Manufacturing Management External Provider Requirements

Copies of Aerospace Standards (AS/EN documents) from the Society of Automotive Engineers may be obtained at www.sae.org.

1. Quality Requirements

External Provider shall meet the requirements of the latest revision of QA022-03 and all applicable requirements therein in effect as of the date of this PO. External Provider shall:

a. Ensure all applicable QA022-03 requirements herein and other quality requirements in this PO are imposed upon

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5. Sale, Relocation, Closure or Transfer of Manufacturing Operations

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

a. Purpose of the relocation.

b. Address of the new location(s).

c. Assessment of actual or potential impact to current PO's.

d. Risk mitigation plan to ensure compliance to existing requirements.

e. Plan defining the identification, storage, protection, retrieval and retention of records.

f. Master schedule and timeline of relocation activities.

g. Relocation Coordinator/Point of Contact.

6. Language

External Provider documents and records submitted to Buyer shall be in English.

7. Competence, Awareness & Communication

External Provider shall ensure that its personnel have the required training and experience appropriate with the requirements necessary for the performance of this PO.

a. Their contribution to product or service conformity.

b. Their contribution to product safety.

c. The importance of ethical behavior.

8. Foreign Object Damage (FOD) Prevention

a. External Provider shall maintain a FOD prevention program in accordance with National Aerospace Standard AS9146, Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, and Defense Organizations.

b. Whenever or wherever Foreign Object Debris (FOD) can be entrapped or Foreign Objects (FO) can migrate, External Provider shall ensure that applicable requirements are flowed down to External Provider's subcontractors at every tier.

c. Prior to closing inaccessible or obscured areas and compartments during assembly, External Provider shall inspect for foreign objects/materials and ensure no FOD barriers remain embedded, e.g. embedded protective plugs. External Provider shall ensure tooling, jigs, fixtures, and test or handling equipment are maintained in a state of cleanliness and repair sufficient to prevent FOD.

d. By delivering Items to Buyer, External Provider shall be deemed to have certified to Buyer that such Items and packaging are free from any FO / FOD.

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9. Prevention of Counterfeit Parts

a. For purposes of this clause:

1. Work -

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c. External Provider shall only purchase product to be delivered to Buyer as Work directly from Authorized Sources of Supply. Authorized Sources of Supply include: The Original Manufacturer (OM) of the product, including mills and foundries, and Authorized Aftermarket Manufacturer (AAM) of the product, their Authorized Suppliers (AS), or suppliers that obtain such product exclusively from the OM/AAM/AS. If External Provider is unable to acquire product from the OM/AAM/AS because of non-availability from such sources, External Provider may obtain product from another source only if External Provider's inspection and other counterfeit risk mitigation processes are employed to ensure the authenticity of the Work, and External Provider has received advanced written approval from the Buyer. External Provider is responsible for the authenticity of all product provided to Buyer and evidence of authenticity is subject to review by the Buyer and its customer upon request.

d. External Provider's processes shall include the means to provide to the SQE and Buyer, upon request, the supply chain traceability from the OM/AAM, including mills and foundries, to product acceptance by Buyer, including the name and location of all the supply chain intermediaries. If traceability is not obtainable External Provider shall provide written notice to the SQE and Buyer prior to delivery that includes records of evidentiary tests and inspections of authenticity in accordance with existing applicable industry standards. External Provider shall maintain documentation of traceability or the inspection and testing authentication required and make such documentation available to Buyer and its customer upon request

e. External Provider shall notify the SQE and buyer of the pertinent facts of a nonconformance in accordance with Section 17, if External Provider becomes aware or suspects that it has furnished Counterfeit Work. Suspect counterfeit product shall be treated as Nonconforming Items as they relate to the External Provider notification process in accordance with Section17, including the quarantining and reporting of suspect product.

f. External Provider shall include this clause or equivalent provisions in lower tier subcontracts for the delivery of product that will be included in or furnished as Work to Buyer.

10. Government - Industry Data Exchange Program (GIDEP) Membership

External Providers eligible for utilization of the Government-Industry Data Exchange Program (GIDEP) shall utilize the GIDEP process to alert the industry of encountered counterfeit parts

11.

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i. How key sources of variation in the manufacturing processes will be controlled (statistical process control, control of key process input variables, or other techniques).
ii. How data will be collected, analyzed, and used.

b. Design and Development Outputs
   1. The organization shall ensure that design and development outputs:
      i. Meet the input requirements.
      ii. Are adequate for the subsequent processes for the provision of products and services.
      iii. Include or reference monitoring and measuring requirements, as appropriate, and acceptance criteria.
      iv. Specify the characteristics of products and services that are essential for their intended purpose and their safe and proper provision.
      v. Specify, as applicable, any critical items, including any key characteristics, and specific actions to be taken for these items.
      vi. Are approved by authorized person(s) prior to release.
   2. The organization shall define the data required to allow the product to be identified, manufactured, verified, used, and maintained.

c. Process Capability
   1. The External Provider shall analyze process capabilities for each critical manufacturing process. The External Provider should use statistical tools to minimize variability and calculate the process capability index (Cpk), if applicable
      i. Cpk goals shall be identified for each critical manufacturing process.
      ii. Process capability data shall be utilized in developing manufacturing instructions for the product.
      iii. The capability indices of all critical manufacturing processes shall be tracked and improvement actions instituted for processes with low yields or unacceptable variation and targets shall be established for process yields
      iv. Acceptability of Cpk shall be based on statistically sound data, considering impacts on producibility, cost, and quality.

d. Production Process Verification (PPV)
   1. The External Provider shall conduct PPVs to verify that manufacturing processes, documentation, and tooling are statistically capable of producing parts and assemblies that meet requirements.
   2. External Provider shall document the Production Process Verification on LM Form QA022-03-1 (or equivalent).

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23. Improvement

a. The External Provider shall determine and select opportunities for improvement and implement any necessary actions to meet customer requirements and enhance customer satisfaction. These shall include:

1. Improving products and services to meet requirements as well as to address future needs and expectations.
2. Correcting, preventing, or reducing undesired effects.
3. Improving the performance and effectiveness of the quality management system.
4.

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i. Requests for interpretation of requirements regarding material, furnished tooling, tool designs, engineering documents, PO requirements, or Buyer direction is conflicting or unclear shall be processed by the supplier creating a Supplier Problem and Resolution (ESPaR) and submit to LM Aero for disposition utilizing the LM Aero Supply Chain Management external website.

ii. Requests for disposition of material determined to be nonconforming shall be processed by the supplier creating as Supplier Quality Assurance Record (SQAR) and submit to LM Aero for disposition utilizing the LM Aero Supply Chain

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8. Sub-Tier External Provider – For the purposes of this document, sub-tier External Provider shall include all entities that perform manufacturing, assembly, testing and inspection work for External Provider, including, but not limited to, sub-tier External Providers at all levels, subcontractors, special processors, feeder plants, other External Provider manufacturing sites, partners, etc.
9. Technical Data Package (TDP) – The complete set of technical requirements necessary to communicate design intent. A TDP may include but is not limited to only: drawings, performance-based specifications, Digital Production Definition (DPD) media and process specifications

d. General Requirements:

1. External Provider shall notify Buyer's assigned Supplier Quality Engineer (SQE), in writing, a minimum of five (5) business days prior to:
    i. External Provider procuring items or beginning any FAI Planning activity for the PO.
    ii. External Provider's inte612 7929.21F2 11.]TETQq0.6(ofQq0 1 160.2q02Tf1 0 0 1(t)6(rt-308((

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iii. Any physical location changes of manufacturing or inspection equipment or relocation of tooling.

iv. Nonconformances to Buyer requirements discovered after completion of an FAI.

7. The following items do not require FAI, unless otherwise directed by Buyer:

   i. Standard hardware and electronic piece parts (e.g., AN, MS and NAS standards; C, M & P standards; 2GNA00001 standard parts; etc.).

   ii. Commercial off-the-shelf (COTS) items.

   iii. Metallic raw material (e.g., plate, bar, rod, etc.) and non-metallic raw material (e.g., paints, sealants, adhesives, etc.).

   iv. Engineering models, design/concept prototypes, etc.

   v. Government furnished materials

   vi. Items returned to External Provider for repair or rework.

   vii. Items bought as spares.

   viii. Items procured to Buyer's part number where Buyer has not developed drawings or specifications controlling the item's physical and functional requirements.

   ix. Special Tooling and Perishable Tooling.

8. For major aircraft assemblies (i.e., wings, fuselages, empennages, tails, etc.) External Provider is only required to complete the FAI Planning section of the FAI in Detailed Requirements section below (section e.1), unless otherwise directed in the PO. All constituent detail components and sub-assemblies within the above major aircraft assemblies that are manufactured, processed, tested or inspected by sub-tier External Providers will require full compliance to AS9102.

9. FAI by similarity will be accomplished per AS9102. An FAI by similarity requires a previously completed FAI on parts with identical characteristics of similar parts produced by identical means with no history of nonconformances. FAI by similarity shall be approved in advance in writing by Buyer's assigned SQE. FAI by similarity is not allowed for critical items.

10. Any discrepancies or nonconformances to Buyer's requirements discovered during the FAI shall result in the failure of the FAI or "not complete" as defined in AS9102. This shall extend to any parts found nonconforming if the FAI part was selected from a batch or production run. External Provider shall determine root cause and take corrective action for any nonconformance to Buyer requirements dis5(st)-4(i)5(cs)-264(o)13(f)-4(

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11. External Provider shall comply with the forms usage and completion requirements of AS9102. Customer approval block Date block shall be signed and completed by the buyer External Provider quality representative prior to release for shipment.
12. External Provider shall maintain documentation of FAI results on each deliverable end item for the period specified by the PO. External Provider shall provide a complete copy of FAI reports, including those of sub-tier suppliers, to Buyer upon request.
    i. Note: FAI for follow on POs need not be re-accomplished if there has been no lapse in production (reference d.7.v

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appropriate level of detail and clarity. The review shall include production and inspection steps. Ensure inspection steps have appropriate measurement or sampling plans.

vi.