6.2 EXTERNAL INSPECTION CODES

SUPPLIER QUALITY ASSURANCE

Orbital Sciences Corporation hereinafter shall mean Orbital. Notwithstanding any other provisions, all articles furnished hereunder are subject to the Inspection Clause of the General Provisions of the Purchase Order and the following Special Quality Clause(s) when indicated by clause number(s) in the schedule of the Purchase Order. Articles defined in the schedule of the Purchase Order will not be accepted by Orbital if the Subcontractor fails to submit certification, documentation, test data, and reports specified herein.

C1 C of C The supplier shall furnish a Certificate of Conformance that includes the manufacturer's name, location, and cage code, with each shipment. Assuring that the articles shipped have been manufactured in accordance with and verified to applicable drawings and specifications, and that material and functional test reports and inspection records are on file at the supplier or manufacturer's facility and are available for ORBITAL and Government review. Articles will not be accepted at ORBITAL unless a Certificate of Conformance is provided.

C2 C of C The supplier shall furnish a Certificate of Conformance that shall include the manufacturer's name, location and cage code with each shipment. The purchase order and Certificate of Conformance shall indicate the material specification and revision level of each item shipped. The supplier shall submit a Certificate of Conformance with Lot Number, Date Code, Date of Manufacture, etc., signed by a responsible representative indicating the authority of the signing individual.

C3 C of C By executing the act of product shipment the supplier certifies that the product complies with all purchase order requirements. 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, or serial number
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 and/or ORBITAL's customer(s)
i. Identification of the authorized agent (including title) that approved shipment.

C3X 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 above, 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 10012-1 or ANSI/NCSL Z540. Orbital reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the calibration system. Articles delivered to this purchase order shall be accompanied by a Certification of Calibration which meets the requirements of ISO10012-1 or ANSI/NCSL Z540.

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 10012 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. A written report shall be furnished, within a reasonable time period, which is specific and conclusive to prevent a recurrence of the discrepancy.

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 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 upon request.

D1X Deleted use D1

D2 DATA CHEM A validated and legible report must accompany each shipment made to ORBITAL 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 casting 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, 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 of 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. Points will be placed in the fabrication and assembly process so as to accurately verify and document the engineering development/build activity periodically during the life of the contract.

D5 DATE CODE The total quantity of electronic components delivered under any line item of this purchase shall be limited to no more than two (2) date codes, which shall be separated and identified on suppliers packing list and Certificate of Compliance.

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 acceptance testing which demonstrates that the part is still functional and has not experienced any degradation during storage. This acceptance testing shall consist of functional testing over the device rated operating temperature range, and visual inspection.

D6V DATE CODE Parts delivered to ORBITAL shall be less than 60 months old (the part date code shall be used for the assessment). Parts that are older than 60 months may be accepted provided the manufacturer performs acceptance testing which demonstrates that the part is still functional and has not experienced any degradation during storage. This acceptance testing shall consist of functional testing over the device rated operating temperature range, and visual inspection.

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.

D8 DEVIATIONS Deviations from drawings, specifications, or other Purchase Order requirements must be reported to the Buyer for review and approval. If approved, ORBITAL 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 following address: 21629 Atlantic Blvd. Dulles, VA 20166.

E1 ELEMENT EVAL Element evaluation per MIL-STD-883, Method 5008 is required. See detail specification.

E3 ESD Components on this order are susceptible to damage caused by static electricity and are considered electrostatic discharge sensitive (ESDS). The supplier shall establish and implement an ESD control program in accordance with MIL-STD-1686 and MIL-HDBK-263 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.

G1 GIDEP The Supplier shall establish and implement a system to review and take action, as necessary, on Government-Industry Data Exchange Program (GIDEP) Alerts. The Supplier shall be responsible for reviewing GIDEP Alerts for impact to flight hardware delivered to ORBITAL. ORBITAL shall be notified where matches are found between GIDEP Alerts and material delivered to ORBITAL. Suspect parts identified on GIDEP Alerts shall be removed from all stores, kits, assemblies, and any other allocation used as a source of parts for flight quality hardware.

G2 Delete use G1

H1 HAZ MAT Prior to shipment or transfer to ORBITAL, the supplier shall provide the appropriate Material Safety Data Sheet(s) 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 include, but are not limited to:
   a. Halons
   b. Chlorofluorocarbons (CFCs)
   c. Other controlled substances - Carbon Tetrachloride (Trichloromethane), Methyl Chloroform (1,1,1- Trichloroethane), and Methyl Bromide

J1 INSPI 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 INSPI 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 ATICLE 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 is at the supplier's risk.

J4 Deleted use J12

J5 Deleted use J6
J6 INSP The supplier is authorized to perform sampling inspection in accordance with MIL-STD-105 and ASQC Z1.4. Critical dimensions are to be inspected and recorded to a 4.0 AQL and provided with each PO line item shipped.
J7 Deleted use J8
J8 Deleted use Q2, Q3 or Q4.
J9 INSP 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-1417.
J10 INSP Penetrant 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-1417.
J11 INSP The material on this purchase order requires radiographic inspection per ASTM-E-1742 and/or ANSI-D1.1. The x-ray film and a legible copy of the report shall accompany the material when delivered to ORBITAL.
J12 INSP The supplier shall perform dimensional inspection of each end item in accordance with applicable ORBITAL drawings. Actual dimensions shall be recorded and provided for each PO line item shipped.
J13 INSP 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 INSP ORBITAL's customer and/or the Government reserves 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 furnished under this purchase order shall be furnished material except as instructed in writing by ORBITAL. Unused material, properly identified, shall be returned with the last shipment of fabricated parts. (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 and no unauthorized substitutions or disposals were made".
M4 Deleted
N1 NASA The supplier shall provide and maintain a system that complies with NASA-STD 8739.4 "Requirements for Interconnecting Cables, Harnesses, and Wiring."
N2 NASA The Supplier shall provide and maintain a system that complies with NASA-STD 8739.1 "Requirements for Conformal Coating."
N3 NASA The Supplier shall provide and maintain a system that complies with NHB5300.4(3H), "Requirements for Crimping and Wire Wrap."
N4 NASA The supplier shall provide and maintain an inspection system in accordance with NHB5300.4(1C). ORBITAL reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the inspection system.
N5 NASA The Supplier shall provide and maintain a system that complies with NHB5300.4(3II), "Requirements for Printed Wiring Boards."
N6 NASA The supplier shall provide and maintain a quality system in accordance with NHB5300.4(1B). ORBITAL reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the quality system.
N7 Deleted
N8 NASA The Supplier shall provide and maintain a system that complies with NASA-STD-8739.3, "Requirements for Soldered Electrical Connections."
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 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 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 INSP Units to be delivered under this Contract require "pre-cap" inspection by Orbital at the Sub-contractor's facility. The Sub-contractor shall notify the Orbital Buyer/Subcontracts Representative 5 days prior to when units will be ready for this inspection. The Sub-contractor 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 Deleted use P2

P4 Deleted use P2

P5 PKG Package in tape and reel. The cover tape utilized shall have static dissipative properties on both the backing and adhesive sides of the cover tape, such as 3M #2675. Component leads or terminations shall have a solder finish.

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 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.

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 a 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 PARAMETRIC DATA Data consisting of parametric measurements recorded during qualification and/or acceptance testing of each end item shall be provided. The data shall include the item's serial number identification, a report of each anomaly detected, anomaly dispositions, and a narrative final test report.

P12 Deleted

P13 Deleted

P14 Deleted

P15 Deleted

P16 PARTS Supplier shall furnish wire on this order with one (1) continuous length per reel. Reels with multiple lengths will not be accepted. All wire ordered under 500 feet shall be the length as specified per reel on the P.O. and orders over 500 feet shall be a minimum of 500 feet per reel. Wire shipped under the minimum will not be accepted.

P17 INSPECTION PLAN 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 without the use of reference documents.

P18 QA PLAN The supplier shall provide a Quality Assurance Plan for ORBITAL approval within 45 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 Deleted
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 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-131J, Class I, MIL-PRF-8170D, MIL-D-117E, Type III, Class E, Style 1. A desiccant per MIL-D-3464E 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.

Q1 Deleted

Q2 QUAL SYS The supplier shall provide and maintain a quality system compliant to ISO9001, ORBITAL reserves the right to conduct a survey of the supplier's facilities to determine the adequacy of the quality system.

Q3 QUAL REQ ISO 9001 Sub-contractor's Quality system shall conform to the requirements of ISO-9001/Q91 and is subject to review and approval at all times by ORBITAL.

Q4 QUAL REQ 9002 The Sub-contractor's Quality system shall conform to the requirements of ISO-9002/092 and is subject to review and approval at all times by ORBITAL.

R1 RECORDS All records of articles and materials supplied on the purchase order shall be retained in a safe and accessible location by the supplier for a period of ten years. This requirement applies to all supplier or sub-contractor documentation.

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. Use a four (4) digit numerical number starting with 0001. Serial number must be prefixed with the supplier's logo, name, abbreviation of name, or other methods that positively identifies the supplier. If this is an amendment to a purchase order a subsequent part number, do not start at 0001, but continue with the next sequential number from the previous purchase order (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 202), 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.

S3 SOURCE SURVEILLANCE Source Surveillance shall be conducted by Orbital at the Sub-contractor'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 Sub-contractor and shall be subject to witness by Orbital's Quality Representative. Sub-contractor shall contact the Orbital Buyer/Subcontractor Representative prior to the start of fabrication so that mandatory in process inspection/test points can be agreed upon. Sub-contractor shall have available and present upon request, documented evidence of his inspection/test performance including in process and/or final test. This may be used for the acceptance of hardware or material. Required documentation for shipment must be completed and signed by Sub-contractor's authorized Quality personnel, and available for the Orbital Source Acceptance Representative's review. When Source Inspection has been performed, a completed copy of the source acceptance form must accompany the shipment.

S2X Deleted

S4 SOURCE INSPEC (LIMITED) Source Inspection of final acceptance inspection/test shall be conducted by Orbital at the Sub-contractor's facilities, or where designated in this contract, prior to shipment. Inspection and/or test performed in accordance with and agreement between Sub-contractor and a Orbital Quality representative will fulfill the acceptance/test requirements of Orbital. Sub-contractor shall contact Orbital Buyer/Subcontractor Representative, a minimum of five (5) days in advance of final acceptance inspection/test and schedule for witnessing inspection/test agreed upon. Sub-contractor 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 Sub-contractor's authorized Quality personnel and available for the Orbital Quality representative's review. When Source Inspection has been performed, a completed copy of the source acceptance form must accompany the shipment.

S5 SOURCE INSPEC Supplier shall secure access for ORBITAL personnel to subcontracted activity associated with this procurement.

S6 SOURCE INSPEC All work on this order is subjected to inspection and test by the government at any time and place. The government quality representative who normally services 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 also 96 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 Purchasing Agent shall be notified immediately.

S7 SPACE FLIGHT This item is for use on 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 CpkS 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 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 Process list -0610-002 TABLE III), 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 Deleted

S12 SPEC PROC Special processes (see ORBITAL Special Process list -0610-002) shall be performed in accordance with ORBITAL and/or military specifications listed within the design drawings. Data and records indicating conformance to the listed specifications (including revision level) shall be provided to ORBITAL with each end item.

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 of the supplier's facilities to determine the adequacy of the system.

S14 SOWPF 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 Subcontractor 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 Deleted

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.
   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.

T1 EIDP Each shipment shall be accompanied by a legible and reproducible copy of the Supplier's End Item Data Package. 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-8072.1.2A (Goddard Space Flight Center Fastener Integrity Requirements). This includes Material test reports with chemical and physical property traces of 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 TESTING Test data is required with each shipment. Refer to applicable drawing/specification for specific requirements. (The Supplier shall notify ORBITAL of acceptance test failures within 24 hours of receipt of the initial and final Failure Analysis Report. Supplier's documentation shall be retained on file for a minimum of 3 years. ORBITAL shall be notified prior to disposal of any/all documentation.)

T6 TESTING Supplier shall use ORBITAL supplied Modern/Magnetic/Gerber data generated from schematic wire list to test printed wiring boards. Data supplied shall be as follows: net list including reference designators, pin and net name; 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 Deleted Use T6

T8 Deleted
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. part 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 on all materials, components, parts, and documentation. Inspection records, test results, process-control records, and material/process certifications 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.

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.
### 6.3 SPECIAL PROCESS LIST

Orbital Sciences Corporation hereinafter shall mean Orbital, TSD. Notwithstanding any other provisions, all articles furnished hereunder are subject to the Inspection Clause of the General Provisions of the Purchase Order and the following Special Process Clause(s) when indicated by clause number(s) in the schedule of the Purchase Order. Articles defined in the schedule of the Purchase Order will not be accepted by Orbital if the Subcontractor fails to submit certification for processes specified herein.

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<thead>
<tr>
<th>CODE</th>
<th>SPECIAL PROCESS</th>
<th>SPECIFICATION</th>
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<tbody>
<tr>
<td>S9-001</td>
<td>Aluminum Coating, High Purity</td>
<td>MIL-C-83488</td>
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<tr>
<td>S9-002</td>
<td>Anodization</td>
<td>MIL-A-8625</td>
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<td>Black Oxide Coating</td>
<td>MIL-C-13924</td>
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<td>S9-006</td>
<td>Brazing</td>
<td>MIL-B-7983 (Cancelled Use as Guide)</td>
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<tr>
<td>S9-007</td>
<td>Brazing, Nickel Alloy</td>
<td>AMS2675</td>
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<td>S9-008</td>
<td>Brazing, Process for Silver</td>
<td>SF23 (ETSD doc. Use as Guide)</td>
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<tr>
<td>S9-009</td>
<td>Brazing, Vacuum Furn.</td>
<td>SWP-114</td>
</tr>
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<td>S9-010</td>
<td>Cadmium Coat, Vacuum Deposit</td>
<td>MIL-C-8637</td>
</tr>
<tr>
<td>S9-011</td>
<td>Cadmium Plating</td>
<td>AMS2400</td>
</tr>
<tr>
<td>S9-012</td>
<td>Cadmium Plate, Electrodeposit</td>
<td>QQ-P-416</td>
</tr>
<tr>
<td>S9-013</td>
<td>Carburizing of Steel</td>
<td>MIL-S-6090</td>
</tr>
<tr>
<td>S9-014</td>
<td>Chemical Conversion Coat</td>
<td>MIL-C-5541</td>
</tr>
<tr>
<td>S9-015</td>
<td>Chemical Conversion Coat for Aluminum Base Alloys</td>
<td>SP-22 (ETSD doc Use as Guide)</td>
</tr>
<tr>
<td>S9-016</td>
<td>Chemical Etching Prior to Dye Penetrate Inspection</td>
<td>STD-PS5680 (ETSD doc Use as Guide)</td>
</tr>
<tr>
<td>S9-017</td>
<td>Chromium Plating</td>
<td>QQ-C-320</td>
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<tr>
<td>S9-018</td>
<td>Chromium Plating on Martin 2&quot; Disconnect</td>
<td>999-158 (ETSD doc Use as Guide)</td>
</tr>
<tr>
<td>S9-019</td>
<td>Cleaning, Space Shuttle Fluid Hardware</td>
<td>SWP-208</td>
</tr>
<tr>
<td>S9-020</td>
<td>Contamination Control for Martin Magnet, EPS BUAB</td>
<td>999-311 (ETSD doc Use as Guide)</td>
</tr>
<tr>
<td>S9-021</td>
<td>Copper Plating</td>
<td>MIL-C-14550 (Cancelled use AMS 2418)</td>
</tr>
<tr>
<td>S9-022</td>
<td>Copper Welding</td>
<td>SWP-108</td>
</tr>
<tr>
<td>S9-023</td>
<td>Electron Beam Welding, Aerospace Parts</td>
<td>AMS-2681</td>
</tr>
<tr>
<td>S9-024</td>
<td>Electron Beam Welding, Fatigue Critical</td>
<td>AMS-2880</td>
</tr>
<tr>
<td>S9-025</td>
<td>Electroplating of Metal Parts</td>
<td>FSD-PS1001 (ETSD doc Use as Guide)</td>
</tr>
<tr>
<td>S9-026</td>
<td>Electroplating of Metal Parts</td>
<td>SWP-305</td>
</tr>
<tr>
<td>S9-027</td>
<td>Finish Specification</td>
<td>FPS-3001 (Lockheed/Martin)</td>
</tr>
<tr>
<td>S9-029</td>
<td>Fluorocer Pen. Inspect</td>
<td>MIL-STD-6876 (Cancelled use ASTM E1417)</td>
</tr>
<tr>
<td>S9-030</td>
<td>Fusion Welding</td>
<td>MIL-STD-2219</td>
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<td>S9-031</td>
<td>Fusion Welding</td>
<td>SWP-105</td>
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<td>S9-032</td>
<td>Gold Plating, Electrodeposited</td>
<td>MIL-Q-45204 (Cancelled Use as Guide)</td>
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<td>S9-033</td>
<td>Heat Treat of Alum. Alloy</td>
<td>MIL-H-6086 (Cancelled use AMS H6086)</td>
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<td>S9-034</td>
<td>Heat Treat of Magnesium</td>
<td>MIL-N-6657 (Cancelled Use as Guide)</td>
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<tr>
<td>S9-035</td>
<td>Heat Treat of Steel</td>
<td>MIL-H-6975</td>
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<tr>
<td>S9-036</td>
<td>Heat Treat of Titanium</td>
<td>MIL-H-81200</td>
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<td>S9-037</td>
<td>Heat Treat of Wrought Copper-Beryllium Alloys</td>
<td>MIL-H-7199</td>
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<td>S9-038</td>
<td>Impregnation of Metal Castings</td>
<td>MIL-H-13657</td>
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<td>S9-039</td>
<td>Impreg. of Porous Nonferrous Metal Castings</td>
<td>MIL-STD-276</td>
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<td>S9-040</td>
<td>Inspection of Castings</td>
<td>MIL-STD-2175</td>
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<tr>
<td>S9-041</td>
<td>Liquid Penetrant Exam</td>
<td>ASTM-E-1417</td>
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<tr>
<td>S9-044</td>
<td>Mag. Particle Inspection</td>
<td>SWP-822</td>
</tr>
<tr>
<td>S9-045</td>
<td>Mag. Particle Inspection</td>
<td>ASTM-E-1444</td>
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<td>S9-046</td>
<td>Nickel Coat, Electroless</td>
<td>MIL-C-26074</td>
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<tr>
<td>S9-047</td>
<td>Nickel Plating (electrodeposited)</td>
<td>QQ-N-290</td>
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<tr>
<td>S9-048</td>
<td>Nickel Plating, Electroless</td>
<td>AMS-2404</td>
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<tr>
<td>S9-049</td>
<td>Nickel, Selective Electrodeposition</td>
<td>MIL-STD-865</td>
</tr>
<tr>
<td>S9-050</td>
<td>Nitriding of Steel</td>
<td>MIL-S-6090</td>
</tr>
<tr>
<td>S9-051</td>
<td>Organic Finishes</td>
<td>MIL-F-15264</td>
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<tr>
<td>S9-052</td>
<td>Passivation</td>
<td>QQ-P-30</td>
</tr>
<tr>
<td>S9-053</td>
<td>Phosphate Coatings for Ferrous Metals, Heavy</td>
<td>DOD-P-16232</td>
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<tr>
<td>S9-054</td>
<td>Printed Wiring Boards</td>
<td>MIL-P-55110 (Replaced by IPC-2221)</td>
</tr>
<tr>
<td>S9-055</td>
<td>Printed Wiring, Flexible and Rigid-Flex</td>
<td>IPC-6011, IPC-6012</td>
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<tr>
<td>SO-050</td>
<td>Radiographic Inspection</td>
<td>MIL-STD-163 (Cancelled use ASTM E1742)</td>
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7.0 QUALITY RECORDS

Quality Records generated as a result of this document shall be maintained to demonstrate compliance with this and any related documents in accordance with the Control of Quality Records Procedure, TSD-MAP1600.