## REVISION HISTORY

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<th>REASON FOR CHANGE/CHANGE</th>
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<td>D</td>
<td>01/23/07</td>
<td>Page 9 – Added comment in P25 Clause “…Section of tape from Tape and Reel…”</td>
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<td>E</td>
<td>05/08/07</td>
<td>Page 6 – Added clause D7V, “…shall be less than 84 months old…”</td>
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<td></td>
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<td>Page 9 – Added clause P26 that refers to fumigation or treatment of wooden crates received from international suppliers. Ecn-00000016660</td>
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<td>F</td>
<td>05/15/07</td>
<td>Page 9 - Added “Only one lot date code per reel shall be…” accepted.” Ecn-00000016881</td>
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<td>G</td>
<td>08/13/2008</td>
<td>Throughout – Corrected references and changed SSG to SSG/APG</td>
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<td>Page 6 – Added “where applicable” to HI clause</td>
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<td>Page 7 – Added title of NO SN LABELS to M5 clause</td>
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<td>Page 8 – Added text to P5 clause, “…both ends of tape must be bare for a minimum of 18 inches…”</td>
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<td>Page 10 – Deleted word “(LIMITED) in S4 title of SOURCE INSP and inserted the word business in “…a minimum of five (5) days…”</td>
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<td>Page 11 – S16 SPECIFICATIONS Added new code and text</td>
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<td>Page 13 – Extensively expanded instructions for completing Supplier Quality Assurance MIP/Source Inspection/Surveillance Request form.</td>
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<td>Page 14 – Redesigned Source Inspection Request form. Ecn-33118</td>
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<td>H</td>
<td>5/19/10</td>
<td>Updated and corrected procedural and specification references….</td>
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<td>Edited “Purpose” statement …………………………………………………………………………</td>
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<td>Updated “References” ………………………………………………………………………………</td>
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<td>Added “Definition” ……………………………………………………………………………………</td>
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<td>Updated “Acronyms/Abbreviations” …………………………………………………………………</td>
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<td>Revised the following clauses; C1, C2, C4, C5, D5, D9, E2, G1, J11, N1, N2, N5, P5, P25, Q2, R1, S3, S4, S6 and T5 ……..</td>
<td>Section 5</td>
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<td>Deleted the following clauses; N3, N4, N6 and Q4..............................................</td>
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<td>Updated minimum retention period….. ……………………………………………………………….</td>
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<td>J</td>
<td>6/9/10</td>
<td>Deleted the clause; P3</td>
<td>Section 5</td>
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<td>Added the following new clauses; Q25, Q25A, Q25B, Q25C, Q25D, Q25E, Q25F</td>
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<td>ECN-00000056945</td>
<td>Changed the words “or” to “and” in quality clause C4</td>
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<td>Expanded definition of quality clause P5</td>
<td>Page 9</td>
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<td>Expanded definition of quality clause P25</td>
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<td>Quality Clause O25 corrected to Q25</td>
<td>Page 11</td>
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<td>QSF-GD0002-01 updated to rev D</td>
<td>Page 15</td>
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<td>ECN-00000061875</td>
<td>Table of Contents. Format correction. C3X. Added “is on file and available for review” to C4 (Calibration System). Changed Z540.3 to Z540.1. D7V (Date Code). Removed DV7. D6 and D6V. Added “and delivers to Orbital”. P25 (Packaging). Added “Individual ESD Packaging is also an acceptable method of packaging.”</td>
<td>Page 4</td>
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<td></td>
<td>T5 (Testing). Changed Title from “Testing” to “Test Data”. Added Figure A-1 Title to Instructions for QSF-GD0002-01.</td>
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<td>ECN-00000062378</td>
<td>Revised Quality Clause C4</td>
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<td>ECN-00000067850</td>
<td>Revised Quality Clause D5 to add PO Line Item</td>
<td>Page 7</td>
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<td>Revised Quality Clause D6V added last sentence.</td>
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<td>Revised Quality Clause P5 changed tape lead length and reel requirements.</td>
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<td>Revised Quality Clause P16 reworded paragraph for clarity.</td>
<td>Page 10</td>
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<td>Revised Quality Clause S2X reworded paragraph.</td>
<td>Page 11</td>
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<td>Revised Quality Clause S18 added letter “e” for refrigerated/frozen receipts.</td>
<td>Page 12</td>
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<td>ECN-00000068300</td>
<td>Corrected Title Errors</td>
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<td>Added Quality Clause C1X</td>
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<td>Format Corrections.</td>
<td>Pages 6 - 14</td>
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<td>ECN-00000071699</td>
<td>Changed Title Page</td>
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<td>Removed Proprietary Statements</td>
<td>Pages 1 &amp; 2</td>
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<td>Revised Para 2 Reference Documents to correct Typo for TO-GD0014 and Add reference to TO-GD0004.</td>
<td>Page 5</td>
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<td>Revised Quality Clause’s C1, C2, C3 and C3X by rewording paragraphs and to add Manufactures requirements.</td>
<td>Page 6</td>
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<td>Revised Quality Clause’s D6 and D6V to clarify re-life requirements and removed SSG/APG statement at top of page.</td>
<td>Page 7</td>
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<td>Revised Quality Clause P5 to add tape and reel Specification and correct typo.</td>
<td>Page 9</td>
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<td>Revised Quality Clause T1 to allow for receipt of electronically transmitted copies of EIDP and removed/deleted last sentence.</td>
<td>Page 13</td>
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<td>Revised Appendix A Figure A.1 by adding new instructions and rewording others for clarity.</td>
<td>Page 15</td>
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<td>Revised Appendix A Figure A.2 with current revision of Form QSF-GD0002-01.</td>
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<td>05/07/12</td>
<td>Added TO-GD0006 to Reference Documents</td>
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<td>Revised Quality Clause C2 by rewording paragraph to add the wording “and/or” &amp; “(if available)”</td>
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<td>Revised Quality Clause E2 to remove “The use of Pink Poly is Prohibited”.</td>
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<td>Added Quality Clause P3 to Prohibit the Use of Pink Poly Packaging Materials for all shipments to Orbital.</td>
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<td>Revised Quality Clause P5 to remove “The use of Pink Polly is Prohibited”</td>
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<td>Revised Quality Clause S12 by rewording the entire paragraph.</td>
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<td>Revised Quality Clause P25 to remove “The use of Pink Polly is Prohibited”</td>
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<td>10/08/12</td>
<td>ECN-00000078181 Revised Quality Clause G1 by rewording the entire paragraph.</td>
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<td>Revised Quality Clause J12 by rewording the entire paragraph.</td>
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<td>Revised Quality Clause P5 to change from 15.75 min length to 13” min length.</td>
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<td>02/08/13</td>
<td>Incorporate ISO/TO-ECN-00000079536 for revised Quality Clause P3 to clarify packaging requirement.</td>
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<td>Change Supplier Management Approver</td>
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<td>Minor Format Changes</td>
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<td>03/12/13</td>
<td>ECN-00000081975 Removed Approver Barry Johnson (Supply Chain Management)</td>
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<td>Revised Quality Clause D9 to remove “following address: Orbital Sciences Corporation 21830 Atlantic Blvd. Blg 5 (loading Dock), Dulles, VA, 20166” and add “Orbital Address as instructed in the Purchase Order note.”</td>
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<td>Revised Quality Clause J12 to Remove “each end item” &amp; “and AQL Sampling Plan ANSI/ASQZ1.4 or equivalent” and Add “on a minimum of one (1) piece”.</td>
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<td>03/18/13</td>
<td>ECN-00000082115 Revised Quality Clause M3 to remove “(With each shipment of parts the supplier shall submit two copies of a certificate, signed by a member of the supplier's Quality supervision, which states), ”(supplier company name) certifies that all material used in the performance of this purchase order number ____________ was supplied by ORBITAL SSG/APG and no unauthorized substitutions or disposals were made.”</td>
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<td>Revised Quality Clause P3 to remove “has been shown to cause discoloration on certain materials and shall not be used as packaging material, where it will come in direct (intimate) contact with the hardware.” and add “is NOT an Orbital Preferred or Recommended packaging material. Reference GIDEP ALERT Numbers G6-P-04-01 and KE-A-89-02.”</td>
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<td>Revised Clause</td>
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<td>05/02/13</td>
<td>ECN-00000083245</td>
<td>Revised Quality Clause E2</td>
<td>“With acceptance of this FDNC the vendor further certifies that all individual parts and/or assemblies that are ESD Sensitive Class 0, in accordance with MIL-HDBK-103 and/or MIL-PRF-38535, have been processed and handled in accordance with industry approved ESD Requirements.”</td>
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<td>08/09/13</td>
<td>Revised Quality Clause P25</td>
<td>From: P25 PKG</td>
<td>Devices shall be packaged, in order of preference, in Tape &amp; Reel, Sections of tape from Tape and Reel, waffle packs, or matrix trays. Individual ESD Packaging is also an acceptable method of packaging. The use of bulk packaging is prohibited. Only one lot date code per reel shall be accepted. If parts are ESD sensitive, then the following applies: Components on this order are susceptible to damage caused by static electricity and are considered electrostatic discharge sensitive (ESDS). The supplier shall implement an ESD control program in accordance with ANSI/ESD S20.20 for any activity that designs, tests, inspects, services, manufactures, processes, assembles, installs, packages, labels, or otherwise handles the components. Component packaging shall be either conductive or static dissipative and shall identify the components as ESDS</td>
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<tr>
<td>08/09/13</td>
<td>Revised Quality Clause P25</td>
<td>To: P25 PKG</td>
<td>Devices shall be packaged, in order of preference, on Tape &amp; Reel (One lot date code per reel shall be accepted), Sections of tape from Tape and Reel, Waffle packs, Matrix Trays or the use of best Commercial Packing/Packaging procedure, practices and methods that are in effect at the supplier and have been reviewed &amp; approved by ORBITAL Parts Engineering and Supplier Quality Assurance. The use of Bulk Packaging that promotes damage to the component body and/or leads will NOT be accepted by ORBITAL. If parts are ESD sensitive, then the following applies: Components on this order are susceptible to damage caused by static electricity and are considered electrostatic discharge sensitive (ESDS). The supplier shall implement an ESD control program in accordance with ANSI/ESD S20.20 for any activity that designs, tests, inspects, services, manufactures, processes, assembles, installs, packages, labels, or otherwise handles the components. Component packaging shall be either conductive or static dissipative and shall identify the components as ESDS</td>
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<td>08/14/14</td>
<td>Ecn-85700</td>
<td>Add Quality Clause J4</td>
<td>J4 INSP DATA The supplier shall submit a completed &amp; signed copy of the Mechanical Part Pre-Ship Inspection Check List (Figure A.3) to Orbital Supplier Quality at e-mail address <a href="mailto:supplier.quality@orbital.com">supplier.quality@orbital.com</a> for review and approval prior to shipment of any PO Line Items. Added Figures A.3– Mechanical supplier checklist. Ecn-93792</td>
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<td>AD</td>
<td>12/05/14</td>
<td>Modify FDNC’s C1, C1X, C2, C3 and C3X to add “In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment.” to each FDNC. Ecn-95683</td>
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Appendix A.
Figure A-1
Instructions for Completing Supplier Quality Assurance MIP/Source Inspection Surveillance Request….18
Figure A-2
Supplier Quality Assurance MIP/Source Inspection/Surveillance Request........................................19
Figure A-3
Mechanical Part Pre-Ship Inspection Checklist................................................................................20
1. PURPOSE
Supplier Quality Assurance Clauses are added to Subcontracts and Purchase Orders by Orbital Supplier Assurance as needed per program and product requirements.

2. REFERENCES
541-PG-8072.1.2 Goddard Space Flight Center Fastener Integrity Requirements
TO-GD0014 Supplier Quality Assurance Clauses (Special Processes)
TO-GD0004 Supplier Quality Assurance Codes (For Internal Orbital Use Only)
TO-GD0006 Supplier Quality Assurance Codes (STD SQA Clauses for PRs)

3. DEFINITIONS
Quality Assurance Clauses – Also referenced to as; Quality Codes, Inspection Codes and Flow Down Note Codes

4. ACRONYMS/ABBREVIATIONS
APG Advanced Programs Group
AQL Acceptable Quality Level
C of C Certificate of Conformance
ESA European Space Agency
ESD Electro Static Discharge
GIDEP Government Industry Data Exchange Program
GQAR Government Quality Assurance Representative
HAZ MAT Hazardous Material
NCR Non-Conformance Report
PO Purchase Order
PR Purchase Requisition
QA Quality Assurance
SA Supplier Assurance
SSG Space Systems Group
5. INSPECTION CODES

SUPPLIER QUALITY ASSURANCE

Orbital Sciences Corporation shall mean Orbital. Notwithstanding any other provisions, all articles furnished hereunder are subject to the Flow Down Note Codes and other Special Processes in the Item Description of the Purchase Order. Articles provided under the Purchase Order will not be accepted by Orbital if the Supplier fails to submit certification, documentation, test data, and reports as specified.

C1  Manufacturing Origin C of C
The supplier shall furnish a Certificate of Conformance that includes the manufacturer's name, location and/or Cage Code, Part Number (and revision, if available) with each shipment. This Certificate of Conformance shall assure that the articles shipped have been manufactured in accordance with and verified to applicable drawings and specifications. In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment. The supplier is either the manufacturer or an authorized distributor of the item being provided. All components of the item being provided have been manufactured or procured by the supplier from either the manufacturer or an authorized distributor of the manufacturer and that all material documentation, functional test reports and inspection records are on file at the supplier and/or manufacturer's facility and are available for Orbital and Government review.

C1X  C of C
The supplier shall furnish a Certificate of Conformance. In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment. NOTE: For Use On Non-Flight Procurements Only.

C2  Manufacturing Origin C of C
The supplier shall furnish a Certificate of Conformance that includes the manufacturer's name, location and/or Cage Code, and the Cage Code of the vendor if different than manufacturer with each shipment. The supplier's Certificate of Conformance shall indicate the material specification and revision level (if available) of each item shipped. The supplier's Certificate of Conformance shall be identified with Lot Number and/or Date Code, Date of Manufacture (if available), Part Number, (revision and serial number, if available) and be signed by a responsible representative indicating the authority of the signing individual. This Certificate of Conformance shall assure that the articles shipped have been manufactured in accordance with and verified to applicable drawings and specifications. In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment. The supplier is either the manufacturer or an authorized distributor of the item being provided. All components of the item being provided have been manufactured or procured by the supplier from either the manufacturer or an authorized distributor of the manufacturer and that all material documentation, functional test reports and inspection records are on file at the supplier and/or manufacturer's facility and are available for Orbital and Government review.
C3 Manufacturing Origin C of C By executing the act of product shipment the supplier certifies that the product complies with all purchase order requirements. This Certificate of Conformance shall assure that the articles shipped have been manufactured in accordance with and verified to applicable drawings and specifications. In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment. The supplier is either the manufacturer or an authorized distributor of the item being provided. All components of the item being provided have been manufactured or procured by the supplier from either the manufacturer or an authorized distributor of the manufacturer and that all material documentation, functional test reports and inspection records are on file at the supplier and/or manufacturer's facility and are available for Orbital and Government review. The supplier further certifies that objective evidence to substantiate certification is on file and available for review. Objective evidence includes the following types of information:

a. The manufacturer's name, location and cage code, (if not the supplier)
b. The lot number, production date and serial number if applicable
c. The specification or drawing, revision, and date
d. The grade, type, or value for which the material was inspected / tested
e. The number of specimens inspected/tested
f. The type of inspection/test, i.e., attribute or variable
g. The location and date of inspection/test
h. The location where inspection/test data will be available for review by Orbital SSG/APG and/or Orbital SSG/APG customer(s)
i. Identification of the authorized agent (including title) that approved shipment.

C3X Manufacturing Origin C of C Certification of Conformance If an "X" appears after the "C3", the supplier shall provide with the shipment a signed Statement of Quality which identifies all the objective evidence contained in C3 is on file and available for review. This Certificate of Conformance shall assure that the articles shipped have been manufactured in accordance with and verified to applicable drawings and specifications. In the event the supplier intends to deliver product that does not meet the drawing/specification requirements, the supplier shall notify Orbital of the nonconformance and obtain Orbital approval of the disposition prior to shipment. The supplier is either the manufacturer or an authorized distributor of the item being provided. All components of the item being provided have been manufactured or procured by the supplier from either the manufacturer or an authorized distributor of the manufacturer and that all material documentation, functional test reports and inspection records are on file at the supplier and/or manufacturer's facility and are available for Orbital and Government review and when Source Inspection has been performed, a completed copy of the source acceptance form must accompany the shipment.

C4 CAL SYS The supplier shall provide and maintain a calibration system in accordance with ISO 17025 and ANSI/NCSL Z540.1 (1994 or later revision). Orbital reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the calibration system. If calibrated equipment is delivered to this purchase order it shall be accompanied by a Certification of Calibration which meets the requirements of ISO17025 and ANSI/NCSL Z540.1 (1994 revision or later).

C5 CAL SYS The sub-contractor shall establish and maintain documented procedures to control, calibrate and maintain inspection, measurement and test equipment (including test software) used by the sub-contractor to demonstrate the conformance of product to the specified requirements. Inspection, measuring and test equipment shall be used in a manner which ensures that the measurement uncertainty is known and is consistent with the required measurement capability (use ISO 17025 as a guide).

C6 CORRECTIVE ACTION Acceptance of this Purchase Order obligates the supplier to perform, upon request, a corrective action investigation when discrepant materials are received by ORBITAL SSG/APG. A written report shall be furnished, within a reasonable time period, which is specific and conclusive to prevent a recurrence of the discrepancy.

C7 DECLARATION of CONFORMITY The supplier shall furnish a Declaration of Conformity that includes the manufacturer's name and address, product description, the European directives complied with, standards used to verify compliance with the directives, name of notified body if required, and signed by a responsible representative indicating the authority of signing individual. The supplier may affix the CE mark to the product after completion of the Declaration of Conformity.

D1 DATA CHEM The supplier shall maintain actual physical and chemical analysis reports which show actual measured parameters in accordance with applicable Military, Federal, and/or ORBITAL SSG/APG drawings/specifications/standards. Reports shall be directly traceable to the raw material provided to manufacture the end item, and shall be available to the Government or ORBITAL SSG/APG upon request.

D1X Reserved

D2 DATA CHEM A validated and legible report must accompany each shipment made to ORBITAL SSG/APG against each item of this purchase order. The report shall indicate the percentage of each element that makes up the chemical composition of all raw materials and the specified physical properties of all raw materials. The report shall specifically identify the material by reference to the number of the melt, the cast heat lot, or other similar designation, and must indicate the applicable specification revision and the purchase order number.
D3 FAILURE ANALYSIS The Sub-contractor shall perform a failure analysis on item(s) returned under this Contract and shall provide to ORBITAL SSG/APG, as a minimum, the following information with the shipment or as directed by contract:

1) Date of Report
2) Contract Number
3) Sub-contractor's name & address
4) Part name, number, revision level, and serial/number (or lot/date code)
5) NCR Report number (if specified by Contract)
6) Specific and contributory causes of failure
7) List of parts required for repair of item(s)
8) Corrective action taken to preclude recurrence and affectivity by date or serial number of corrective action;
9) Signature and title of Sub-contractor's Quality Representative approving the failure analysis report.

D4 DATA PKG The vendor/subcontractor shall provide a data package at completion of hardware build activity that shall document the "As Built" configuration and the inspections and tests utilized to verify that configuration. Inspection and test equipment used on this contract shall be calibrated at intervals not to exceed one year, to a measurement standard traceable to standards.

D5 DATE CODE The total quantity of each electronic component delivered for each shipment on this purchase order line item shall be limited to no more than two (2) date codes. All items for each date code shall be separated and identified on supplier's packing list and Certificate of Conformance.

D6 DATE CODE Parts delivered to ORBITAL shall be less than 24 months old (the part date code shall be used for this assessment). Parts that are older than 24 months may be accepted provided the manufacturer performs and delivers to Orbital acceptance testing which demonstrates that the part is still functional and has not experienced any degradation during storage. This acceptance testing shall consist of a "re-life" procedure similar to ESA specification ECSS-Q-ST-60-14C or equivalent. An industry standard re-life procedure or the manufacturer's standard re-life procedure is also acceptable with Orbital approval.

D6V DATE CODE Parts delivered to ORBITAL shall be less than 60 months old (the part date code shall be used for this assessment). Parts that are older than 60 months may be accepted provided the manufacturer performs and delivers to Orbital acceptance testing which demonstrates that the part is still functional and has not experienced any degradation during storage. This acceptance testing shall consist of a "re-life" procedure similar to ESA specification ECSS-Q-ST-60-14C or equivalent. An industry standard re-life procedure or the manufacturer's standard re-life procedure is also acceptable with Orbital approval.

D7 DATE CODE All parts delivered to the requirements of this Purchase Order Line Item shall be from a single manufacturing lot date code. Mixed lot date codes will not be accepted unless specifically approved in writing by ORBITAL SSG/APG.

D7V DATE CODE Reserved.

D8 DEVIATIONS Deviations from drawings, specifications, or other Purchase Order requirements must be reported to the Buyer for review and approval. If approved, ORBITAL SSG/APG will provide written authorization for shipment of non-compliant material. Failure to comply may result in rejection of the shipment and will reflect on the supplier's quality rating.

D9 DROP SHIP Products are to be drop shipped to the address shown on the purchase order. The Quality Assurance related paperwork (certification, inspection results, test results, etc.) and a copy of the packing list are to be mailed to the Orbital Address as instructed in the Purchase Order note.

E1 ELEMENT EVAL Element evaluation per MIL-PRF-38534 is required.

E2 ESD Components on this order are susceptible to damage caused by static electricity and are considered electrostatic discharge sensitive (ESDS). The supplier shall implement an ESD control program in accordance with ANSI/ESD S20.20 for any activity that designs, tests, inspects, services, manufactures, processes, assembles, installs, packages, labels, or otherwise handles the components. Component packaging shall be either conductive or static dissipative and shall identify the components as ESDS. With the acceptance of this FDNC the vendor further certifies that all individual parts and/or assemblies that are ESD Sensitive Class 0, in accordance with MIL-HDBK_103 and/or MIL-PRF-38535, have been processed and handled in accordance with industry approved ESD Requirements.

G1 GIDEPO The Supplier shall establish and implement a system to review and take action, as necessary, on Government-Industry Data Exchange Program (GIDEPO) or The European Space Agency (ESA)equivalent. The Supplier shall be responsible for monitoring and reporting GIDEPO or ESA equivalent Alerts for impact to flight hardware delivered to ORBITAL, or shall provide an Alternate Method, Process or Procedure to notify Orbital of any GIDEPO or ESA Alerts received by the Supplier or their material vendors. Suspect parts identified on GIDEPO or ESA equivalent Alerts shall be segregated from all stores, kits, assemblies, and any other allocation used as a source of parts for ORBITAL flight hardware for disposition by an MRB.

G2 Reserved

H1 HAZ MAT Prior to shipment or transfer to ORBITAL SSG/APG, the supplier shall provide the appropriate Material Safety Data Sheet(s), where applicable, for any chemical substance that is on the list compiled and published by the Environmental Protection Agency for Hazardous Material, as defined in Appendix A of FED-STD-313.
H2  HAZ MAT Use of Class I Ozone Depleting Substances (ODS) on this order is prohibited. Class I ODS includes, but is not limited to:
   a. Halons
   b. Chlorofluorocarbons (CFCs)
   c. Other controlled substances - Carbon Tetrachloride (Tetrachloromethane), Methyl Chloroform (1,1,1-Trichloroethane), and Methyl Bromide

J1  INSPIR DATA Each shipment shall be accompanied by a legible and reproducible copy of the Supplier's Inspection Data Report. Report shall include actual data for interface and/or critical dimensions and an indication of acceptance for non-interface and/or non-critical dimensions in addition to part drawing number (with revision), part name, quantity inspected and sample inspection level. In the event interface and/or critical dimensions are not specified, actual dimensional data for all dimensions shall be reported. An authorized company representative shall authenticate this report.

J2  INSPIR DATA The supplier shall submit parametric data to show compliance with drawing requirements. A range of data results and "go/no-go" results (except for pure attribute data) is not acceptable. Hardware shall be uniquely identified so that the parametric inspection results can be matched with hardware inspected. The data shall consist of, as a minimum, each variable measured, its tolerance, drawing zone, and the actual measurement for each item.

J3  FIRST ARTICLE INSPIR First article inspection shall be conducted by the supplier. The sample shall have been fabricated using the same parts, materials, processes, and location proposed for full production. Reports of acceptable first article inspection shall accompany the first article delivered and shall include all dimensional measurements and results of electrical, mechanical, and non-destructive inspections and tests and shall show that the part meets all requirements. CAUTION: Commencement of the production run prior to first article acceptance by ORBITAL SSG/APG is at the supplier’s risk.

J4  INSPIR DATA The supplier shall submit a completed & signed copy of the Mechanical Part Pre-Ship Inspection Check List (Figure A.3) to Orbital Supplier Quality at e-mail address supplierquality@orbital.com for review and approval prior to shipment of any PO Line Item.

J5  Reserved

J6  INSPIR The supplier is authorized to perform sampling inspection in accordance with ANSI/ASQ Z1.4. Critical dimensions are to be inspected and recorded to a 4.0 AQL and provided with each PO line item shipped.

J7  Reserved

J8  Reserved

J9  INSPIR Magnetic particle inspection is required. All data submitted must be identifiable to the items inspected. Where no accept/reject criteria is called out on the ORBITAL drawing, the criteria shall be "no visual defects allowed". Defects are defined by ASTM-E-1444.

J10 INSPIR Penetrant Inspection is required ASTM-E1417, Sensitivity Level 3. All data submitted must be identifiable to the items inspected. Where no accept/reject criteria is called out on the ORBITAL Drawing, the criteria shall be "no visual defects allowed". Defects are defined by ASTM-E-1417.

J11 INSPIR The material on this purchase order requires radiographic inspection per ASTM-E-1742 or equivalent. The x-ray film and a legible copy of the report shall accompany the material when delivered to ORBITAL.

J12 INSPIR The supplier shall perform dimensional inspection on a minimum of one (1) piece in accordance with the applicable ORBITAL or Supplier Drawings. The Suppliers Inspection Report shall list the required dimension and tolerance per the ORBITAL or Supplier Drawing, Record the Actual Inspected Dimension, which can include a range of actual inspected dimensions, and show the quantity of items inspected. The Supplier shall provided a copy of their Inspection Report to ORBITAL with each shipment.

J13 INSPIR Process capability inspection shall be conducted by the supplier on at least the first five (5) pieces. Every dimension and characteristic shall be inspected. The variables data resulting from this inspection shall accompany these pieces upon delivery to ORBITAL. This data shall consist of, as a minimum, each variable measured, its tolerance, drawing zone or paragraph, and the actual measurement for each piece.

J14 INSPIR ORBITAL’s customer and/or the Government reserve the right to inspect any or all of the materials or services on this order at the supplier’s plant.

J15 INST Special instructions/requirements apply to this PO. See the PO for details.

M1 MARKING The supplier shall mark exterior shipping containers with a statement equivalent to the following: “Receiving Department - Do not open containers. Forward Receiving Reports and unopened container to Receiving Inspection”.

M2 MARKING Items furnished under this purchase order must be identified by manufacturing lot or batch number. Where impractical to stamp individual parts due to size or shape, the lot or batch number shall be stamped on identifying tag of the smallest unit package and must be referenced on the packing list, certification, and other applicable documents. Identification marking shall be per MIL-STD-130 (latest revision) or applicable specification. NOTE: Lot control information shall be retained for a minimum of 3 years after delivery of material unless otherwise specified in the order or specification.

M3 FURN MAT’L Items manufactured under this purchase order shall be fabricated from ORBITAL SSG/APG furnished material. The supplier shall not substitute for or dispose of ORBITAL SSG/APG furnished material except as instructed in writing by ORBITAL SSG/APG. Unused material, properly identified, shall be returned with the last shipment of fabricated parts.

ORBITAL PROPRIETARY DATA
**M4** Reserved

**M5** NO SN LABELS Diodes supplied under this PO shall not have serial number labels applied to them.

**N1** NASA – HARNESSES The supplier shall provide and maintain a system that complies with NASA-STD 8739.4 "Crimping, Interconnecting Cables, Harnesses, and Wiring."

**N2** NASA – CONFORMAL COATING The Supplier shall provide and maintain a system that complies with NASA-STD 8739.1 "Workmanship Standard for Staking and Conformal Coating of Printed Wiring Boards and Electronic Assemblies."

**N3** Reserved

**N4** Reserved

**N5** NASA – SOLDERING The Supplier shall provide and maintain a system that complies with NASA-STD-8739.3, “Soldered Electrical Connections.”

**N6** Reserved

**N7** NASA – SURFACE MOUNT The Supplier shall provide and maintain a system that complies with NASA-STD-8739.2, “Requirements for Surface Mount Technology.”

**N8** Reserved

**N12** NDT Non-destructive testing required. See PO for specific requirements.

**N13** S/W REQUIREMENTS The Sub-Contractor shall plan, develop, and implement those practices and procedures that are necessary to assure compliance with the following requirements for hardware designed, tested, supported, or operated by software. Sub-Contractor shall provide controls to ensure that different software program versions are accurately identified and documented, that no unauthorized modifications are made, that all approved modifications are properly incorporated, and that software used for testing is the proper version. Sub-Contractor shall ensure that support software and computer hardware to be used to develop and test software or hardware under the procurement agreement are acceptable to ORBITAL. Sub-Contractor shall establish a baseline of procured or developed software by performing validation tests that include demonstration of pass/fail criteria.

**O1** OFF the SHELF ITEMS Items and/or material on this PO have been procured as standard catalog items. The initial shipment of these items shall be accompanied by the catalog/drawing from which these items were purchased for verification at Orbital Receiving Inspection Department.

**O4** PRE CAP INSPECTION Units to be delivered under this Contract require pre-cap inspection by Orbital at the supplier’s facility. Inspection shall be performed per the applicable drawing/specification. The Supplier shall notify the Orbital Buyer/Subcontracts Representative 5 days prior to when units will be ready for this inspection. Supplier shall complete and submit the Supplier Quality Assurance MIP/Source Inspection/Surveillance Request form (Figure A.1) to the Orbital Buyer/Subcontractor Representative. The supplier shall have available copies of his actual inspection/test results.

**O5** Acceptance at Destination Articles ordered under this contract are subject to final acceptance at the destination as set forth on the face of the Contract.

**P1** PKG Special preservation, packaging, and packing is required. See PO for specific requirements.

**P2** PKG Components shall be packed in moisture barrier bags with desiccant material and a humidity indicator card in the bag.

**P3** PKG Pink Polyethylene Antistatic (Dissipative) Material (also known as Pink Poly) is NOT an Orbital Preferred or Recommended Packaging Material. Reference GIDEP ALERT Numbers G6-P-04-01 and KE-A-89-02.

**P4** Reserved

**P5** PKG Package on tape and reel per EIA-481-2-A or equivalent, lead end of tape must be bare for a minimum of 13.00 inches. The cover tape utilized shall have static dissipating properties on both the backing and adhesive sides, such as 3M #2675. The supplier shall deliver the total component quantity per PO line item on a single reel with a single date code. An exception to this would be if the total PO Line Item quantity exceeds what can be put on one reel, then multiple full reels with a single date code can be accepted. Date codes shall not be mixed.

**P6** PKG Package in matrix tray.

**P7** PKG Package in waffle pack.

**P8** PKG Package in tube only.

**P9** PKG Components shall be packed and sealed in moisture barrier (dry-pack) bags/containers to prevent moisture penetration and oxidation. Exterior containers shall contain a statement equivalent to the following: "Receiving-- and Receiving Inspection Department: Do not open interior containers. Check for damage to containers and for correct part number (identified on packages/labels/paperwork) only."
P10 PKG In cases where packing and packaging requirements are not specified on the drawings, specifications and/or purchase order, packing and packaging shall conform to the following requirements:

a. All items shall be enclosed within wrappings, bags, cartons, boxes, or other containers to the extent necessary to provide protection from hazards of contamination and damage (including ESD) encountered in general handling, shipping, and storage.

b. Materials used to enclose parts shall be dry and in accordance with good commercial practice. Material used in direct contact with metal surfaces shall not cause or promote corrosion.

c. All items with the same part number may be packed together in the same container, provided they are individually segregated to prevent damage during shipping.

d. Connectors, transistors, integrated circuits and other items that have pins that extend beyond the body of the items shall be packed to prevent the pins from being bent or broken during shipment or storage.

e. Cushioning material shall be dry, dust free and shall not cause or promote corrosion and should be fungus resistant.

f. Preferred materials are rubberized hair, styrofoam or cellulose. The use of straw, shredded newspaper or crumpled newspaper is permissible only if the items are enclosed in heat sealed polyethylene bags.

g. Package markings shall be clean and legible and applied to all outside containers as well as all intermediate containers. The markings shall contain as minimum, part number, purchase order number, quantity and special handling instructions.

h. After fabrication the supplier shall have items cleaned of smudges, metal chips, or any other foreign material which might detract from the intended operation. All corrosive materials shall be removed and the cleaning process shall have no deleterious effect on the equipment or parts.

i. Packing and packaging procedures, practices, and methods in effect at all suppliers shall be subject to review and approval by the ORBITAL Quality representative.

P11 Reserved

P12 Reserved

P13 Reserved

P14 Reserved

P15 Reserved

P16 PARTS Supplier shall furnish wire on this order with one (1) continuous length per reel. Reels with multiple lengths will not be accepted. Orders under 500 feet shall be the length per reel as specified on the purchase order. Orders over 500 feet shall be a minimum 500 feet per reel with any excess footage not to be less than 100 foot per reel or as specified on the purchase order.

P17 INSPLAN A complete Quality inspection plan must be submitted by the supplier and approved by ORBITAL prior to the acceptance of any items on this purchase order. The inspection plan must address all drawing/specification requirements including drawing notes. The inspection plan shall address what, how, when and where inspections are taking place. The inspection plan must be able to stand alone and specifically reflect all drawing and specification requirements.

P18 QA PLAN The supplier shall provide a Quality Assurance Plan for ORBITAL approval within 30 days after contract award. The plan shall identify the supplier’s management, policies, standard practices, job instructions, and work instructions. The plan shall describe requirements for quality throughout all areas of contract performance, including fabrication, processing, assembly, inspection, test, packaging, storage, and shipping. The plan shall include flow charts showing the complete flow of material from receipt to final shipment.

P19 TEST PROC Supplier’s test procedures require approval by ORBITAL prior to the start of any test.

P20 PROD ID An identification tag impervious to climatic conditions shall be wired to the outlet port of each container and shall contain the following information:

a. Product name

b. Specification number with revision letter

c. Type designation

d. Federal Stock Number (FSN),

e. Quantity

f. Name of manufacturer

g. Date of manufacturer

h. Lot identification number

P21 Reserved

P22 PWB Articles defined in this Purchase Agreement are subject to additional requirements per Orbital Sciences Specification Number P5998008, which must be met to achieve compliance to contract requirements. Articles will not be accepted by Orbital SSG/APG if Subcontractor fails to comply with these requirements.

P23 PWB The supplier shall furnish test samples, coupons, and microsections for each panel traceable by lot, batch, or serialization to the items delivered. Test results, regardless of PWB specification, must be sent with the lot.

P24 PWB Each printed wiring board/flex shall be packaged individually in silver saver bags that meet either, MIL-PRF-131, Class I, MIL-PRF-81705D, MIL-D-117E, Type III, Class E, Style 1. A desiccant per MIL-D-3464 and humidity indicator shall be placed inside each bag and the bags shall be heat sealed. There shall be adequate space between the heat seal and the board to allow opening and resealing of the bag a minimum of three times. At a minimum, the part number, date code and the panel location designator (or s/n) shall appear on each individual bag.
P25 PKG Devices shall be packaged, in order of preference, on Tape & Reel (One lot date code per reel shall be accepted), Sections of tape from Tape and Reel, Waffle packs, Matrix Trays or the use of best Commercial Packing/Packaging procedure, practices and methods that are in effect at the supplier and have been reviewed & approved by ORBITAL. Parts Engineering and Supplier Quality Assurance. The use of Bulk Packaging that promotes damage to the component body and/or leads will NOT be accepted by ORBITAL.

If parts are ESD sensitive, then the following applies: Components on this order are susceptible to damage caused by static electricity and are considered electrostatic discharge sensitive (ESDS). The supplier shall implement an ESD control program in accordance with ANSI/ESD S20.20 for any activity that designs, tests, inspects, services, manufactures, processes, assembles, installs, packages, labels, or otherwise handles the components. Component packaging shall be either conductive or static dissipative and shall identify the components as ESDS.

P26 PKG All Wood Packaging Materials (WPM), such as pallets, crates, boxes and pieces of wood used to support or brace cargo, must meet import requirements and be free of timber pests before entering or transiting through the United States. All WPM entering or transiting through the United States must be either heat treated or fumigated with methyl bromide as outlined in the International Standard of Phytosanitary Measures: Guidelines for Regulating Wood Packaging Material in International Trade (ISPM 15). The WPM must also be marked with an approved international logo, certifying it is compliant to ISPM 15. The WPM must also be marked with the supplier’s logo, name, abbreviation of name, or other methods that positively identifies the supplier. The serialization shall be capable of passing the solderability tests specified in MIL-STD-202 (Method 208), MIL-STD-883 (Method 2026), J-STD-003 or MIL-STD-883 (Method 2003), as applies. Rigid printed wiring boards shall be capable of passing the solderability tests specified in IPC-TM-650. Parts with tin finish shall not have a percentage of tin greater than 97%.

Q1 QUAL SYS The supplier shall establish, document, implement and maintain a "Registered" ISO 9001 or AS 9100 Quality Management System. ORBITAL reserves the right to conduct an assessment of the supplier's quality system.

Q2 QUAL SYS The supplier shall establish, document, implement and maintain a Quality Management System compliant to ISO 9001 or AS9100 requirements. ORBITAL reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the quality system.

Q3 Reserved

Q4 Reserved

Q25 FURTHER PROCESSING (Gilbert Use Only) Further processing required. Notify Parts, Materials and Processes (PM&P) Engineer or Quality Engineer upon receipt for disposition (prior to acceptance).

Q25A FURTHER PROCESSING – PIND (Gilbert Use Only). Particle Induced Noise Detection (PIND) required. Notify Parts, Materials and Processes (PM&P) Engineer upon receipt for disposition (prior to acceptance).

Q25B FURTHER PROCESSING – DPA (Gilbert Use Only). Destructive Physical Analysis (DPA) required. Notify Parts, Materials and Processes (PM&P) Engineer upon receipt for disposition (prior to acceptance). Single lot date code required.

Q25C FURTHER PROCESSING – “J” Lead Attachment (Gilbert Use Only). “J” Lead attachment is required. Notify Parts, Materials and Processes (PM&P) Engineer upon receipt for disposition (prior to acceptance).


Q25F FURTHER PROCESSING – Capacitor Humidity Testing (Gilbert Use Only). Capacitor humidity testing is required. Notify Parts, Materials and Processes (PM&P) Engineering upon receipt for disposition (prior to acceptance). Single lot date code required.

R1 RECORDS All supplier records for articles and materials supplied to Orbital on this purchase order shall be retained in a safe and accessible location by the supplier for life of mission plus one year or as specified by contract.

R2 RES REP ORBITAL representatives will be placed in the supplier's facility. Suitable equipment, facilities, and administrative support shall be provided in the performance of their duties.

S1 SERIALIZATION Individual serialization is required. Apply serial number to item as indicated per drawing. If no other system is in place, use of a four (4) digit numerical number starting with 0001 is preferred. Serial number must be prefixed with the supplier's logo, name, abbreviation of name, or other methods that positively identifies the supplier. The serialization shall continue in a contiguous manner under subsequent PO’s.

S2 SOLDERABILITY External leads, pins, and terminals of all parts shall be capable of passing the solderability tests specified in MIL-STD-202 (Method 208), MIL-STD-750 (Method 2026), J-STD-003 or MIL-STD-883 (Method 2003), as applies. Rigid printed wiring boards shall be capable of passing the solderability tests specified in IPC-TM-650. Parts with tin finish shall not have a percentage of tin greater than 97%.

S2X LEAD FINISH Lead finish shall be solder coated with a nominal composition of Sn60 or Sn63 in accordance with MIL-PRF-19500, appendix H. Compliance with this requirement shall be included on the C of C or referenced within the documentation received with the shipment. The C of C and/or documentation received with the shipment shall reference whether the solder is composition Sn60 or Sn63.
S3 IN-PROCESS SOURCE SURVEILLANCE Source Surveillance shall be conducted by Orbital at the Supplier's facilities or where designated in this contract prior to shipment. Inspection/test and in process inspection/test of the articles defined in this contract shall be performed by Supplier and shall be subject to witness by Orbital's Quality Representative. Supplier shall contact the Orbital Buyer/Subcontractor Representative prior to the start of fabrication so that Mandatory In Process (MIP) inspection/tests points can be agreed upon. Supplier shall complete and submit the Supplier Quality Assurance MIP/Source Inspection/Surveillance Request form (Figure A.1) to the Orbital Buyer/Subcontractor Representative a minimum of five (5) business days prior to the requested date. Supplier shall have available and present upon request, documented evidence of any inspection/test performances. This may be used for the acceptance of hardware or material. Required documentation for shipment must be completed and signed by Supplier's authorized Quality personnel, and available for the Orbital Source Acceptance Representative's review. When MIP Source Inspection has been performed, a completed copy of the Source Inspection Data Sheet must accompany the shipment.

S3X Reserved

S4 FINAL SOURCE INSPECTION Source Inspection of final acceptance inspection/test shall be conducted by Orbital at the Supplier's facilities, or where designated in this contract, prior to shipment. Inspection and/or test performed in accordance with an agreement between Supplier and an Orbital Source Representative will fulfill the acceptance/test requirements of Orbital. Supplier shall complete and submit the Supplier Quality Assurance MIP/Source Inspection/Surveillance Request form (Figure A.1) to the Orbital Buyer/Subcontractor Representative, a minimum of five (5) business days in advance of the requested final acceptance inspection/test/witness activity. Supplier shall have available and present upon request, verifiable objective evidence of the article fabrication inspections. Required documentation for shipment must be completed, signed by the Supplier's authorized Quality personnel and available for the Orbital Quality Representative's review prior to completion of final source inspection. When Source Inspection has been performed, a completed copy of the Source Inspection Data Sheet must accompany the shipment.

S5 SOURCE INSPECTION Supplier shall secure access for ORBITAL SSG/APG personnel to subcontracted activity associated with this procurement.

S6 GOVT SOURCE INSPECTION All work on this order is subject to inspection and test by the government at any time and place. The government quality representative who normally services the supplier's plant (or if none, to the nearest Army, Navy, Air Force, or Defense Supply Agency or NASA inspection office) shall be notified immediately upon receipt of this order and again 48 hours in advance of the time that articles or materials are ready for inspection or test. In the event the representative office cannot be located ORBITAL's Purchasing Agent shall be notified immediately.

S7 SPACE FLIGHT This item is for use on an unmanned spacecraft.

S7X MANNED SPACE FLIGHT For use in manned space flight, materials, manufacturing and workmanship of the highest quality standards are essential to astronaut safety. If you are able to supply the desired items with a quality which is greater than that of the items specified or proposed, you are requested to bring this fact to the immediate attention of the purchaser.

S8 SPC Statistical Process Control (SPC) is authorized by this purchase order. All characteristics controlled by SPC must show Cpk's of 1.3 or higher. All characteristics not controlled by SPC must be inspected by the provisions of this purchase order. Supplier shall submit inspection data and/or SPC charts from his statistical samples, identified to the item inspected detailing drawing conformance.

S9 SPEC PROC Special Process Certificate of Conformance - Adequate control of supplier's special processes and supplier's sub-tier special processors pertinent to this order is required. When products are delivered, the supplier shall provide a Certificate of Conformance listing all special processes (see ORBITAL Special Processes list TO-GD0014) the applicable specification (including the revision level used), and the company (supplier or sub-tier) performing the special process. The supplier shall certify that all special processes comply with the applicable specifications. ORBITAL reserves the right to verify compliance with this requirement by performing source inspections or audits/surveys at the facility performing the special process.

S10 SPEC PROC Special qualification, approval, or certification of operator is required as specified under the provisions of the PO.

S11 Reserved

S12 SPEC PROC Special Process Certificate of Compliance required. Special process/processes shall be performed in accordance with ORBITAL and/or military specifications listed within the design drawings. When products are delivered, the supplier shall provide a Certificate of Conformance listing all special processes, the applicable specification (including the revision level used) and the company (supplier or sub-tier) performing the special process. The supplier shall certify that all special processes comply with the applicable specifications.

S13 SQA The supplier shall provide and maintain a Software Quality system which is acceptable to ORBITAL. ORBITAL reserves the right to conduct a survey/audit of the supplier's facilities to determine the adequacy of the system.

S14 SOW/PF Articles defined in this Purchase Agreement are subject to additional requirements per a Statement of Work or Performance Specification, which must be met to achieve compliance to contract requirements. Articles will not be accepted by ORBITAL if Sub-contractor fails to comply with these requirements.
S15 SUPPLIER APPROVAL. Supplier shall submit the following data for approval a minimum of 45 days prior to use:
   a. Methods and types of critical processes to be used
   b. Locations where critical processes will be performed
   c. Inspection stages and attributes to be observed
   d. Handling and transportation precautions required for protection of the product
   e. A definition of materials and methods for preservation and packaging of the product. Revisions or variations to the submitted baseline shall not take place without prior ORBITAL approval.

S16 SPECIFICATIONS. Specifications stated or referenced herein were applicable at the time of the last code revision. The supplier shall be responsible for insuring latest revisions of the stated specification, its current supersedent, or its ESA equivalent is utilized.

S17 SUPPLIER SHIPPING. Item shipments against this purchase order shall be made in lot quantities as provided in the delivery schedule. Partial shipments will not be accepted unless expressly approved by the ORBITAL Buyer.

S18 SUPPLIER SHIPPING. This material is perishable. Supplier shall provide with each shipment:
   a. Date of manufacture
   b. Expiration date
   c. Batch or lot number
   d. Special handling conditions, if applicable. At time of receipt by ORBITAL, the material shall comply with shelf life requirements specified in the purchase document. If a requirement for remaining shelf life has not otherwise been specified, the material shall have at least 75% of its total shelf life remaining at the time of receipt.
   e. Items shipped requiring special storage conditions (i.e. refrigeration and/or freezing) Shall be clearly labeled/identified on both the outside of the shipping container and the Packing List provided with shipment.

T1 EIDP. Each shipment shall be accompanied by a legible and reproducible copy of the Supplier's End Item Data Package or a legible and reproducible electronically transmitted copy shall be provided per the requirements of the Statement of Work or Purchase Order. The EIDP shall list Purchase Order number, item name, serial number, drawing and/or specification number (including revision and amendments, if applicable) and shall be authenticated by an authorized company representative attesting compliance to all applicable requirements.

T2 TESTING. Pressure testing is required. The supplier shall furnish certification that pressure testing has been performed to the purchase order requirements.

T3 TESTING. Ultrasonic testing is required. The supplier shall furnish certification that ultrasonic testing has been performed to the Purchase Order requirements.

T4 TESTING. Supplier shall provide proof of meeting the requirements set forth in 541-PG-8072.1.2 (Goddard Space Flight Center Fastener Integrity Requirements). This includes Material test reports with chemical and physical reports traceable from the raw stock to the fastener manufacturers, the fastener lot number and results of test and inspections required by the procurement specification. Also proof of all screening and inspection and test results by an organization that is independent of the manufacturer and the distributor.

T5 TEST DATA. Test data is required with each shipment. Refer to applicable drawing/specification for specific requirements. (The Supplier shall notify ORBITAL program management of acceptance test failures within 24 hours followed by a copy of the initial and final Failure Analysis Report. Supplier's documentation shall be retained on file for life of mission plus one year or as specified by contract. ORBITAL shall be notified prior to disposal of any/all documentation.)

T6 TESTING. Supplier shall use ORBITAL supplied Modem/Magnetic/Gerber data generated from schematic wire list to test printed wiring boards. Data supplied will be as follows: net list including reference designators, pin and net names; via list including location, size, layers and net reference; pad/pin number list including reference designators, part number, pin number, net and location. Supplier shall mark board(s) with a “N” in addition to normal test marking. “N” should be as close to the normal test marking as possible. The test voltage, resistance used to detect opens and the insulation resistance for shorts testing must be documented and sent with the lot being tested. Test Certification Certificate is required stating type of test, voltage, continuity resistance, insulation values used and serial numbers of the boards tested as required per drawing specification. The Test Certificate shall include Pass/Fail status of all boards tested by serial number.

T7 Reserved

T8 Reserved

T9 TRACEABILITY. The work on this PO contains hydrogen embrittlement sensitive hardware and may be subcontracted only with the prior written approval of ORBITAL and/or ORBITAL customer. The supplier shall submit with each shipment, certification of the origin of manufacture and procurement, applicable traceability, information for article delivered (e.g. date code/lot number), and part number. The certification must include the signature and title of the supplier's representative. Hydrogen embrittlement sensitive hardware supplied by distributors shall be obtained only from ORBITAL and/or ORBITAL customer designated suppliers and shall not be modified or reworked in any fashion by the distributor or his subcontractor unless specifically authorized by ORBITAL. Hardware delivered to the requirements of this purchase order are subject to ORBITAL inspection at destination and will not be accepted by ORBITAL if the supplier/distributor fails to provide certification with the hardware.
T10 TRACEABILITY Supplier shall provide and maintain a system of traceability utilized in the parts being supplied. The following items must be traceable to the hardware delivered and the line item of the ORBITAL Purchase Order, and be made available for review by ORBITAL upon request:

a. Materials  
b. Components  
c. Inspection records  
d. Test results  
e. Process control records  
f. Material certifications  
g. Process certifications

T11 TRACEABILITY A copy of laboratory and/or test reports indicating chemical composition and mechanical properties (such as tensile strength, hardness, etc.) identifiable to each lot, batch, or heat treat lot shall accompany each shipment and shall be signed by an authorized representative.

6. QUALITY RECORDS

<table>
<thead>
<tr>
<th>Record Name</th>
<th>Document or Form No.</th>
<th>Storage Location</th>
<th>Minimum Retention Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Order</td>
<td>N/A</td>
<td>Purchasing</td>
<td>One year after mission completion or as specified by contract</td>
</tr>
<tr>
<td>Subcontracts</td>
<td>N/A</td>
<td>Subcontracts</td>
<td>One year after mission completion or as specified by contract</td>
</tr>
</tbody>
</table>

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Appendix A.

Instructions for Completing Supplier Quality Assurance
MIP/Source Inspection/Surveillance Request (QSF-GD0002-01)

1. Supplier completes the applicable sections of the MIP/Source Inspection/Surveillance Request form and submits it to the Orbital Subcontracts/Purchasing Department five or more business days in advance of the desired inspection date.

2. Subcontracts/Purchasing forwards form to Supplier Quality Assurance designated representative and Program Flight Assurance Manager.

3. Program Flight Assurance Manager shall approve, waive or delegate inspection, provide FAM phone number, provide Cog-E name and phone number, provide labor and travel charge numbers, date and sign form in areas provided and return to Supplier Assurance designated representative.

4. Supplier Assurance designated representative assigns source inspector, dates and signs form and returns it to Subcontracts/Purchasing Department.

5. Subcontracts/Purchasing Department returns completed form to Supplier.

6. If Source Inspection has been delegated, the supplier shall forward a completed source inspection report attached to a copy of the delegated Source Inspection Request Form to Subcontracts/Purchasing Department. Subcontracts/Purchasing Department shall forward this report to the designated Supplier Assurance representative.

7. Source Inspector prepares for Inspection. If going outside of USA, inspector shall submit passport information to Subcontract Administrator and review import/export requirements.

8. Upon arrival at supplier location, source inspector shall:
   a. Have a copy of the Approved Source Inspection Request Form to verify items listed on the form match items presented for inspection.
   b. Verify that inspection equipment is in calibration;
   c. Review applicable documentation such as test data, as-designed vs as-built configuration reconciliation, non-conformances are documented and approved and the End Item Data Package meets contract requirements.
   d. Perform the Source Inspection and record the results.
   e. Identify items that are defective and allow supplier an opportunity to make immediate repairs or rework to correct the defect(s).
   f. Have supplier make a copy of the Source Inspection Data Sheet(s) for their own files and to include with data information package when product is shipped to Orbital.

9. Upon product receipt at Orbital, Receiving Inspection shall perform a visual inspection (damage and count) and verify that all required documentation has been received.

Figure A.1
### Supplier Quality Assurance

**MIP/Source Inspection/Surveillance Request**

*To be completed by the supplier five (5) business days prior to proposed inspection date (or program if MIP or Surveillance is implemented)*

**TO:**

(Insert Orbital Buyer or Subcontract/Supervisor’s name)

**FROM:**

**Company:**

**Street Address:**

**POC Phone No:**

**City:**

**State:**

**Zip:**

**Date Available for Inspection:**

**Program Name:** Each request limited to one Program only

**Is Inspection to take place at the above Address? Yes [ ] No [ ]**

**Inspection Type:**

- [ ] Surveillance
- [ ] In-Process Source (Quality Clause 53)
- [ ] Pre-Cap (Quality Clause 04)
- [ ] Final Source (Quality Clause 54)

*(Please indicate below if Inspection is for rework or replacement)*

- [ ] Rework
- [ ] Replacement

*(Please provide additional information as necessary)*

<table>
<thead>
<tr>
<th>PO or SC Number</th>
<th>Line Nbr</th>
<th>Orbital Part Number/Serial Number</th>
<th>Rev</th>
<th>Part Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**The Area Below is for Orbital Sciences Use Only:**

- [ ] APPROVED Orbital Sciences representative will perform inspection. See below for name of representative.
- [ ] WAIVED Orbital Sciences will NOT perform inspection at supplier’s facility. Supplier may proceed to next step.
- [ ] DELEGATED Orbital Sciences requires evidence of inspection performed by supplier. Forward inspection reports along with a copy of this completed request form to your Orbital procurement representative.

**Confirmed Date for Inspection:**

**Visiting Supplier Q.A. Representative:**

**Supplier QA Approval:**

**Date:**

**Program FAM (or delegate) Name:**

**Date:**

**FAM Signature:**

**FAM phone No:**

**Name of Cog-E:**

**Cog-E phone No:**

Email approval from FAM or delegate is considered valid. Program FAM or delegate can request waiver if justification for waiver has been provided on Form QQP-0002-02 and approved by Orbital SA Manager or 5MA Senior Director or Vice President.

**TA Number:**

**Labor Charge No:**

**Travel Charge No:**

**Request #**

*Form QQP-0002-01 Rev E*

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Figure A.2 Supplier Quality Assurance MIP/Source Inspection/Surveillance Request

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# Mechanical Part Pre-Ship Inspection Checklist

The verifications below are required on 100% of the mechanical parts being presented. This checklist shall be provided to Orbital at Supplier.Quality@orbital.com before shipment.

<table>
<thead>
<tr>
<th>PO/Line</th>
<th>P/N:</th>
</tr>
</thead>
</table>

## HARDWARE

<table>
<thead>
<tr>
<th></th>
<th>VERIFIED</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>FOD/Contamination – Surface, interior, all bolt holes, mounting holes, and screw sockets.</td>
<td>☐</td>
</tr>
<tr>
<td>2.</td>
<td>FOD/Contamination – Flux residue.</td>
<td>☐</td>
</tr>
<tr>
<td>3.</td>
<td>Brazing/Welding/Adhesives – Verify all joints per the applicable specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>5.</td>
<td>Brazing/Welding/Adhesives – Non-destructive(radiographic/ultrasonic) inspection per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>7.</td>
<td>Coating – Chemfilm coating on all surfaces per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>8.</td>
<td>Coating – Surface Resistance per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>9.</td>
<td>Coating – Scratches, chips, or exposed areas to the coating.</td>
<td>☐</td>
</tr>
<tr>
<td>10.</td>
<td>Damage – Scratches, dents, voids, pitting, tool marks in the material</td>
<td>☐</td>
</tr>
<tr>
<td>11.</td>
<td>Helicoils – Proper kinds of helicoils per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>13.</td>
<td>Helicoils – Installed per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>14.</td>
<td>Machining – Sharp edges, burrs, raised edges</td>
<td>☐</td>
</tr>
<tr>
<td>15.</td>
<td>Marking – Part marking and serial numbers per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>16.</td>
<td>Hardware – All for cutting and stripping per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>17.</td>
<td>Dimensions – All dimensions per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>18.</td>
<td>Dimensions – All through holes and mounting hole locations &amp; sizes</td>
<td>☐</td>
</tr>
<tr>
<td>19.</td>
<td>Dimensions – Flatness per specifications or drawings.</td>
<td>☐</td>
</tr>
</tbody>
</table>

## DOCUMENTATION

<table>
<thead>
<tr>
<th></th>
<th>VERIFIED</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Chemfilm – Certification per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>4.</td>
<td>Brazing – Certifications per specifications or drawings.</td>
<td>☐</td>
</tr>
<tr>
<td>5.</td>
<td>Brazing – Certificate of Conformance with reference to supplier PO.</td>
<td>☐</td>
</tr>
<tr>
<td>7.</td>
<td>Manufacturing – Certificate of conformance reference to Orbital PO.</td>
<td>☐</td>
</tr>
</tbody>
</table>

I certify that all of the above characteristics were reviewed and evaluated and none of the defects listed were found:

---

**Signature of Supplier Quality Representative:**

**Date:**

These parts are APPROVED/DISAPPROVED for shipment

**Notes:**

---

**Orbital Supplier Assurance Reviewer**

**Printed Name:**

**Signature and Date:**

---

Figure A.3 Mechanical Part Pre-Ship Inspection Checklist QSF-GD0002-02

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