

**Applied Engineering, Inc, and
Aviation Manufacturing Group LLC dba The Freeman Company (“Buyer”)**

Seller Quality Requirements of Purchased Product and Services

Supplier Quality Clause Matrix

<i>Supplier Classification</i>	<i>Applicable Supplier Quality Clauses</i>
Distributor	Q1, Q3, Q5, Q7, Q8, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q48
Manufacture Source Control	Q1, Q2, Q3, Q4, Q5, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41 Q42, Q43, Q44, Q45, Q48
Manufacture to Print	Q1, Q2, Q3, Q4, Q5, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q36, Q35, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q48
Special Process (Outside Process)	Q1, Q2, Q3, Q5, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q48
Raw Material	Q1, Q3, Q4, Q5, Q6, Q7, Q8, Q11, Q13, Q14, Q17, Q18, Q19, Q21, Q23, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44
Calibration	Q1, Q5, Q7, Q17, Q18, Q19, Q21, Q24, Q25, Q27, Q28, Q30, Q31, Q32, Q33, Q34, Q35, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q48
MRO	Q1, Q18, Q19, Q27, Q31, Q34, Q38 Q40, Q41

Q1 General Requirements:

These requirements apply to the Seller and sub-tiers of purchased products or services furnished to the Buyer. In the event of a conflict, the purchase order precedence, followed by the requirements herein, and the Terms and Conditions of Purchase. Purchased products or processes must conform to the latest revision level of the applicable Specification unless otherwise stated in the purchase order. Seller ensures that all personnel within the organization are aware of the importance of ethical behavior and their contribution to the quality, conformity, and product safety of the products or services provided. Seller must flow-down to their sub-tier(s) the applicable requirements including, key characteristics.

All communications and documented information are to be in English.

AEI/TFC has in place an Affirmative Action Plan (AAP) reaffirming its commitment to the spirit and letter of affirmative action law, including those administered by the U. S. Department of Labor's Office of Federal Contract Compliance Programs. Through the implementation of this plan, AEI/TFC continues its efforts to comply with appropriate government regulations and to make the best possible use of personnel while contributing to the betterment of society and the community

Q2 Special Processes:

Special processes such as, but not limited to, welding, heat treat, plating, painting, NDT testing, EDM, elastomeric, etching, and passivation must be performed by Nadcap approved processors or approved processors as authorized by the end user. Certifications for special process services must accompany each shipment and identify the following:

- Process performed
- Specification/drawing and revision level
- Purchase order number and line
- Part number, quantity, and revision
- Compliance with the requirement and acceptance criteria
- Ultrasonic scan plans (when applicable)
- Radiographic X-rays (when applicable)
- Bismuth content (when applicable)
- The purity of the plated tin (when applicable)
- Measured thickness of deposited materials (when applicable)
- Adhesion test results (when applicable)

▪ Material/Process Samples:

A representative material test sample for heat treat, weld, and recast processes must be maintained by the Seller and made available upon request.

▪ Unique Heat Lot Control:

Only one heat lot of material is to be used in the production of any individual detail or part. Materials must be segregated by heat lot and packaged separately.

▪ **Brazing/Welding Approvals:** The procedure used and a representative sample of actual joint configuration must be submitted for approval prior to production.

Q3 Seller Quality System:

Seller shall maintain a Quality System, ISO 9001, AS9100, or Nadcap, which assures compliance with supplied documentation, including the purchase order, drawings, and specifications, and inform Buyer in writing within 72 hours of any major change which could impact the Buyer, including but not limited to: change in management (including quality manager); merger/acquisition, change of shareholder; changes to certification or accreditation; significant out of tolerance calibrated equipment; infrastructure or industrial model; change of information systems, e.g. ERP and PLC management, violation of IT security systems.

Q4 Domestic Materials: DFAR 252.225-(7000-7050)

Specialty metals used in deliverable product shall be melted in the **United States** or a **qualifying country** as indicated in subsection 225.872-1 of the DFAR supplement.

Q5 Safeguarding Covered Defense Information Controls

DFARS 252.204-7009; Compliance with Safeguarding Covered Defense Information Controls and limitations on the use or disclosure of third-party contractor reported cyber incident information; DFARS 252.204-7012, Safeguarding Covered Defense Information and Cyber Incident Reporting (with reporting of cyber incidents directly to DoD and to Buyer).

Q6 Material Saw Cut Tolerance

Unless indicated otherwise in the purchase order part description, all saw cut tolerances must be +.030/-.000 and all cuts must be made on a plate or extrusion saw.

Q7 Certification of Conformance (C of C):

Seller shall submit with each shipment a legible, typed or printed, reproducible Certificate of Conformance (C of C) stating the items listed thereon comply with all purchase order requirements. The C of C must include:

- Seller name
- Authorizing signature with title
- Date
- Purchase order number and line
- Part number, quantity, and revision

Certification Requirements for Repair/Calibration Test Equipment

- The type, model, and serial number of the instrument calibrated.
- The calibration date and due date of calibration.
- Calibration System requirements shall meet ANSI Z540-1 superseded by ANSI Z540-3 superseded by ISO/IEC17025.
- Certification to include reference to the Calibration Procedure used (along with the revision)
- Certification to include reference to the Calibration Standard used including its respective calibration due date.
- Environmental conditions (temperature and humidity)
- Certification to include a statement as to whether the item being calibrated was received in or out of tolerance. The certification shall state the as found and after calibration readings taken.
- The accuracy of the instrument being calibrated shall be referenced on the certification.
- Measurement Uncertainty estimations shall be recorded. All known sources of measurement variability shall be documented.

▪ **Functional Test Reports:**

The Seller must include, where applicable, a report listing actual test results with each lot of product.

▪ **Material Certification (Non-Metals, Commercial, Proprietary):**

Material certifications must be included with each shipment. The certification must include:

- Material description
- Trade name
- Manufacturer
- Specification number, type, grade, class, etc.
- Manufacturer part number, batch, and heat lot number if applicable

▪ **Chemical and Physical Test Reports (Raw Material):**

Chemical and physical test reports must be included with each shipment. The report must include:

- Batch, heat, or lot number
- Material specification and revision
- Certification of the composition, within acceptable limits, where MIL reports are not available (metals require specific values of composition)
- Tensile, yield, and elongation

Q8 Nondestructive Testing (NDT): (See Q2)

Nondestructive testing shall be performed in accordance with Nadcap processes. Seller must keep a copy of approved Procedures on file at all times. Each shipment must be accompanied by a certified test report for the test performed. The reports must specify the test performed, specification, specification revision, test method, approved test procedure (with number and revision), and the acceptance criteria utilized. Operators performing NDT must be properly qualified and certified. The certification must include:

- Operator name (typed or printed)
- Organizational title
- Signature of the authorized representative
- Part number
- Heat (as applicable) and purchase order number
- Material identification, revision, and date

Q9 Plating Certifications and Process:

The Seller performing the plating shall prepare a certificate documenting plating was performed in accordance with drawing, specification and purchase order requirements. Certification must include actual measured results verifying thickness and metallurgical composition or other stated requirements. The stated readings on the certification must be from a minimum of one part or coupon from each process load (taken from 5 locations on a part/coupon) or the quantity required by the specification or purchase order (whichever is greater). Equipment used to verify plating thickness must be calibrated and validated on a set schedule against certified standards that are appropriate to the plating process. Seller must notify Buyer prior to supplying product in which a process change was made in the plating, validation, and calibration process. This includes any revisions or upgrades to the calibration or validation software. The Seller must deliver product that has been produced at the same facility using the same process. Buyer must be notified prior to a significant process change, including, but not limited to:

- Change of chemical supplier or product
- Movement to a different process line within the same facility or a different location
- Modification of the racking process
- Change to rinse or seal process

Seller is responsible for all costs incurred resulting from changes implemented without buyer approval.

Seller must process coupons for tests required per the applicable specification(s). Coupons must be retained by processor unless stated in the purchase order.

Q10 Chromate Conversion Coatings:

Materials for coating application shall be procured from approved QPL-81706 sources. Seller must have documentation for each batch of material to validate and provide material certs upon Buyer request.

Q11 Approved Sources:

The end customer may require processing by an approved source. When applicable, the buyer purchase order will specify the approved source.

Q12 First Article, Inspection, and Reports:

First Article inspection shall be approved by the Buyer prior to shipment for all initial orders, when the manufacturing method changes, or when a revision change is made. The first article part must be clearly identified, and FAIR documentation must be reported in accordance with AS9102.

Buyer reserves the right to invoke requirements for Statistical FAI (sFAI). This may be invoked through, but not limited to, work transitions, new product introduction, or if a part or site has a history of dimensional escapes. The Statistical FAI requires that every quantitative feature on the design blueprint be measured on a 25-piece sample.

A machine capability study should be used for dimensions produced by the same machine and process as an alternative to measuring every dimension on a specific part number and be defined by AS9103.

Statistical FAI does not apply to categorical (attribute) features that have either binary (i.e., presence or absence) or a fixed number of values (i.e., count).

Q13 Product identified as PMA product is not allowed unless specifically flowed as an exemption on the purchase order.

Q14 Tensile Coupons:

Representative samples of materials used to produce hardware, in final heat-treated condition, must remain on file and a certification sent with each shipment identifying the heat lot. Samples must be in accordance with ASTM-E-8 unless otherwise specified.

Q15 Key Characteristics:

When applicable, Key Characteristics are specified on the purchase order or drawing. Suppliers shall perform Measurement System Analysis (MSA) on all measurement systems used to measure Product Key Characteristics (KCs) as defined in AS9103. Data on Key Characteristics must be documented and supplied with each shipment.

Q16 Hydrogen Embrittlement Test Report:

A hydrogen embrittlement test report is required and must comply with AMS-QQ-P-416. Fasteners must pass the stress durability test in accordance with MIL-STD- 312-5, using the external load method. Sufficient external load must be applied to the fastener to develop an induced load of 75-80% of the minimum tensile strength specified for duration of not less than 72 hours (MIL-STD-783 bolts require the same load, however, the duration period is reduced to 24 hours of test time). Sampling must be per FF-S-86 Rev E (1) Para. 4.2.3. Fasteners selected for test must not be submitted for acceptance. Test reports must be identifiable to the materials submitted and must include batch, heat, and lot number.

Q17 Personnel and Training:

Supplier shall ensure that the personnel involved in the manufacture and inspection of the materials or components are qualified to perform their tasks. Training records must be available upon request. This includes eye exams every 12 months for near vision to Snellen 14/18 or better or Jaeger Type 1 20/25, and color vision using the required Pseudo chromatic plates or similar.

Q18 Foreign Object Damage (FOD):

Sellers shall ensure that foreign objects are eliminated from parts prior to shipment. Sellers must maintain a FOD program/policy based upon NAS412 and/or AS9146 that includes a FOD free environment during machining, manufacturing, processing, assembly, inspection, internal transportation, storage, packaging, and shipment.

Q19 Mercury Free Certification:

Product furnished shall be free from contamination by the presence of mercury. Compliance with this requirement must be certified by the Seller.

Q20 Statistical Process Control (SPC):

When SPC is required, a Buyer approved SPC program must be used. Control charts on key dimensional characteristics are required with each shipment.

Q21 Traceability of Furnished Materials:

Material substitution is not allowed. Assigned lot numbers or serial numbers must be maintained and referenced in all documentation as applicable. Drop shipped materials must be verified by certification prior to use. It is the Seller responsibility to assure the material supplied is from the lot stated on the mill certification(s) supplied with each delivery. Seller will be responsible for monetary damages incurred by Buyer for any losses or damage arising from the manufacture and subsequent delivery & use of the manufactured component from the incorrect or misrepresented product. Heat lots must not be mixed. A lot consists of one of the following methods:

- Batch melt material cast at the same time from the same furnace and identified with the same heat number.
- Continuous melt material poured without interruption. (ref. SAE ARP1917 Rev. A)
- Drop number (aluminum wrought product) sequential identification number of aluminum ingots poured simultaneously from the same cast.
- Cast number (aluminum wrought product) sequential identification of aluminum ingot/billet of the same alloy melted and poured in one or more drops without change in processing parameters.
- A lot shall consist of all raw material submitted for inspection at the same time, the same lot number, condition, finish, size, or shape.

Q22 Fastener Quality Act:

To the extent it is applicable to Sellers products, Seller shall at all times be in compliance with the Fastener Quality Act (Public Law 101-592 as amended by P.L. 104-113 and P.L. 105-234 and P.L. 106-34) as amended from time to time(the "Act").

Q23 Manned Space Flight:

Materials, manufacturing, and workmanship are to be of the highest standards to ensure astronaut safety. Notify the Buyer if the product may be produced of a higher quality than specified on the purchase order.

Q24 Age Controlled Materials:

Age controlled materials shall conform to applicable specifications, the Buyer reserves the right to reject material with less than 50% of the remaining shelf-life, unless otherwise noted on the purchase order. Each container must identify:

- Manufacturer name
- Batch number
- Storage temperature
- Compound number
- Date of manufacture
- Shelf life

Q25 Inspection Sampling:

Seller may select to sample inspect the product and reject the lot on the first nonconformity detected (C=0). Product acceptance inspection shall be 100% for all characteristics until the inspection requirements of AS9138 have been achieved. Sampling inspection must be Buyer approved prior to use, be statistically valid, appropriate for use, and preclude the acceptance of known non-conformances. When statistical process control is used for either in-process or final inspection it must satisfy AS9138 or another Buyer approved industry standard.

Q26 Dimensional Inspection Reports:

A dimensional report is required to ANSI/ASQ Z1.4 AQL .65%, C=0 for all characteristics of .005 or less total drawing tolerance. Material hardness readings are required. Actual reading as specified on the drawing or purchase order must be taken and recorded.

Q27 Shipments:

A packing list shall be enclosed with all shipments. Seller must mark containers or packages with applicable lifting, loading, and shipping information, and the bill of lading must include the purchase order number.

Q28 Right of Entry / Inspection:

Buyer and its customer reserve the right to perform any inspection and test deemed necessary to assure product conformance at the Seller facility.

Q29 MRB Authority:

Seller is expressly denied MRB authority. Material found out of specification may be scrapped or reworked, but not repaired. MRB requests must be in writing to the Buyer.

Q30 Calibration System:

The Seller calibration system shall conform to the requirements of ANSI/NCSL Z540 at a minimum or be accredited to ISO/IEC-17025 Calibration systems and will be subject to inspection and approval by the Buyer.

Q31 Use of Seller Devices:

Gauges, measuring and test devices shall be made available for reasonable Buyer use when required to determine quality of product. As conditions warrant, Seller's personnel must be made available for operation of such devices and product verifications.

Q32 Nonconforming Material:

Buyer shall be notified within 24 hours of the discovery of a discrepancy, non-conformance, or potential quality escape. The notification must include the purchase order, quantity, date, and containment activities. Further corrective action may be required. Nonconforming material must be tagged and held until material disposition has been received. The Seller must specify whether parts involved in a nonconformance were reworked or replaced and subsequently re-inspected.

Q33 Record Retention:

Seller shall retain, and make available upon a 24 hour request, quality records for a minimum of 11 years, life of contract (if greater), or Collins Aerospace (formerly UTC or Hamilton Sundstrand) material identified as "Flight Safety" for 40 years. Records must be destroyed at the end of the retention period by shredding, burning or overwriting of the digital media.

Q34 Testing Acceptance:

Sellers using acceptance testing as a requirement, shall define and submit for approval the test procedure, test characteristics, and test set-up, once approved, the plan is considered frozen and any changes must be approved by the Buyer.

Q35 Handling, Packaging, and Delivery:

Seller shall handle and transport products to preclude damage during processing. If material is received in damaged condition it must be handled as nonconforming material. Seller must package product sufficiently to preclude damage from shipping or return product in same containers, packing material and shipping method provided by the Buyer.

Q36 Handling ESD Sensitive Items:

ESD items must be ESD protected and labeled as ESD sensitive. Certifications indicating all items supplied were handled at certified ESD workstations is required with each shipment.

Q37 Tier One Requirements:

HONEYWELL SPOC REQUIREMENTS: If purchased product is identified to be for Honeywell or any of its affiliated companies the following SPOC requirements apply; (Section 1.0), SPOC100, SPOC106, (SPOC 124 & 128 & SPOC165 (N/A to COTS / Std. catalog items), SPOC 140, SPOC 142, SPOC200, SPOC 239, SPOC267, SPOC354, SPOC 418 SPOC419. Any special processes such as heat treat, penetrant inspection, passivation, paint, anodize or other finishing that is considered a controlled process must be processed by a Honeywell APSL Seller. Current revisions of these documents are available from the Buyer upon request. First article inspections are required with first delivery IAW AS9102 or submitted via Net-Inspect

Boeing Aircraft Company (BAC)/Boeing Commercial Airplanes (BCA): If purchased product is identified to be for Boeing or any of its affiliated companies, Seller and all members of their supply chain must be compliant with all applicable quality management system requirements to D6-82479, D6-87282, and D6-51991. Seller must use D1-4426 for consideration of specifications requiring approved process sources and must be processed by a provider listed in D1-4426. This includes raw material and ingot suppliers. Current revisions of these documents are available from the Buyer upon request. First article inspections are required with first delivery IAW AS9102 or submitted via Net-Inspect.

Collins Power and Controls (formerly UTC Aerospace Systems): Seller & all members of their supply chain must be compliant with all applicable quality management system requirements, ASQR-01, COL-ASQR-PRO-0003, HSM17, HSM19, HS14722, AS9100 or AS9120. If part drawing or process is identified on PO as "Flight Safety" the requirements of ASQR-09.1 apply. Special processes such as heat treat, penetrant inspection, passivation, paint, anodize or other finishing that is considered a controlled process must be processed by a Seller listed Report 80 or 85 and Nadcap accredited. Current revisions of these documents are available from the Buyer upon request. First article inspections are required with first delivery IAW, ASQR-01, AS9102, HSER33531.

Collins Aerostructures (formerly Goodrich-Rohr): Seller & all members of their supply chain must be compliant with all applicable quality management system requirements, ASQR-01, COL-ASQR-PRO-0003, ASQR-01-AA, AS9100 or AS9120. Seller must use distributors listed in RTX QDL per ASQR-01. Special processes listed in RPS 1.000-2 such as heat treat, penetrant inspection, passivation, paint, anodize or other finishing that is considered a controlled process must be processed by a provider listed in the QSD for controlled processes and must be Nadcap accredited. Current revisions of these documents are available from the Buyer upon request. First article inspections are required with first delivery IAW, ASQR-01, AS9102, ASGSQR-001

All domestic mills for non-titanium orders are acceptable. If the *ingot* is foreign, see Boeing's D1-4426 list and select the specification and process code to verify an approved foreign supplier. ***For titanium*** titanium must be on the D1-4426 listing regardless of country.*** The D1-4426 may be accessed at this link:

<http://active.boeing.com/doingbiz/d14426/specindex.cfm?specprefix=a>

Q38 Contractor Policy To Ban Text Messaging While Driving (SEPT 2010):

(a) Definitions, as used in this clause - "DRIVING" (1) Means operation a motor vehicle on an active roadway with the motor running, including while temporarily stationary because of traffic, a traffic light, stop sign or otherwise. (2) Does not include operating a motor vehicle with or without the motor running when one has pulled over to the side of, of off, an active roadway and has halted in a location where one can safely remain stationary. "TEXT MESSAGING" (1) Means reading from or entering data into any handheld or other electronic device, including for the purpose of short message service texting, e-mailing, instant messaging, obtaining navigational information, or engaging in any other form of electronic data retrieval or electronic communication. The term does not include glancing at or listening to a navigational device that is secured in a commercially designed holder affixed to the vehicle, provided that the destination and route are programmed into the device either before driving or while stopped in a location off the roadway where it is safe and legal to park. (b) This clause implements Executive Order 13513, Federal Leadership on reducing text messaging while driving, dated October 1, 2009. (c) The contractor should - (1) Adopt and enforce policies that ban text messaging while driving - (i) Company-owned or - rented vehicles or Government-owned vehicles; or (ii) Privately - owned vehicles when on official Government business or when performing any work for or on behalf of the Government. (2) Conduct initiatives in a manner commensurate with the size of the business, such as - (i) establishment of new rules and programs or re-evaluation of existing programs to prohibit text messaging while driving; and (ii) Education, awareness, and other outreach to employees about the safety risks associated with texting while driving. (d) Subcontracts. The contractor shall insert the substance of this clause, including this paragraph (d) in all subcontracts that exceed the micro-purchase threshold.

Q39 Instrument Calibration:

Instruments shall be calibrated in accordance with manufacturer's instructions, with traceability to N.I.S.T standards.

- Whenever an instrument is received with an out-of-tolerance condition the using agency shall be notified immediately by fax or phone call.
- B) Calibration shall verify that the instrument is accurate within all of the instrument's usable ranges. Calibrations must adequately cover full range of use to assure equipment accuracy is adequate at point where measurements are taken.
- C) The measurement uncertainty shall be estimated for each measurement process covered by the measurement management system. The analysis of measurement uncertainties shall be completed before the metrological confirmation of the measuring equipment, and the validation of the measurement process.

Q40 Compliance with Environmental, Health and Safety Laws:

Seller will comply with all applicable national, EU, state/provincial and local environmental, health and safety laws, regulations or directives. Additionally, Seller must have a management system dedicated to compliance with applicable environmental, health, and safety laws and regulations to ensure a safe working environment for their employees and responsible care of materials to prevent a negative impact on the environment. Upon request, in form and substance satisfactory to enable Buyer to meet its compliance obligations with regard to Regulation (EC) No. 1907/2006 ("REACH") or similar laws or regulations identified by Buyer. Seller will provide Buyer with complete information regarding the chemical composition (substances, preparations, mixtures, alloys or goods) of any Goods supplied under the Contract or a Purchase Order including all safety information required under REACH and information regarding the registration or preregistration status of any Goods pursuant to REACH within 45 days of receiving such request. Seller agrees that it will include any Buyer "Identified Use" in its REACH registrations or applications for authorization, unless Seller provides Notice to Buyer that it rejects such Identified Use in order to protect human health or the environment and specifies the reason for such rejection. In such case, Buyer will have the right to terminate any applicable Purchase Order without incurring any costs or damages. Additionally, Seller must inform Buyer upon request, current Goods status with regards to the use of materials identified in Article 4.1 of the European Parliament Directive 2011/65/EU ("RoHS Directive") as that RoHS Directive is updated from time to time, or similar laws or regulations identified by Buyer, restricting the use of hazardous materials in other jurisdictions. Goods will not include any of the restricted chemicals set forth in the Montreal Protocol on ozone-depleting substances. Seller must avoid the use of hazardous materials in the Goods provided to Buyer including but not limited to Persistent Bio accumulative Toxic (PBT) substances, Persistent Organic Pollutants (POPs) (e.g. PCBs, mercury, certain insecticides-DDT, Chlordane, etc.), Carcinogens (known or suspected), Mutagens, Radioactive Materials, Reproductive toxins, Beryllium, Hexavalent Chromium, Asbestos or other respirable fibers, Ozone depleting substances, Brominated flame retardants, or Nanoparticles. Seller will be responsible for all costs and liabilities for or relating to the disposal and recycling of Seller materials, waste, and products.

Q41 Notice of Delay:

Delay, threat of delay, or permanent delay impacts the timely performance of the Contract or a Purchase Order, Seller must immediately provide notice to Buyer in writing of all relevant information with respect to such delay, including but not limited to the reasons for the potential delay and Sellers short-term and long-term mitigation actions to avoid any supply disruption. In the event there is a shortage of Goods for any reason, Seller will grant Buyer first priority for the Goods. Seller is responsible for all costs incurred by Buyer as a result of Seller's delayed or missed delivery.

Q42 Application of Acceptance Authority Media (AAM):

Seller must comply with the AS/EN/JISQ 9100 requirements and 14CFR Part 21.2 regarding the application of the Acceptance Authority Media (AAM) requirements. Seller must, within its organization and its supply chain, ensure that the use of AAM is clearly defined within its Quality Management System (QMS). Seller must, Buyer request, be able to demonstrate evidence of communication to its employees and to its supply chain; use of AAM must be considered as a personal warranty of compliance and conformity. Seller must 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 must 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.)

Q43 Zero Defect Plan (ZDP):

The Zero Defect Plan (ZDP) is a systematic implementation of established quality engineering tools and processes that focuses on protecting the Buyer from receiving non-conforming materials. The goal of the ZDP is to drive to zero non-conforming products. This is being driven by end use customers and is required to be flowed to Seller. Buyer reserves the right to audit and/or require any Seller to submit the ZDP using the prescribed method and template on a prescribed cadence until the elements of ZDP have been completed and demonstrating results. While all Sellers are expected to have an approach to achieving zero defects, Buyer could require formal execution using prescribed methods for any of the following (but not limited to):

- Escapes impacting customers
- New development / key programs requirements
- First Pass Yield issues impacting quality or delivery
- Receipt of new work

Sellers must use MPR or equivalent process to evaluate if manufacturing operations and processes are capable of consistently producing a product compliant to the design specifications and to define corrective actions to mitigate the sources of variation identified as part of the review. Evidence of execution of ZDP must be made available and/or provided upon request demonstrating execution progress.

Q44 Digital Product Definition (DPD):

Also known as Product Definition Dataset (PDD), Limited Dimension Drawing, Model Based Definition (MBD). The usage of DPD encompasses all digital model definitions.

The Seller must have a documented program that describes the requirements for Seller digital data system controls. To use Buyer furnished datasets as authority for manufacture or inspection of product and tooling, a Seller must comply with this requirement. This program must provide the basis for the Seller to create and implement plans, user level procedures and process documentation for the use of DPD. The Seller must have defined and reliable configuration management, which includes all CAM/CAD/CAI related software, that controls the configuration of the end product and Quality Assurance (QA) processes in place reflecting its methods of operation. Seller is required to maintain integrity of DPD through all operations when new DPD methods are deployed. It is expected that Sellers will utilize DPD processes to continuously improve the quality of delivered product. The application of this program is required for all phases of ISO9001 and AS9100 of the Sellers QMS when DPD data is used in computing systems and procedures to produce product or digital data for product acceptance (including accountability of tooling and tooling used for inspection). Supplier must meet: Boeing programs D6-51991, Spirit programs MAA1-10009-1, Collins programs ASQR-07.5.

Q45 Transfer of Work (TOW):

In case of a transfer of activity (from one the supplier's sites to another or from supplier to a subcontractor to another subcontractor) a transfer plan shall be defined, communicated to the Buyer, and implemented. The plan will address, as a minimum: an analysis of the risk related to the transfer and schedule; the identification of key skills; validation activities (including APQP per AS9145 & AS13100, and a Last Article Inspection using AS9102; delivery continuity and safety stock. Plans will be made available at Buyer's request. For guidance consult IAQG's SCMH. Supplier plans are subject to Buyer's additions based upon its customers' requirements.

Q46 Advanced Product Quality Planning (APQP):

- a. The APQP deliverables will follow AS9145 (and AS13100 as applicable), and based upon the type of change (i.e., new design, design change, new process, process change, work transfer, new design extremely low volume, specific to process tooling/refurb, negligible process change).
- b. The manufacturing risks will dictate the minimum APQP deliverables required to be submitted and approved by Buyer. The MRAS and Supplier's Quality Representatives will coordinate a kick-off meeting agreeing on the final PPAP elements to be retained at the supplier's location and/or submitted. PPAP elements shall be documented in Net-Inspect located at www.net-inspect.com/Authentication/Login.
- c. PPAP elements that are not required to be submitted shall be retained by the supplier and be available for review upon request.
- d. APQP will be required only when a "new part number" is ordered. A new part number is considered as: rolling the revision level of current part number, new Buyer part number, or a new part number to the supplier.

Q47 AS13100 requirements apply. Item has been identified as an Engine Component.**Q48 Corrective Action**

Seller shall have a documented procedure for corrective action which includes requirements to respond to Buyer complaints and requests for corrective action. The Seller is required to utilize appropriate methods such as Eight Disciplines (8D) or equivalent process for problem solving to develop appropriate root cause analysis and corrective action.

Upon implementation of corrective action, to ensure effectiveness, Seller shall have a documented process in place to ensure that 100% over-inspection (i.e., additional independent measurement of the affected characteristic(s)) is performed of the deviated characteristics for a minimum of the next three consecutive manufactured lots (quantities of parts produced under conditions that are considered uniform) unless otherwise specified by Buyer.

Q49 Cosmetic Part

Cosmetic blemishes are prohibited. Blemishes include uneven or discolored paint, primer, anodic coatings, plating, passivation, burns, chemical process pits, corrosion or other surface treatments which stand out to the unaided eye. Obvious signs of poor workmanship such as legibility issues, FOD / FOD hazards, fingerprints, and messy application of shelf-life materials. Light surface scratches, chips, gouges, nicks, burrs, dents, marring and other surface blemishes which stand out to the unaided eye. Tool marks, witness marks, steps, clamping depressions, die marks/drag, cutter feeds and dwell marks, cutter insert scallops and other machining discontinuities, that even though may be in compliance to specification or drawing tolerance, that would create an Unusual Visual Condition (UVC). Sellers are encouraged to submit a UVC to Buyer when substantiation warrants use of the product, but the product visually stands out when inspected. Potential UVC concerns shall be submitted to Buyer prior to shipment, Where the supplier does not notify Buyer of a potential UVC prior to delivery, the Seller will be responsible for return/rework/repair/scrub costs if the UVC is unacceptable.