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Requirements Manual

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**AMENDMENT RECORD**

| Revision | Date    | Pages Affected   | Section Affected  | Reason for Change  | Entered in Procedure by  |
|----------|---------|--|---|--|--|
| Orig     | 18MAR13 | N/A  | N/A   | New procedure  | D. Bartlett,<br>R. Hayward,<br>G. Patino,<br>K. Yoshiki-Gravelsins   |
| A        | 20DEC13 | 5, 6<br>6<br>9, 11<br>15<br>16<br>18<br>28<br>33<br>36, 37<br>38, 39 | 1, 4.2.1<br>3<br>7.1, 7.1.4<br>7.4.2<br>7.4.3<br>7.5.1.1<br>8.2.4(b)<br>8.5.2<br>Appendix A<br>Appendix B | Added specific quality approvals by commodity<br>Deleted reference to internal procedure<br>Added references to divisional documents<br>Added conditions requiring supplier notification<br>Added counterfeit / fraudulent / substandard item checks<br>Added conditions that would require process verification<br>Added C of C statement requirements<br>Added reference to OEM CAR<br>Added shipping document requirements<br>Added C of C content requirements | R. Hayward,<br>L. Munoz,<br>R. O'Doy,<br>P. Smith,<br>V. Young,<br>K. Yoshiki-Gravelsins   |
| B        | 20JAN18 | All  | All   | Completely revised. Updated to reflect AS9100D standard.   | D. Bartlett<br>D. Clarke<br>A. George<br>R. Guzman<br>M. Orlandi<br>G. Patino<br>J. Roberts<br>D. Windrim<br>K. Yoshiki-Gravelsins |
|          |         |  |   |  |  |



## 1. PURPOSE AND SCOPE

To define the quality and environmental requirements to be met by the supplier in providing products, materials, and services to Magellan Aerospace. Quality requirements include the supplier's process of procurement, planning, manufacturing, inspection and testing, design and development, storage, packaging, release and shipment of product as defined in the contractual requirements of the purchase order, including specified clauses.

Magellan Aerospace suppliers shall meet the requirements specified in AS/EN/SJAC 9100 Revision D and the Magellan Aerospace Supplier Quality Requirements Manual (SQRM), specified herein. In certain cases, with the written approval of Magellan Aerospace, suppliers may be exempted from the requirements of AS/EN/SJAC 9100D as specified in Corporate Policy 7.03, Supplier Approval, and the Supplier Approval Questionnaire (7.03a), where exceptions and specific requirements are documented.

Any suppliers required to meet AS/EN/SJAC 9100D shall additionally satisfy the requirements outlined below, and any other applicable requirements flowed down by the Magellan division purchase order. The Magellan requirements listed herein are arranged in alignment with the relevant clause of AS/EN/SJAC 9100D.

It is not the intent of this document to list all elements of AS9100D. Only additional Magellan requirements beyond those of AS9100D have been listed.

All suppliers shall meet the requirements specified in sections 11 & 12, Environmental and Export Compliance, respectively.

The terms "supplier" and "external provider", as used in this document and in AS9100D, are used interchangeably.

The Magellan SQRM document may be supplemented by divisional requirements as specified by divisional appendices.

## 2. DEFINITIONS

**Escape:** A product shipped to Magellan Aerospace by a supplier but found to be deviating to purchase order requirements, drawings, specification etc.

**Foreign Object Debris:** A substance, debris or article, alien to the product or assembly that has been allowed to invade the product.

**Foreign Object Damage:** Any damage attributed to a foreign object that can be expressed in physical or economic terms which may or may not degrade the product's required safety and/or performance characteristics.

**Repair:** Work performed on a material, product, process, due to a non-conformance to the drawing/specification, work that when complete will not bring the material, product, and process 100% compliant to the applicable drawing /specification (form, fit, function and reliability).

**Rework:** Work performed on a material, product, process, due to a non-conformance to the drawing/specification, work that when complete will bring the material, product, and process 100% compliant to the drawing/specification (form, fit, function and reliability).



### **3. RELATED DOCUMENTS AND APPLICABLE FORMS**

|       |   |
|-------|---|
|       | Magellan Division forms and appendices  |
|       | Magellan Aerospace Standard PO Terms and Conditions<br>(Revision 004, April 27, 2015) |
| 7.03  | Corporate Supplier Approval Policy  |
| 7.03a | Corporate Supplier Evaluation Questionnaire   |
| 6.01a | Corporate Supplier Environmental Questionnaire  |

### **4. QUALITY MANAGEMENT SYSTEM**

No Magellan additional requirements under section 4 of AS9100D.

### **5. LEADERSHIP**

Supplier management is responsible for providing, and maintaining resources to the extent necessary to comply with the Magellan purchase order. Supplier shall provide training to its employees to the extent necessary in order to carry out and meet Magellan purchase order requirements. Training shall include interpretation of Magellan specific requirements including the latest issue of Magellan Aerospace Supplier Quality Requirements Manual (Q7.4.1-3) and divisional appendices, as applicable. Supplier management shall be focussed on customer satisfaction with emphasis on quality, on-time delivery, cost reduction, risk management, and continuous process improvement.

### **6. PLANNING**

No additional Magellan requirements under section 6 of AS9100D.



## **7. SUPPORT**

### **7.1.1. RESOURCES**

Supplier Management is responsible for providing and maintaining resources to the extent necessary to comply with Magellan Aerospace purchase order requirements. This shall include, but is not limited to, training of the supplier's employees to meet P.O. requirements, requirements of the Magellan Aerospace Supplier Requirements Manual, and requirements for any identified special processes, quality inspection, test functions, and export compliance. Supplier management shall focus on customer satisfaction and continuous process improvement.

The supplier shall ensure that personnel performing tasks on behalf of Magellan Aerospace that have the potential to cause a significant environmental impact are competent on the basis of appropriate education, training or experience and shall retain associated records.

### **7.1.5. MONITORING AND MEASURING RESOURCES**

- a) The supplier shall identify all measuring equipment used in the manufacture and acceptance of the purchaser's product.
- b) The supplier must calibrate or have calibrated such equipment to a system that meets or exceeds the requirements of ANSI/NCSL Z540.3, ISO 10012-1 or ISO 17025 or as defined by end user specifications.
- c) All calibrating measuring instruments must be traceable to a national standard.
- d) Calibration frequencies must be clearly defined, instruments clearly labelled with the expiry date and a positive recall system must be in place.
- e) Documentation must be available to determine calibration system is within a 95% reliability target (UTC specification: ASQR-01).
- f) Tooling used as a media of inspection shall be controlled in the same manner as previously described.
- g) Magellan supplied tooling or gauging must not be altered in anyway without the permission of the Magellan division.
- h) Tooling/gauging on loan must be maintained in good working order and returned to the respective division at the conclusion of the contract and must be in a usable condition.

### **7.3. AWARENESS/PRODUCT SAFETY/ETHICS**

Magellan suppliers shall ensure that persons doing work under their control plan, implement, and control the processes needed to assure product safety during the entire product life cycle, as appropriate to the organization and the product. This includes assessment of hazards and management of associated risks, management of safety critical items, analysis and reporting of incidents affecting safety, and communication of these events and training.

Magellan suppliers shall ensure that persons doing work under their control are aware of the importance of ethical behavior.



**7.5. DOCUMENTED INFORMATION**

**7.5.1. GENERAL**

The supplier shall establish, document and maintain a Quality Management System – QMS in accordance with the latest revision of the AS 9100 standard or its European and Far East equivalent EN 9100 and SJAC 9100.

**NOTE 1:** Magellan-recognized QMS approvals are listed by commodity below:

| Product or Service Category                        | Approval                               |
|--|--|
| <b>Bought out Finished</b>                         | <b>AS9100</b>                          |
| <b>Calibration / Laboratory / Testing Services</b> | <b>ISO 17025; ISO 10012; ANSI A540</b> |
| <b>Castings / Forgings</b>                         | <b>AS9100</b>                          |
| <b>Design</b>                                      | <b>AS9100</b>                          |
| <b>Machining and Fabrication</b>                   | <b>AS9100; AC7004</b>                  |
| <b>Raw Material / Hardware Supplier</b>            | <b>AS9120; AS7103; AS7104, AS9100</b>  |
| <b>Special Processes</b>                           | <b>AS9100; AC7004</b>                  |
| <b>Tooling Suppliers / Manufacturers</b>           | <b>ISO 9001</b>                        |

Exceptions and/or specific quality requirements are documented in the Magellan Aerospace Supplier Evaluation Questionnaire (Form 7.03a).

**7.5.3. CREATING AND UPDATING/CONTROL OF DOCUMENTED INFORMATION**

Suppliers shall be fully responsible for the safe custody of all drawings, instructions and specifications supplied by Magellan Aerospace. The supplier shall ensure revision levels of drawings, specifications, operation sheets and technical plans are as stated on the purchase order. Any discrepancies shall be resolved with the Magellan Aerospace Purchasing Department prior to commencing work. The supplier shall ensure that only the relevant purchase order specified issue levels of documents are readily available for personnel at required work areas. Supplier shall not use or disclose to third parties any customer and or Government design data for any purpose other than the production and support of products and services to be supplied to Magellan Aerospace.

Supplier shall meet records requirements specified by purchase order and as specified in the divisional appendices listing applicable end use customer specification requirements.

No records shall be destroyed without written permission from Magellan Aerospace. Retention period begins upon shipment of the last item specified in the purchase order to the applicable Magellan Aerospace division.

Quality records shall be legible, identifiable to product involved and be stored and maintained in such a way that they are readily retrievable. Originals of documents shall be retained in an area that meets all local fire and life safety codes.

Sub-Tier supplier quality records shall be maintained in the same manner. Quality records shall be available for viewing by purchaser QAR and regulatory authorities upon request. Proprietary (OEM) information may be exempted.



## 8. OPERATION

### 8.1. OPERATIONAL PLANNING AND CONTROL

All manufacturing and process operations needed for product realization should be planned by the supplier. When stipulated on the Magellan purchase order the quality or technical plan for the manufacture of products or Special Processes must be submitted for Magellan approval. The plan shall address the manufacturing sequence and identify the inspection verification points, including key characteristics and/or critical to quality characteristics, and process controls selected by suppliers or identified by Magellan. The plan shall also include, as applicable all characteristics which are not verifiable upon receipt have been adequately controlled and verified.

The plan shall, where the manufacturing process requires the use of consumable items, i.e. weld wire, braze alloy etc. assure that traceability of the consumable has been recorded and maintained.

Subsequent to the acceptance of technical plans, prototypes or samples by Magellan or its customers, the supplier shall not make any change to plans to produce acceptable product without first obtaining the written consent of Magellan.

Software Quality Control shall be established for software (i.e., CNC programs) related to the design, fabrication, inspection and/or test of deliverable articles to Magellan.

The supplier shall work within and inspect to tolerances and limitations specified on the drawings. Final inspection shall include verification of acceptance of all previous inspection activities. All inspection and testing operations must be done by authorized personnel.

Sampling inspection shall not be used as a means of product acceptance unless approved in advance by Magellan. The plan shall preclude the acceptance of known defectives in the lot. No sampling inspection is permitted on Magellan repairs, overhaul or industrial components.

Unless otherwise specified by divisional documents, annual vision testing applies to all personnel performing inspection and/or welding operations to the following standard.

#### Visual Inspectors:

- a) Distant Vision: Snellen E.F. 20/30 or equivalent, in at least one eye, corrected or uncorrected.
- b) Near Vision: Snellen E.F. 20/20, in at least on eye, corrected or uncorrected.
- c) Colour Vision: Ability to distinguish and differentiate between colours on the standard Ishihara colour charts or equivalent

#### Non-destructive Testing (NDT) Inspectors:

- a) Must meet the requirements of NAS 410

#### Welders, Torch Brazers, Flame and Plasma Spray Operators:

- a) Distant Vision: Snellen E.F. 20/30 or equivalent, in at least one eye, corrected or uncorrected.
- b) Near Vision: Snellen E.F. 20/20, in at least on eye, corrected or uncorrected.
- c) Colour Vision: Ability to distinguish and differentiate between colours on the standard Ishihara colour charts or equivalent





The supplier shall maintain appropriate inspection and test records to substantiate conformance or non-conformance to the specified requirements. The quality status must be easily identifiable during all stages of manufacture. All quality and environmental records shall be legible and identifiable to the product involved. All records maintained at the suppliers facility must be made available to the purchaser as and when requested. Record retention and control of non-conforming product shall be as defined in this manual and AS9100D.

**NOTE 2:** As general practice, the Quality Plan, which includes the Technical Plan for special processes, shall address all items listed in section 8.1. Where requirements are specified by purchase order or contract, these shall take precedence.

The supplier shall employ a project management approach to the management of products based on product and organization as appropriate. Supplier shall select the life cycle phases (such as concept, design, planning, execution and closing of the project) processes, tools and techniques that appropriately fit to meet project requirements.

Managing a project includes, but is not limited to:

- Identifying and adhering to customer requirements
- Establish clear and achievable objectives
- Balancing the competing demands for quality, scope, time, and cost

The supplier shall adapt a project management culture and structure (project manager, project team, as appropriate) to deal with scheduled constraints, mitigate risk, manage resources to successfully achieve goals and objectives.

Unless prohibited in the Magellan purchase order to offload work or as defined in divisional requirements, Magellan Aerospace suppliers (purchase order holder) may choose to offload, but shall ensure the capability of all offload sub-tiers and the quality of all products meet Magellan purchase order requirements. Magellan Aerospace suppliers are also required to flow down to their lowest tier suppliers the applicable requirements listed in the Magellan Aerospace purchase documents. When Magellan Aerospace end customer requires the use of Customer Approved Suppliers, the supplier and / or its sub-tier are responsible for using only those approved suppliers listed on the end customer's (for example, Boeing, Lockheed, GE Aviation) web portals. All suppliers' purchased materials or services must be obtained from the Magellan Aerospace end customer's approved supplier / qualified parts list (where applicable).

#### **8.1.1. OPERATIONAL RISK MANAGEMENT**

The supplier shall establish, implement and maintain a process for managing risk to meet the requirements specified on Magellan Aerospace purchase orders. Risks that may affect delivery, cost or quality shall be identified prior to the supplier's commitment to supply product to Magellan Aerospace.

#### **8.1.2. CONFIGURATION MANAGEMENT**

Supplier shall maintain a configuration management system to comply with Magellan Aerospace purchase orders. Supplier shall have a defined process to review and incorporate drawings, specifications and supplemental instructions and changes thereto to the extent necessary to ensure that only documents of the revision specified in the Magellan Aerospace P.O. are utilized.



## **8.2. REQUIREMENTS FOR PRODUCTS AND SERVICES**

### **8.2.2. REQUIREMENTS RELATED TO PRODUCTS AND SERVICES**

The supplier shall review requirements specified by Magellan Aerospace purchase order to meet product requirements including regulatory activities. The supplier shall determine and establish product support after delivery including maintenance and warranty as required.

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

#### **8.4.1. GENERAL**

Magellan Aerospace performs a review of its suppliers QMS at a minimum frequency of every 3 years and/or on before the expiry of the supplier's main QMS approval or as required by purchase order. The review will include, at a minimum, the update of supplier specifications, certificates, and records based on the individual supplier qualifications and approvals.

NOTE 3: A minimum supplier rating must be maintained as specified in supporting divisional appendices.

The necessary actions to take when suppliers do not meet requirements are specified in supporting divisional appendices.

When specified by purchase order, suppliers shall use customer-approved special process sources

A supplier is approved in accordance with the schedule below. The scope of approval may be limited to a type or level of goods or service or to first article inspection.

- i. Approved – Supplier questionnaire, certifications and on-site audits (as applicable) are approved
- ii. Conditional – Approval is in process
- iii. Inactive - Approval has lapsed or renewal is on hold due to a lack of purchase order activity within last 12 months
- iv. Disapproved – Lack of delivered quality, unacceptable performance

#### **8.4.3. INFORMATION FOR EXTERNAL PROVIDERS**

Suppliers are required to meet all requirements specified by Magellan purchase order and Terms and Conditions.

And in addition, the supplier shall:

- Notify Magellan Aerospace of changes in quality manager representative
- Notify Magellan Aerospace of changes in manufacturing facility location for Magellan approval
- Request changes in frozen process planning for Magellan approval, with final approval from the OEM



- Provide right of access by Magellan Aerospace, our customer, and regulatory authorities to the applicable areas of all facilities, at any level of the supply chain involved in the order, and to all applicable records.

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

### **8.5.1. CONTROL OF PRODUCTION AND SERVICE PROVISION**

All special processes as required by Magellan purchase order must be performed by supplier or customer approved facilities.

Certification and / or test reports shall be included with each shipment as per Appendix A, unless otherwise specified by P.O.

#### **8.5.1.1. CONTROL OF EQUIPMENT, TOOLS AND SOFTWARE PROGRAMS**

Suppliers who receive digital product definition data from Magellan (or Magellan customers) shall have a system to control / identify:

- a) Verification of the integrity of the file transfer;
- b) Configuration Management;
- c) Problem Reporting & Corrective Action (i.e. for nonconforming datasets, graphics, etc.);
- d) Media Security;
- e) Data Exchange Methods (changes to data exchange methods require notification to Magellan);
- f) Computing Equipment;
- g) Maintain full traceability of all derivative data back to the original Magellan provided electronic definition.

Storage requirements, including periodic preservation/condition checks, shall be defined for production equipment or tooling in storage.

#### **8.5.1.3. PRODUCTION PROCESS VERIFICATION**

A FAI in conformance with SAE AS9102 shall be completed by the supplier as required by AS 9102. When requested by purchase order, the results of this FAI shall be submitted to Magellan. When a manufacturing change requiring an FAI is made, the supplier shall notify Magellan Aerospace of the change. Magellan may then request the FAI report.

As required by the Magellan purchase order:

- the first article report may be submitted prior to or with delivery of the product.
- Magellan reserves the right to witness, in whole or in part, the in-progress FAI.

The First Article component shall be clearly identified.



### **8.5.2. IDENTIFICATION AND TRACEABILITY**

The supplier shall maintain the identification of the configuration of the product in order to identify any differences between the actual configuration and the agreed configuration.

The supplier shall identify the product in accordance with the drawing requirements and maintain product traceability to materials and processes.

All suppliers are required to assure that individual unit traceability is maintained throughout all processing steps. All product, including manufacturing / assembly / inspection / verification records and material shall be identified by lot number, material type, specification and revision, heat number and/or serial number where required to maintain traceability and part marking.

Each assembly shall be traceable to the product acceptance records that are associated with the final product. The assembly shall also be traceable to each serialized or lot numbered sub-assembly or part and their product acceptance records.

Serial nos. shall be unique and not duplicated for any reason regardless of the part or assembly identification number, design, function or usage of the item being manufactured.

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

### **8.5.3. PROPERTY BELONGING TO CUSTOMERS OR EXTERNAL PROVIDERS**

The material supplied by purchaser shall be used only for the order concerned. The supplier shall not substitute other material without written and specific authorization from the purchaser.

Where a supplier is instructed to drop ship material to a subsequent purchaser supply source, the shipping supplier must enclose a packing slip with the shipment and forward all documentation for the material to the purchaser supplier quality.

For products manufactured from the purchaser supplied materials, the suppliers release documentation shall be annotated with the purchaser shipping order number on which the material was supplied.

The supplier must maintain identity of all surplus material and tooling for return to the purchaser at the end of the contract unless otherwise directed by the purchaser.

### **8.5.4. PRESERVATION**

The Quality Plan shall provide the necessary instructions for the handling and protection of specialized material (i.e. titanium, magnesium, etc.), preservation methods and secured storage to prevent damage or deterioration of product. Where specific packaging and preservation requirements are not specified on the purchase order, best commercial practices are to be followed as a minimum. The packaging must be of adequate substance to ensure that the product will not deteriorate or be damaged in transit.

The supplier shall also have in place a system to control, detect and prevent FOD.

Supplier shall identify any shelf life limitations on their certificate of conformance, and shelf life shall be in compliance with purchase order requirements.



## **8.6. RELEASE OF PRODUCTS AND SERVICES**

Only competent personnel shall perform inspection and testing. Where required by process specification or by contract, only qualified or certified personnel shall be used and applicable vision requirements shall be met.

### **100% Inspection**

100% inspection of all product characteristics on all products is required, unless otherwise stated on the purchase order or when allowed by Magellan's customer-designated requirements and agreed to in writing by Magellan. Sampling inspection shall only be used as a means of product acceptance when Magellan has determined that the plan is statistically valid to contractual obligations. The plan shall preclude the acceptance of known defectives in the lot. In all cases, inspection requirements identified by engineering drawing or specification take precedence over the inspection requirements defined herein. No sampling is allowed on repair, overhaul and industrial components.

### **Critical Items**

When critical items, including key characteristics, have been identified the supplier shall ensure they are controlled and monitored in accordance with the established processes.

Purchaser's or purchaser's customer verification activities performed at any level of the supply chain should not be used by the supplier as evidence of effective control of quality and does not absolve the supplier of its responsibility to provide acceptable product and to comply with all requirements.

Purchaser may charge supplier for additional costs to purchaser when work is not ready for verification at the time designated.

If allowed by Magellan Aerospace in writing, supplier may release product for production use pending completion of all required measurement and monitoring activities, provided product is identified and recorded to allow recall and replacement if it is subsequently found that the product does not meet requirements. Product cannot ship to Magellan until the required verification activities are complete, unless otherwise authorized by Magellan.

### **Counterfeit, Fraudulent, or Substandard Items (CFSI)**

Supplier shall have a system that ensures that items procured in support of Magellan purchase orders shall have all necessary end user approvals and prevents the shipment of counterfeit, fraudulent or substandard items. Supplier receiving process should include product and documentation review for indicators of counterfeit/fraudulent/ substandard items.

Except as otherwise stated in this Agreement, all shipments shall be subject to final inspection and acceptance or rejection by purchaser after receipt and performance testing at site. Purchaser shall have the right to require the prompt correction of defective work by supplier, at supplier's risk and expense, or may elect to correct the defective work itself and back charge supplier for the cost of the correction. If correction is impracticable, supplier shall bear all risk after notice of rejection and shall at purchaser's request, promptly make all necessary replacements at supplier's expense. If supplier fails to make prompt replacements, purchaser may make such replacements and back charge supplier for excess costs incurred by purchaser.



### **In-Process Inspections**

All work in progress (including, but not limited to, work performed by supplier's sub-tier suppliers) shall be subject to such inspection and tests as purchaser may direct. Inspections and tests may include verification of documentation, inspection of material or services, witnessing re-inspection or re-test of a selected sample, or physical inspection/testing of the product in question to determine contract compliance. purchaser, customer quality assurance representatives, and regulatory authorities representatives, may perform such inspections and tests on supplier's (or supplier's sub-tier suppliers) premises, in which case the supplier and their sub-tier suppliers shall furnish, at no additional charge, facilities, personnel, equipment and assistance for safe and convenient inspections and test as required by the inspectors.

For orders requiring source inspection at the supplier's premises or that of the supplier's sub tier, the supplier shall contact the purchaser's quality control representative in advance to allow timely inspection. Similarly for orders requiring government quality assurance, the supplier shall make arrangements promptly with the Quality Assurance Representative so that appropriate inspection can be accomplished prior to release authorization.

All inspections and tests shall be performed in such manner as not to unduly delay the work.

A copy of the source inspection report signed by the Magellan representative shall be forwarded to Magellan along with the shipment.

**NOTE 4:** Magellan reserves the right to waive source inspection as applicable.

### **Process Documentation**

Process documents shall identify the inspection status of the part(s) being produced for conformance or non-conformance with regards to inspection and tests performed. Inspection status of parts shall be easily detectable during all stages of manufacture or production using router cards, tags, inspections stamps etc. The system shall assure that only product that has passed the required inspections and tests are dispatched, used or installed.

The suppliers system shall establish and document controls for acceptance authority media.

Each batch/lot of material submitted for Magellan's acceptance must be accompanied by the documentation specified on the purchase order and meet the following requirements, where applicable:

- a) All inspection and test documentation shall be traceable to the lot of material shipped.
- b) Each Certificate of Conformance (Release Note) shall be legible and traceable to the company's authorized release personnel and formatted to provide the required information as per Appendix B.

Concessions (waivers) where applicable, identification of nonconforming material or process, and a copy of the dispositioned Deviation Report.

For "Surplus Material" the following statement is required: "Product/part(s) are/is in "New" or "Un-Used" condition".

For "Surplus Material" that is in "used" or "as-removed" condition the supplier must obtain prior approval from Magellan Aerospace in advance of shipment. The certification shall state "Product/part(s) are/is in "Used" or "As-removed" condition", and must be tagged, accordingly.

Where customs is involved, duplicate copies of the C of C to be provided on the outside and inside of the package.



## **8.7. CONTROL OF NON-CONFORMING OUTPUTS**

Non-conforming product that has not been dispositioned by Magellan Aerospace may not be shipped unless specific written authorization has been provided to the supplier by Magellan Aerospace. When non-conforming product is authorized to be shipped it must be suitably identified and packaged separately from the conforming material.

Non-conformances shall be submitted to Magellan Aerospace as directed by Magellan Aerospace. Product subject to a non-conformance disposition must have the deviation recorded on the C of C.

Supplier repair procedures submitted to Magellan Aerospace shall include a detailed routing procedure including the sequence of operations, specifications, inspection, acceptance criteria and a provision for the recording of traceability of consumables used. Magellan Aerospace approval is required prior to commencing a repair.

Suppliers system shall provide for containment and notification within 24 hours of non-conformances that may affect product already delivered.

Suppliers of tooling/gauging are required to submit all deviations as directed by Magellan Aerospace for review and disposition prior to delivery. Failure to comply shall result in the supplier absorbing additional costs incurred by Magellan Aerospace.

Scrap purchaser material is the property of the purchaser and must be conspicuously and permanently marked, or positively controlled, until physically rendered unusable. Magellan Aerospace shall direct the supplier to return scrap material or provide objective evidence that material has been scrapped. Records of such must be maintained.

Proprietary (OEM) manufacturers may use their own internal MRB function providing it does not violate Magellan Aerospace drawing requirements and referenced specifications.

Escapes shall be documented as directed by Magellan Aerospace. A copy of such document will be forwarded to the supplier.

When nonconforming product is corrected it shall be subject to re-verification to demonstrate conformity to the requirements.

Records of the nature of nonconformities and any subsequent actions taken, including concessions obtained, shall be maintained.

Except as otherwise stated in this Agreement, all shipments shall be subject to final inspection and acceptance or rejection by purchaser after receipt and performance testing at site. purchaser shall have the right to require the prompt correction of defective work by supplier, at supplier's risk and expense, or may elect to correct the defective work itself and back charge supplier for the cost of the correction. If correction is impracticable, supplier shall bear all risk after notice of rejection and shall at purchasers request, promptly make all necessary replacements at supplier's expense. If supplier fails to make prompt replacements, purchaser may make such replacements and back charge supplier for excess costs incurred by purchaser.

## **9. PERFORMANCE EVALUATION**

No additional Magellan requirements under section 9 of AS9100D.



## 10. IMPROVEMENT

### 10.1. GENERAL

Magellan Aerospace encourages suppliers to have systems in place to promote and implement continuous improvement activities in quality, service, delivery, value, and environmental management. This philosophy should be fully deployed throughout the supplier's organization. Examples of techniques utilized for continuous improvement initiatives, include, but are not limited to:

- a) Statistical Process Control / Control Charts
- b) Design of Experiments (DOE)
- c) Theory of Constraints
- d) Parts per million (PPM) Analysis
- e) Lean Manufacturing / Value Analysis
- f) Benchmarking
- g) Kaizen Events
- h) Mistake Proofing
- i) Failure Modes and Effects Analysis

Where mandatory, the requirement for statistical process control shall be provided on the purchaser purchase order.

### 10.2. NON-CONFORMITY AND CORRECTIVE ACTION

The supplier shall take action to eliminate the causes of nonconformities in order to prevent their occurrence. Corrective actions shall be appropriate to the effects of the nonconformities encountered.

A documented procedure shall be established to define requirements for:

- a) reviewing nonconformities (including customer complaints)
- b) determining the causes of nonconformities,
- c) evaluating the need for action to ensure that nonconformities do not recur,
- d) determining and implementing action needed,
- e) records of the results of action taken,
- f) reviewing corrective action taken,
- g) flow down of the corrective action requirements to a sub-tier supplier, when it is determined that the sub-tier supplier is responsible for the root cause, and
- h) specific actions where timely and/or effective corrective actions are not achieved.

Based on supplier performance or specific product/process non-conformances, Magellan will issue to the supplier a Corrective Action Request (CAR) document, or OEM equivalent. The supplier's response shall be directed to the documents issuer on or before the "due date" shown on the document. Overdue CAR responses, or no response at all, or failure to provide follow-up documentation/records could impact the business relationship between the supplier and Magellan, and may lead to the removal of the supplier from the Magellan Approved Supplier register.





When performing a corrective action investigation, at a minimum, the supplier shall consider the following:

**Immediate Corrective Action:**

Identify and contain the problem.  
Identify the extent of the nonconforming condition.  
Quarantine all suspected material.  
Review the discrepancy to determine the appropriate disposition.  
Take action to notify all parties (at the supplier, supplier's sub-tiers, and customer, as appropriate ) of the non-conformance  
Identify the direct cause of the nonconforming condition.  
Establish a corrective action plan for the direct cause of the non-conformance that includes the actions to prevent the discrepancy from happening again in the short term.  
Establish when the direct cause corrective action plan will take effect.  
Establish the effectivity where the product will be shipped to Magellan Aerospace without the defect.

**Root Cause:**

Identify the root cause(s) of the non-conformance, including, as applicable, those related to human factors. Note: operator error is not acceptable as a root cause.

**Root Cause Correction:**

Identify the actions required to solve the identified root cause(s).  
Establish the projected completion dates for implementation of actions including procedural changes, training  
Establish when the root cause corrective action plan will be complete including the projected date that the root cause will be fixed.

**Corrective Action Verification Plan**

Describe the actions that will be taken to verify that the root cause corrective action plan has been implemented. This would include the completion of any committed activities such as shop changes, training performed and the creation of new and revised documents and procedures.  
Provide evidence of completed activities such as copies of shop changes, training records, creation of new and revised documents and procedures

**Follow-Up:**

Describe when and what will be audited. Include dates and processes to be reviewed.  
Describe if the correction be checked annually during an internal audit or addressed during a special audit. The follow up activity must evaluate the effectiveness of the root cause correction to prevent reoccurrence of the non-conformance.

At Magellan's request, the supplier shall provide records and or documentation that attest the implementation of the corrective action and the resulting improvement. Magellan may elect to perform on-site Corrective Action follow-up.

Where a formally documented cause and corrective action response has not been requested by Magellan, the supplier shall review the process to ensure no further discrepancies occur. This does not negate the supplier from obtaining cause and corrective action. The results shall be made available to Magellan upon request.



## **11. ENVIRONMENTAL, HEALTH & SAFETY REQUIREMENTS**

The purchaser's Environmental Management System meets the requirements of the ISO 14001 standard. The purchaser will uphold environmental stewardship and the management of environmental impacts associated with all activities in its organization. The purchaser encourages its business partners, including suppliers and their sub-tier suppliers, to be environmentally responsible and to consider achieving ISO 14001 certification.

No part of the purchase order will be performed, nor will any of the materials, supplies, articles, or equipment manufactured or furnished under said purchase order be manufactured or fabricated in any plants, factories, buildings, or surroundings, or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of the purchase order. Supplier agrees to comply with all laws and regulations affecting this purchase order in any manner and agrees to execute further stipulations that may be necessary to effect such compliance. All laws and regulations required to be incorporated in contracts of this character are hereby incorporated by reference.

When requested the supplier shall complete the Supplier Environmental Questionnaire (Form 6.01a) to the satisfaction of Magellan Aerospace.

The supplier shall identify any potential health and safety and environmental impacts by listing controlled substances on their certificate of conformance. Supplier shall submit to purchaser Material Safety Data Sheets (MSDS) or Globally Harmonized System of Classification and Labelling of Chemicals (GHS) safety data sheets, as applicable, as required by purchaser's statutes and regulations. All MSDS/GHS must be current and certification must be less than three (3) years old.

## **12. EXPORT COMPLIANCE**

Supplier shall meet its contractual and legal requirements under applicable export law, e.g., the International Traffic in Arms Regulations (ITAR), Export Administration Regulations (EAR), Controlled Goods Regulations, EU Export Controls, etc. Furthermore, supplier shall satisfy its obligations under Magellan's export compliance program. This includes safeguarding all Restricted Items and work with Magellan Aerospace to prevent unauthorized exports from occurring.

**APPENDIX A – SUPPLIER SHIPPING DOCUMENTS**

| <b>DOCUMENTATION TO BE SUPPLIED<br/>WITH EACH SHIPMENT</b>   | <b>PRODUCT OR SERVICE CATEGORY</b> |                         |                           |  |                    |                                       |                              |                               |                                      |   |                    |   |               |                                   |
|--|------------------------------------|-------------------------|---------------------------|--|--------------------|---------------------------------------|------------------------------|-------------------------------|--------------------------------------|---|--------------------|---|---------------|-----------------------------------|
|  | <b>Forging/<br/>Casting</b>        | <b>Raw<br/>Material</b> | <b>Machining<br/>Only</b> | <b>Build to Print<br/>(Including<br/>Processing)</b> | <b>Fabrication</b> | <b>Mech./Hydraulic<br/>Assemblies</b> | <b>Tooling/<br/>Fixtures</b> | <b>Special<br/>Processing</b> | <b>Standard Catalog<br/>Hardware</b> | <b>Sealers, Coatings,<br/>Lubricants,<br/>chemicals, etc.</b> | <b>Calibration</b> | <b>Laboratory/<br/>Testing Services</b> | <b>Design</b> | <b>Delegated<br/>Supplier FL4</b> |
| Supplier's Packing Slip  | X                                  | X                       | X                         | X  | X                  | X                                     | X                            | X                             | X                                    | X   | X                  | X                                       | X             | X                                 |
| Certificate of Conformance FL1   | X                                  | X                       | X                         | X  | X                  | X                                     | X                            | X                             | X                                    | X   | X                  | X                                       | X             | X                                 |
| Completed First Article Inspection Report /<br>Delta FAI in accordance with latest Rev of AS<br>9102<br>(This standard does not apply to Standard<br>Catalog Hardware)   | FL2                                | FL2                     | X                         | X  | X                  | X                                     | FL2                          | FL2                           |                                      |   |                    |   | X             | X                                 |
| Raw material certification traceable to<br>material specification and heat lot / batch<br>number. All metallic material documents shall<br>be traceable from receipt at Magellan back to<br>the origin of the material through all<br>intermediary stockists, processors,<br>distributor's, etc. | X                                  | X                       | X                         | X  | X                  | X                                     | X                            | X                             |                                      | FL2   |                    |   | X             | FL3                               |
| Process Certifications   | X                                  | X                       |                           | X  | X                  | X                                     | X                            | X                             |                                      |   |                    |   | X             | FL3                               |
| Supplier's inspection records that reflect<br>product review and acceptance  | FL2                                |                         | FL2                       | FL2  | FL2                | FL2                                   | FL2                          | FL2                           |                                      |   |                    |   | X             | FL3                               |
| Functional Test Report   |                                    |                         |                           |  |                    | FL2                                   | FL2                          |                               |                                      |   |                    |   | X             | FL3                               |
| Metallurgical test reports (chemical and<br>mechanical analysis)   | X                                  | X                       |                           | X  | FL2                | X                                     |                              | X                             |                                      |   |                    |   | X             | FL3                               |

Flag Notes:

**FL1:** Review (Prime) Customer Quality requirements in addition to standard C of C; Magellan's customer may request that additional information be listed on Certificate of Conformance and/or referenced document.

**FL2:** When invoked in the Magellan purchase order

**FL3:** To be supplied to Magellan upon request

**FL4:** Delegated Supplier status (i.e., Dock-to-Stock, Source Delegation, Supplier Delegation, etc.) applies when supplier has been granted approval from specific Magellan division

**NOTE: Suppliers who have demonstrated an acceptable level of documentation performance may have requirements relaxed by Magellan Quality Assurance.**



**APPENDIX B – C OF C CONTENT REQUIREMENTS**

| <p><i>TO BE INCLUDED ON THE<br/>CERTIFICATE OF<br/>COMPLIANCE/CONFORMANCE</i></p>  | <p><i>TYPE OF CERTIFICATE OF<br/>COMPLIANCE/CONFORMANCE</i></p> |                  |                              |              |  |         |
|--|---|------------------|------------------------------|--------------|--|---------|
|  | Detail Parts  | Assemblies (FL5) | Standard Hardware (FL1, FL4) | Raw Material | Age or Environmentally Sensitive Materials | Tooling |
| Full Part (or Product) Number (includes castings and forgings)   | X   | X                | X                            | X            | X  | X       |
| Serial Number(s) (when applicable)   | X   | X                |                              | X            |  |         |
| Part Designation   | X   | X                |                              |              |  |         |
| Material Description and Specification   | X   | X                | X                            | X            | X  | X       |
| Special Process Name, Specifications, and Revisions  | X   | X                |                              |              |  |         |
| Product Specification and Revision   | X   | X                | X                            | X            | X  | X       |
| Quantity of Parts Shipped  | X   | X                | X                            | X            | X  | X       |
| Program ID, when requested   | X   | X                | X                            | X            |  |         |
| Customer Name (Magellan)   | X   | X                | X                            | X            | X  | X       |
| Supplier's Name and Address  | X   | X                | X                            | X            | X  | X       |
| Original Manufacturers   |   |                  | X                            | X            | X  |         |
| Revisions of: electronic model, 2D drawing, parts list, picture data list (PSDL), and any additional engineering data defined in the Magellan purchase order | X   | X                |                              | X            |  |         |
| Magellan Purchase Order Number and Line Item, and Release Number, if applicable  | X   | X                | X                            | X            |  | X       |
| Original Manufacturer's Batch Number   |   |                  | X                            | X            | X  |         |
| Supplier/Distributor Batch Number  |   |                  | X                            |              |  |         |
| Chemical Properties  |   |                  |                              | X            |  |         |
| Material Hardness  |   |                  |                              | X            |  |         |
| Mechanical Test Data   |   |                  |                              | X            |  |         |
| Date of Manufacture and Cure Date  |   |                  |                              |              | X  |         |
| Shelf Life Expiration Date   |   |                  |                              |              | X<br>FL3                                   |         |
| Environmental Storage Condition  |   |                  |                              |              | X  |         |
| Certification Approval. Printed name, Signature and Date.<br>Note: An electronic signature is an acceptable alternative to the written signature.            | X   | X                | X                            | X            | X  | X       |
| Quality Assurance Stamp, when required   | X<br>FL2  | X<br>FL2         |                              |              |  |         |



- FL1 For standard hardware items that are part of a Qualified Products List (QPL) or other prime customer procurement document/specification, the supplier's certificate of conformance/packing list shall certify that the manufacturer of the hardware is included in the procurement document.
- FL2 All Certificates of Compliance/Conformance shall bare evidence that final inspection has been performed with the quality assurance stamp affixed and dated to the Certificates of Compliance/Conformance.
- FL3 Material shall not be shipped to Magellan with less than 75% of the required remaining shelf life unless approved by Magellan
- FL4 A packing list is an acceptable alternative to the certificate of conformance provided it includes a statement that the product conforms to all purchase order requirements.
- FL5 The certificate of conformance shall define all details within an assembly along with the aforementioned notations for each detail unless otherwise noted. The C of C may be accomplished as a single certificate or on multiple certificates. The required content is the same as noted in the Certificate of Compliance/Conformance for detail parts. When providing individual certifications for each detail part contained in the end item assembly, the individual certifications must be traceable to the certification for the end item assembly.