Unit businesses as 'critical' or 'significant' and may be designated by those teams with defined symbols on product drawings, engineering and quality specifications (see 407-55 Key Characteristics (Special Characteristics / AS 9103 Variation Management of Key Characteristics).

- Quality System Assessment (QSA)

  Multi-part questionnaire used by an auditing team during an on-site visit to verify a supplier's effective implementation of a quality systems and environmental compliance

Revision updates

Changes	Originator	Date & Rev
Multiple	N. DiCintio	Sep 2017 Rev C1
1.2, 2, 2.1, 2.5, 2.7, 2.8, 2.9, 2.10, 2.12, 2.14-c, 2.14-d, 2.14-e, 2.16, 2.17, 2.18, 3.1, 3.2, 3.3, 4.1, 4.2, 4.3, 4.4, 4.5, 4.7, 4.8, 4.9, 4.10, 5.0, 6.0, 7.0, 8.0	W. Bradford	May 2020 Rev D.2
Update section 4.2 Proposed change to 102-32029. Adding how the supplier dispositions records after the retention period	Karen Duncan	Jan 23 2023 E
Updated section 1.3 – Supplier Responsibilities to outline the flow down requirements to suppliers	Simon Simonovski	Feb 19 2025 F