

REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
A	Production Release	23-Jul-25	P. Ferrara

HUGHES PROPRIETARY

Copyright © 2025 Hughes Network Systems, LLC

Notice of Proprietary Information

This document and its contents are proprietary to Hughes Network Systems, LLC and are intended solely for the internal use of Hughes Network Systems, LLC. This publication and its contents may not be reproduced or distributed for any other purpose without the written permission of Hughes Network Systems, LLC.

	Approvals	Date	HUGHES NETWORK SYSTEMS, LLC			
Originator	Erik Lawrence	7/18/25				
Approved	Patrick Ferrara	7/16/25	TITLE QUALITY REQUIREMENTS FOR AERO SUPPLIERS			
Checked	Orlando Petini	7/17/25				
			SIZE	CAGE CODE	DWG NO	REV
			A	3LOW2	1044585	A
TYPE: 501			SCALE: NONE		SHEET 1 of 17	

TABLE OF CONTENTS

<u>Section</u>	<u>Sheet</u>
1.0 INTRODUCTION.....	6
1.1 PURPOSE/SCOPE	6
1.1.1 Purpose	6
1.1.2 Scope	6
1.2 REVISION HISTORY	6
1.3 APPLICABLE DOCUMENTS	6
1.3.1 Applicable External Documents	6
1.3.2 Applicable Internal Documents	7
1.4 TERMS, ABBREVIATIONS, ACRONYMS, AND DEFINITIONS	7
2.0 APPLICABLE INFORMATION.....	9
2.1 REQUIREMENT DESCRIPTIONS	9
2.2 AWARENESS	10
2.3 CALIBRATION	10
2.4 CAPABILITIES	10
2.5 CERTIFICATE OF CONFORMANCE & PACKING SLIP	10
2.6 NOTIFICATION OF CHANGE	11
2.7 CONFIGURATION MANAGEMENT	11
2.8 CONTROL OF NONCONFORMING MATERIAL & MATERIAL REVIEW BOARD.....	11
2.9 CONTROL OF WORK TRANSFER.....	12
2.10 COUNTERFEIT MITIGATION	12
2.11 DOCUMENT & RECORD CONTROL.....	12
2.12 RECORD RETENTION.....	12
2.13 ELECTROSTATIC SENSITIVE DEVICES & MOISTURE SENSITIVE DEVICES	13
2.14 FIRST ARTICLE INSPECTION	13
2.15 FOREIGN OBJECT DAMAGE.....	13
2.16 HUGHES OWNED ASSETS.....	13
2.17 INSPECTION	14
2.18 LIMITED SHELF LIFE	14
2.19 NOTICE OF ESCAPE	14
2.20 PACKAGING & LABELING.....	14
2.21 PRODUCTION CONTROL	15
2.22 PURCHASE ORDER	15
2.23 QUALITY MANAGEMENT SYSTEM - CALIBRATION.....	15

SIZE A	CAGE CODE 3LOW2	DWG NO 1044585	REV A
SCALE: NONE		SHEET 2 of 17	

2.24	QUALITY MANAGEMENT SYSTEM CERTIFICATION	15
2.25	CONTRACT AND REQUIREMENTS REVIEW	15
2.26	RETURN MATERIAL AUTHORIZATION.....	15
2.27	RIGHT OF FACILITY ACCESS	16
2.28	SPECIAL PROCESS	16
2.29	SUPPLIER CORRECTIVE ACTION REQUESTS	16
2.30	SUPPLIER EVALUATION & APPROVAL.....	16
2.31	SUPPLIER MANAGEMENT	16
2.32	TECHNICAL STANDARD ORDER/PARTS MANUFACTURING APPROVAL CERTIFICATE AND AIRWORTHINESS APPROVAL TAG	16
2.33	TEST SPECIMENS.....	17
2.34	TRACEABILITY	17
2.35	WORK INSTRUCTIONS	17
2.36	CONTINUAL IMPROVEMENT AND ZERO DEFECT PLAN.....	17

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 3 of 17	

LIST OF FIGURES

Figure

Sheet

No table of figures entries found.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 4 of 17	

LIST OF TABLES

<u>Table</u>	<u>Sheet</u>
Table 1-1. Revision History.....	6
Table 1-2. Applicable External Documents	6
Table 1-3. Applicable Internal Documents	7
Table 1-4. Applicable Internal Documents (Documation).....	7
Table 1-5. Terms, Abbreviations, Acronyms, and Definitions	7
Table 2-1. Applicability Directory.....	9

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 5 of 17	

1.0 INTRODUCTION

1.1 PURPOSE/SCOPE

This document establishes the Hughes Aviation & Defense supplier quality requirements for Hughes Network Systems (HNS).

1.1.1 Purpose

Unless noted in this section, all terms in this document are applicable to Hughes approved suppliers as well as the external providers to our suppliers. Hughes approved suppliers shall only use Hughes designated or approved external providers, including process sources (e.g., special processes).

The Supplier Category List, Figure 1, defines supplier category types by the product or service provided. The Applicability Registry, Figure 2, uses these same supplier categories and indicates which requirements apply based on supplier type. Each requirement paragraph in Figure 2 will identify requirement applicability with “X”, indicating that the supplier shall comply with the requirement clause.

1.1.2 Scope

These Quality Requirements apply to all products, materials and/or services that are purchased from approved suppliers for, or in support of aerospace and defense applications. Acceptance of a purchase order signifies that a supplier has accepted all applicable requirements relevant to their statement of work listed in this document aside from any documented exceptions approved by Hughes Network Services.

1.2 REVISION HISTORY

Table 1-1. Revision History

Revision	Description
A	<i>Production Release</i>

1.3 APPLICABLE DOCUMENTS

1.3.1 Applicable External Documents

Table 1-2. Applicable External Documents

Item #	Document #	Rev.	Description	Entity Controlling Document
1	AS5553	Rev at PO date	Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition	IAQG.ORG
2	AS6081	Rev at PO date	Fraudulent/Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition - Distributors	IAQG.ORG
3	AS9102	Rev at PO date	First Article Inspection Requirement	IAQG.ORG
4	AS9100	Rev at PO date	QMS – Requirements Aviation, Space and Defense Organizations	IAQG.ORG
5	AS9146	Rev at PO date	Foreign Object Damage (FOD) Prevention Program – Requirements for Aviation, Space and Defense Organizations	IAQG.ORG

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 6 of 17	

Item #	Document #	Rev.	Description	Entity Controlling Document
6	AS9120	Rev at PO date	Quality Management Systems – Requirements for Aviation, Space and Defense Distributors	IAQG.ORG
7	NAS 412	Rev at PO date	FOREIGN OBJECT DAMAGE (FOD) PREVENTION GUIDANCE DOCUMENT	aia-aerospace.org
8	IPC WP116	Rev at PO date	Guidance for the Development and Implementation of a Foreign Object Debris (FOD) Control Plan	www.electronics.org
9	ASTM D3951	Rev at PO date	Standard Practice for Commercial Packaging	ASTM.ORG
10	ISO 17025	Rev at PO date	Testing and calibration laboratories	ISO.ORG
11	ANSI Z540	Rev at PO date	Requirements for Calibration and Testing Laboratories	ANSI.ORG

1.3.2 Applicable Internal Documents

Table 1-3. Applicable Internal Documents

Item #	Document #	Description	Entity Controlling Document
			Copies available from Configuration Management, Hughes Network Systems, LLC, 11717 Exploration Lane, Germantown MD 20876

Table 1-4. Applicable Internal Documents (Documentation)

Item #	Document #	Description	Entity Controlling Document
			Copies available through the Documentation application. For access, contact Software Technology at SDETools@hughes.com.

Note: Copies of documents in this section can be requested from Hughes Network Systems, LLC, Purchasing Department.

1.4 TERMS, ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

Table 1-5. Terms, Abbreviations, Acronyms, and Definitions

Reference: 1038660 for approved entries to this section and additional terms, acronyms, and definitions.

Terms/Acronym	Definition/Descriptions
Cables/Harnesses	Suppliers who fabricate wire harness and cable assemblies
Contract Manufacture/BTP	Suppliers who produce product according to Hughes engineering. Build-To-Print
Manufacturer- COTS, Commercial, EEE, Components	A producer of standard parts and components that are commercially available.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 7 of 17	

Terms/Acronym	Definition/Descriptions
Distributor- COTS, Commercial, EEE, Components	A distributor of standard parts and components that are commercially available.
Metal Fabrication (Machine, sheet)	A supplier that produces metal parts and assemblies to Hughes
PCB/PCBA BTP	A supplier that produces printed circuit boards, assemblies or critical components. Build-To-Print
Software, Engineering, Design	A supplier who sells deliverable software, engineering or design services.
Special Process NADCAP	A supplier who performs special processes.
Logistics and Supply Chain Services	A supplier who performs logistics processes.
Non-Flying Parts/Services (Calibration)	A supplier who performs calibration services.
Non-Flying Parts/Services (Consulting)	A supplier who performs consulting services.
Non-Flying Parts/Services (Packaging and Production Materials)	A supplier who sells production materials and packaging services.

SIZE A	CAGE CODE 3LOW2	DWG NO 1044585	REV A
SCALE: NONE		SHEET 8 of 17	

2.0 APPLICABLE INFORMATION

2.1 REQUIREMENT DESCRIPTIONS

Table 2-1. Applicability Directory

		Cables/Harnesses	Contract Manufacture/BTP	Manufacturer- COTS, Commercial, EEE, Components	Distributor- COTS, Commercial, EEE, Components	Metal Fabrication (Machine, sheet)	PCB/PCBA BTP	Software, Engineering, Design	Special Process NADCAP	Logistics and Supply Chain Services	Non Flying Parts/Services (Calibration)	Non Flying Parts/Services (Consulting)	Non Flying Parts/Services (Packaging and Production Materials)
Unless otherwise listed below, all requirements apply to every supplier category													
#	Requirement Description												
2.3	Calibration	x	x	x	x	x	x	x	x	x	x		x
2.5	Certificate of Conformance & Packing Slip	x	x	x	x	x	x	x	x				
2.6	Notification of Change	x	x	x	x	x	x	x	x				
2.10	Counterfeit Mitigation	x	x	x	x	x	x						
2.12	Record Retention	x	x			x	x	x	x	x	x	x	
2.14	First Article Inspection	x	x			x	x	x					
2.15	Foreign Object Damage	x	x	x	x	x	x		x	x	x	x	x
2.16	Hughes Owned Assets	x	x			x	x	x		x	x		x
2.17	Inspection	x	x	x	x	x	x	x	x				
2.18	Limited Shelf Life		x	x	x				x	x			
2.21	Production Control	x	x			x	x		x				
2.23	Quality Management System - Calibration										x		
2.24	Quality Management System Certification	x	x			x	x	x	x	x			
2.26	Return Material Authorization	x	x	x	x	x	x			x			
2.28	Special Process		x			x	x		x				

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 9 of 17	

2.32	Technical Standard Order (TSO)/Parts Manufacturing Approval (PMA) Certificate and Airworthiness Approval Tag		x										
2.35	Work Instructions	x	x	x	x	x	x		x	x	x		x

2.2 AWARENESS

The supplier shall ensure that its persons are aware of:

- Their contribution to product or service conformity
- Their contribution to product safety
- The importance of ethical behavior

2.3 CALIBRATION

The supplier shall provide a certification with the delivery of calibrated equipment. Suppliers with calibrated equipment shall be able to produce a calibration certificate upon request.

Calibration Certificates shall contain the following:

- Equipment ID
- Equipment name
- Calibration due date
- Calibration frequency
- Acceptance criteria
- Out of tolerance data if equipment supplied was out of tolerance before calibration

Suppliers shall establish, implement, and maintain a process for the recall of monitoring and measuring equipment requiring calibration or verification.

2.4 CAPABILITIES

The supplier shall have capable facilities, equipment, qualified staff, and resources for the scope of work being performed.

2.5 CERTIFICATE OF CONFORMANCE & PACKING SLIP

The supplier shall provide a Certificate of Conformance (CoC) and Packing Slip with each shipment to attest that the parts, assemblies, subassemblies, or detail parts conform to the order requirements.

Material must be RoHS compliant.

The CoC and/or the Packing Slip must contain the following:

- Supplier Name
- Name and address of manufacturing or processing location
- HNS Purchase Order number, RMA/DRS number, or applicable tracking number
- HNS Part number & Revision
- MFG Part number & Revision (If different from HNS PN)
- Manufacturer’s lot, heat, batch, date code, and/or serial number (if applicable)
- Quantity and unit of measurement (each, box, case, gallons, etc.)

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 10 of 17	

- Detailed Special Process certification (if applicable)
- A statement of conformity certifying that the delivered work meets all applicable requirements and shall read substantially as follows:

Materials and processes, including SPECIAL PROCESSES detailed on the C of C, used to produce components or parts, described on the PO conform to all PO, design requirements and referenced specifications or special requirements

- Signature and date by an authorized Quality representative

Supplier shall not deliver any product that deviates from engineering without written approval from Hughes Network Systems. Any approved deviating conditions shall be noted on the CoC.

If Source Inspection is invoked on this order, the Source Inspector shall review the C of C and indicate acceptance on the pack slip (stamp or signature).

2.6 NOTIFICATION OF CHANGE

The Supplier shall notify Hughes of any proposed changes to design (major or minor), processes, products, services, or location of manufacture, and receive approval from Hughes prior to incorporation of the change.

Note: Due to contractual and regulatory requirements, Hughes is required to review and approve all changes for components that are used in Hughes owned designs.

If the submitted design change is deemed acceptable, a Hughes Engineering Change Order shall be issued by Hughes and implemented prior to the Supplier incorporating the change.

Note: Hughes acceptance of the Change Request is not authorization to incorporate the proposed change.

2.7 CONFIGURATION MANAGEMENT

The supplier shall plan, implement, and control a process for configuration management as appropriate to the supplier and its products and services in order to ensure the identification and control of physical and functional attributes throughout the product lifecycle. This process shall:

- Control product identity and traceability to requirements, including the implementation of identified changes.
- Ensure that the documented information (e.g., requirements, design, verification, validation, and acceptance documentation) is consistent with the actual attributes of the products and services.

2.8 CONTROL OF NONCONFORMING MATERIAL & MATERIAL REVIEW BOARD

Only product that conforms to the approved design requirements shall be shipped to Hughes.

The Supplier is responsible for control and containment of nonconforming products. The Supplier shall ensure that a product which does not conform to its specifications is identified and controlled to prevent its unintended use or delivery until dispositioned after review. The controls and related responsibilities for dealing with nonconforming products shall be defined in a documented procedure. The Supplier’s documented procedure shall also define the responsibility for review and authority for the disposition of nonconforming products and the process for the Supplier’s approving-personnel making these decisions.

Supplier is required to notify Hughes of nonconforming processes, products, or services and obtain approval for their disposition. When a nonconformance is discovered, a review process shall be initiated for the identification, documentation, and reporting of the nonconformance. If a product is dispositioned for scrap, the product shall be conspicuously and permanently marked, or positively controlled, until physically rendered unusable.

The Supplier is not granted MRB authority to issue “Repair” or “Use-As-Is” (UAI) dispositions without Hughes approval.

Repair: Product that can be corrected to a usable condition, although its condition will not be identical with drawing/specification requirements.

Use-As-Is (UAI): An authorized disposition of a product with one or more nonconformities determined to be usable to fulfill its intended purpose in its existing condition, although it does not conform to requirements originally specified in the contract, specifications, drawing or other applicable design data.

Nonconformances that are dispositioned for Repair or Use-As-Is shall be approved by Hughes prior to delivery. This requirement applies to all procurements.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 11 of 17	

The Supplier shall request in writing Use-As-Is or Repair approval from Hughes. Supplier shall not proceed without written approval from Hughes. Hughes reserves the right to reject the material after completion of the Repair or Use-As-Is if the results are unsatisfactory.

The supplier may issue “Rework” dispositions without Hughes approval. Rework: Processing of a nonconforming product that will eliminate the nonconformance which results in the product completely conforming to the original contract, specifications, drawing or other applicable design data.

2.9 CONTROL OF WORK TRANSFER

The supplier shall notify Hughes as soon as supplier determines intention to enact any work transfer from/to the supplier's facility (e.g. from one organization facility to another, from the organization to a supplier). This will facilitate an evaluation by Hughes to determine the capability of the new facility to meet all applicable requirements.

2.10 COUNTERFEIT MITIGATION

The Supplier shall establish and maintain a counterfeit part prevention plan. AS5553 may be used as a guide to develop the plan. This plan shall focus on detection, prevention, mitigation, disposition, traceability, and reporting of suspected or confirmed counterfeit parts or assemblies. Documentation shall be made available by Supplier that authenticates unbroken traceability to the applicable Original Component Manufacturer/Original Equipment Manufacturer (OCM/OEM) upon request. If there is no traceability to the OCM/OEM, AS6081 testing (Level A and Electrical testing) shall be performed.

The supplier shall flow down requirements for a counterfeit parts prevention program to their suppliers as applicable. For cases where procurements are made from sources other than Original Component Manufactures (OCMs) or Authorized (Franchised) Suppliers, Hughes shall be notified and approve the purchase ahead of time. If Hughes approves the use of an alternate source, or if the Supplier has any reason to doubt a part's authenticity, tests, and inspections in accordance with AS6081 (Level A and Electrical testing) shall be performed to detect fraudulent/counterfeit parts. Hughes reserves the right to request evidence of these test reports.

2.11 DOCUMENT & RECORD CONTROL

The Supplier shall have a documented procedure for controlling purchasing information and data provided by Hughes. This documented procedure shall define the controls needed to:

- Review and update as necessary and re-approve documents including signoffs and change dates,
- Ensure that current versions of applicable documents are available at points of use,
- Ensure that documents remain legible and readily identifiable,
- Ensure that documents of external origin determined by the Supplier to be necessary for the planning and operation of their business are identified and their distribution controlled, and
- Prevent the unintended use of obsolete documents and apply suitable identification to them if they are retained for any purpose.

2.12 RECORD RETENTION

The Supplier and the Supplier's subcontractors shall maintain verifiable, objective evidence of all inspections and tests performed, material traceability, results obtained and dispositions of non-conforming articles. These records shall be identified to associated articles, including the lot number of materials and unit or lot serialization. These records shall be made available to Hughes, Hughes's customers and/or government representatives upon request and shall be retained in a safe, accessible location for a period of 10 years after date of delivery.

Records held for the required retention period shall not be destroyed without Hughes's written concurrence.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 12 of 17	

2.13 ELECTROSTATIC SENSITIVE DEVICES & MOISTURE SENSITIVE DEVICES

If the supplier is providing electrostatic sensitive devices (ESD) or moisture sensitive devices (MSD), the supplier shall document and implement an ESD and MSD Control Program in accordance with ANSI/ESD S20.20. Parts shall be properly packaged and identified as required in ANSI/ESD-S20.20 and IPC/JEDEC J-STD-033. ESD parts shall be placed in conductive or static-dissipative packages, tubes, carriers, conductive bags, moisture barrier bags, etc. for shipment. The packaging, including bags used for a single item, shall be sealed, and clearly labeled to indicate that it contains electrostatic or moisture sensitive parts. Electrical parts that may be used or shipped in conjunction with ESD sensitive parts shall be treated as ESD sensitive.

Note: Hughes may require ESD packaging for non-ESD items on request.

2.14 FIRST ARTICLE INSPECTION

Seller shall plan and document First Article Inspection for all first-time deliveries of items and new revisions of items, including prototype and production and in accordance with AS9102, current revision at the time of PO acceptance.

A full or partial (delta) FAI shall be performed when any of the following events occur:

- A change in engineering definition affecting design characteristics.
- A change in manufacturing source(s), process(es), inspection method(s), tooling, materials/alternate materials, or location of manufacture.
- A change in the numerical control program or translation to another media.
- A natural or man-made event, which can adversely affect the manufacturing process.
- An implementation of corrective action required to complete a previous FAI.
- A lapse in production for two years for any characteristics that may be impacted. This lapse is from the completion of the last production operation to the actual restart of production.

First Article Inspection Reports shall be submitted to HNS using Net-Inspect, or HNS approved alternate secure data transfer portal, prior to dispatch from seller's facility.

A Net Inspect account can be obtained at no cost to the seller by registering at <https://www.net-inspect.com> select the REQUEST AN ACCOUNT option.

FAI reports shall include traceability documents as required under the Traceability section in this document.

2.15 FOREIGN OBJECT DAMAGE

Seller shall maintain a FOD Prevention Program compliant to AS9146, IPC WP116, NAS412, or equivalent Foreign Object Damage (FOD) Prevention industry standard.

The supplier shall ensure articles are free from foreign objects and foreign object damage (FOD) resulting from processing, assembling, and packaging operations.

2.16 HUGHES OWNED ASSETS

All equipment provided by Hughes to the supplier or for which the supplier has been reimbursed by Hughes, shall remain the property of Hughes. The Supplier shall bear the risk of loss and damage to such property, except for normal wear. Such property shall always be properly stored and maintained by the Supplier, shall be identified as Hughes property, and shall not be moved from the Supplier's premises without Hughes's prior approval.

All equipment shall be clearly identified, including part number, revision level, calibration due date and have a Hughes identification number as applicable. The supplier is responsible for the proper use, preventative maintenance and calibration of all equipment as required. If requested, the supplier shall provide to Hughes the documented record of these PM and calibration records.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 13 of 17	

2.17 INSPECTION

The supplier shall demonstrate the ability to meet, control, perform and document all applicable test, inspection and verification activities required to deliver product conforming to all drawing and contractual requirements. This shall include counterfeit part detection methods (when necessary), adequate facilities and equipment and documented processes and procedures to perform required inspections.

The Supplier shall perform final inspection for all critical attributes that may affect the form, fit or function of the part or assembly. 100% inspection shall be utilized whenever possible but in the event a sampling plan is applicable, sampling inspection may be implemented if a statistically valid technique is used.

The Supplier shall retain all inspection documentation per the Document & Record Control section within this document.

2.18 LIMITED SHELF LIFE

Upon shipment, at least 80% of the shelf life shall be remaining for products purchased by Hughes. Certifications included in each shipment shall contain the expiration date.

Unit level packaging shall identify the date of manufacture and date of expiration.

2.19 NOTICE OF ESCAPE

Upon discovery that nonconforming product has been shipped to Hughes, the Supplier must immediately notify Hughes in writing of the escape. The supplier's Notice of Escape (NOE) shall include the following information:

- Dates nonconforming product was produced
- Dates and Purchase Order that parts were delivered to Hughes,
- Affected part number(s),
- Description of the nonconformance,
- How the nonconformance was detected,
- Total number of products delivered,
- Containment measure, root cause, and actions to correct the nonconformance.

2.20 PACKAGING & LABELING

The Supplier shall be responsible for ensuring that items provided under any Purchase Order are packaged in such a manner that the product's integrity is preserved, contamination and corrosion are prevented, and no physical damage occurs. All products shipped to Hughes shall be packaged in accordance with ASTM D3951 unless otherwise stated on the part drawing.

All products shipped to Hughes shall be labeled as follows:

Component packaging shall contain a label with the following information:

- Supplier ID, Logo, or Name
- Hughes Part Number
- Hughes Revision
- Serial Number in scannable 128 Barcode Format
- Serialized items shall be individually packaged and labeled.

Outer packaging label(s) shall match the inner packaging and contain the following information:

- Hughes Part Number in scannable 128 Barcode Format
- Hughes Revision
- When individually boxed and serialized: The Serial Number in scannable 128 Barcode Format

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 14 of 17	

2.21 PRODUCTION CONTROL

Product yields and on-time delivery metrics shall be monitored and used, by the supplier and Hughes, to drive process improvements.

When tests are necessary for verification and validation, these tests shall be planned, controlled, reviewed, and documented to ensure and prove the following:

- Test plans or specifications identify the test item being tested and the resources being used, define test objectives and conditions, parameters to be recorded and relevant acceptance criteria
- Test procedures describe the test methods to be used, how to perform the test, and how to record the results
- The correct configuration of the test item is submitted for the test
- The requirements of the test plan and the test procedures are observed; e. the acceptance criteria are met

2.22 PURCHASE ORDER

The Supplier shall have an approved Purchase Order from Hughes prior to delivery of any articles or services to Hughes.

2.23 QUALITY MANAGEMENT SYSTEM - CALIBRATION

The suppliers shall be ISO 17025 and/or ANSI Z540 certified with a current certification on record.

2.24 QUALITY MANAGEMENT SYSTEM CERTIFICATION

For all products/services, the Seller shall have a third-party certified AS/EN9100 or ISO9001 Quality Management System (QMS), except as defined below:

Distributors: AS/EN9120 Third Party Certification is acceptable for Sellers performing as Distributors.

Suppliers without a third-party certified QMS may provide evidence of an organization Quality Plan for review by HNS. HNS may request additional action, including on-site or virtual surveillance audits.

2.25 CONTRACT AND REQUIREMENTS REVIEW

The Supplier shall have an established method for reviewing all Hughes Business Aviation requirements, including the requirements defined in this document. Acceptance of a Hughes purchase order shall be the Supplier's acceptance of Hughes's requirements. Exceptions to any requirements, including the requirements in this document, shall be documented, and approved by Hughes.

2.26 RETURN MATERIAL AUTHORIZATION

The Supplier shall implement a Return Material Authorization (RMA) process that defines cycle times for completion and can trigger corrective actions when turnaround times are not being met. The Supplier shall include the following information when returning reworked items: reported problem, issues identified, rework performed, and any corrective actions initiated. Reworked items shall pass all testing, inspection, and verification and, upon delivery, include updated versions of all required documentation such as CoC, raw material certs, test results and any other certs and records.

When replacement items are sent, in lieu of reworking returned material, the Supplier shall be responsible for notifying Hughes that the replacement occurred and a brief explanation of why the returned items were not reworked. Hughes reserves the right to request a failure analysis be completed on those items to determine root cause. If the replaced items are returned to Hughes later, the troubleshooting and rework info listed above shall be included.

RMA items shall be returned to Hughes as the same revision that was returned to the Supplier unless the upgrade/downgrade is part of the RMA request or Hughes is notified and approves the revision change

The Supplier should process and return RMA material by the "request receipt date" on the purchase order or within 60 days if no date is specified.

Note: Hughes may require the supplier to input failure analysis, rework performed, and corrective actions into Hughes's Supplier Portal System.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 15 of 17	

2.27 RIGHT OF FACILITY ACCESS

The Supplier shall allow right of facility access to Hughes, Hughes's customers, and regulatory authorities, at any level of the supply chain involved in the order and to all applicable records. The aforementioned parties may conduct on-site audits of the Supplier to ensure the requirements of this document, as well as the requirements of the Hughes Purchase Order (PO), Contract, Statement of Work, drawings and specifications are being met.

2.28 SPECIAL PROCESS

Special processes shall be performed in accordance with specification(s) stated on the drawing and procurement documents. Unless approved by Hughes, Special processing shall be performed by NADCAP accredited sources. Seller may access Nadcap approved sources at <http://www.pri.sae.org>. The Supplier shall be approved by Nadcap for the special process on the date which the special process is performed. The Supplier shall provide to Hughes, upon request, all documentation showing evidence of qualification of Nadcap-approved special processes.

If the Supplier's sub-tier Supplier performs the special process, the Supplier is responsible to flow down the requirements on sub-tier PO's. The Supplier's utilization of Nadcap approved sources does not relieve the Supplier from its obligation to ensure subcontracted sources are in full compliance with applicable specifications. The supplier is encouraged to reach out to their Hughes Supply Chain or Supplier Quality representative(s) for a list of the latest non-Nadcap approved special processors.

If the supplier uses a sub-tier processor that is not NADCAP certified, the supplier shall be responsible for performing process control audits/surveys at the sub-tier processor according to the process standard noted on the drawings. Supplier shall furnish evidence of supplier audits/surveys to Hughes upon request.

2.29 SUPPLIER CORRECTIVE ACTION REQUESTS

When a supplier related non-conforming condition relating to product, process or service exists, a Supplier Corrective Action Request (SCAR) may be issued. The accepted format is the 8D process with an industry accepted root cause analysis tool (5-Why, Cause map, Fishbone, etc.), including those relating to human factors, as applicable. Hughes may issue Non-Conformance Reports (NCRs) through an automated supplier management system, via email. The supplier can fulfill the requirement by completing the documents online directly.

The Supplier shall complete containment actions, root cause analysis (including, as applicable, those related to human factors), corrective action implementation, verification of corrective actions, and submit a completed SCAR form by dates specified in the form. The SCAR shall remain open until effectiveness has been verified.

Note: Hughes may require the supplier to input SCAR information into Hughes's Supplier Management System in lieu of an 8D form.

2.30 SUPPLIER EVALUATION & APPROVAL

The supplier shall undergo an initial evaluation before inclusion to the Hughes Approved Supplier Management System. The supplier shall also undergo recurring evaluation and surveillance to maintain an Approved status. Evaluation and approval will include either a desktop or on-site audit of the supplier's Quality Management System.

2.31 SUPPLIER MANAGEMENT

The Supplier shall manage all their sub-tier Suppliers or subcontractors in accordance with their agreements. These Suppliers shall be evaluated, approved, and maintained, taking appropriate action when performance poses a risk to Hughes programs. The Supplier shall flow down all applicable requirements, including the applicable requirements in this document, customer requirements, statutory requirements, and regulatory requirements, as applicable. Controls shall be in place to prevent ordering material from non-approved Suppliers.

2.32 TECHNICAL STANDARD ORDER/PARTS MANUFACTURING APPROVAL CERTIFICATE AND AIRWORTHINESS APPROVAL TAG

If the Supplier holds National or Civil Aviation Authority (CAA) certification/approval/authorization (e.g., Federal Aviation Administration (FAA) Technical Standard Order Authorization/Parts Manufacturer Approval (PMA)/Type Certification), the Supplier shall provide the original Authorized Release Certificate, FAA Form 8130-3 (Airworthiness Approval Tag) or other CAA equivalent Airworthiness Approval Tag with delivery each product in accordance with FAA Order 8130.21.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 16 of 17	

2.33 TEST SPECIMENS

If requested, the supplier shall provide test specimens, for design approval, inspection/verification, investigation, or auditing.

2.34 TRACEABILITY

The supplier shall have a process to maintain full traceability of product from material receipt, through all phases of manufacturing, to finished product shipment. This traceability documentation shall include purchase order number, Certificates of Conformance for material and external processes, internal processing records, drawing number, drawing revision level, and customer approved Use-As-Is or Repair dispositions if applicable. All COTS and EEE components and assemblies shall maintain traceability back to the original manufacturer. If there is no traceability to the OCM/OEM for EEE components, refer to the Counterfeit Mitigation requirement in this document.

The organization's records associated with the manufacture of serialized or lot-controlled articles will provide for continued traceability of serial numbers or lot number identification through all phases of manufacture, commencing with the raw material and continuing through final acceptance of the end item.

When required, the Supplier shall develop a process to individually serialize units and those serial numbers shall be used to provide complete traceability of the product, including component tracing. The process shall be developed in such a way that prevents duplicate serial numbers from shipping to Hughes.

2.35 WORK INSTRUCTIONS

Supplier created work instructions for Hughes Designed Parts may be reviewed by Hughes prior to release to production. All supplier work instructions shall comply with Hughes product drawing requirements.

2.36 CONTINUAL IMPROVEMENT AND ZERO DEFECT PLAN

Hughes Network Systems encourages all suppliers to develop and maintain a continual improvement strategy that will strive toward a Zero Defect mindset within the organization.

It is the expectation that the supplier take action to prevent quality escapes in all forms. In the event repeat non-conforming products are received from the supplier, Hughes Network Systems reserves the right to require Seller to implement a Zero Defect Plan (ZDP) or a Buyer-approved alternative methodology to protect Buyer from receiving quality escapes.

SIZE	CAGE CODE	DWG NO	REV
A	3LOW2	1044585	A
SCALE: NONE		SHEET 17 of 17	