



RC-9000

Supplier Quality System Requirements



Supplier Quality System Requirements

CORPORATE OVERVIEW

Rockwell Collins is a pioneer in the design, production and support of innovative solutions for our customers in aerospace and defense. Working together, our global team shares a vision to create the most trusted source of aviation and high-integrity solutions, applying insight and foresight to help our customers succeed.

INTRODUCTION

Rockwell Collins values the strategic relationship that we have with our suppliers. We recognize that our suppliers have a key role in maximizing our customer's satisfaction. We are committed along with you to bring significant value to our customers and we welcome your input in making the materials and services you provide even better.

PURPOSE

Rockwell Collins understands that Quality Management System (QMS) types can vary among suppliers. The purpose of this document is to provide clear expectations to our suppliers that are in addition to what is normally required in an industry standard QMS and to state additional business requirements.

1.0 GENERAL REQUIREMENTS

1.1 SYSTEM REQUIREMENTS

Suppliers are required to be compliant with this document.

Reference Section 5.0 for definitions, acronyms, references, and other items used in this document. Unless otherwise specified, "customer" or "Rockwell Collins customer" refers to Rockwell Collins's customer. Unless otherwise specified, "buyer" or "Rockwell Collins buyer" refers to Rockwell Collins.

Rockwell Collins' suppliers, including software suppliers, shall have a documented Quality Management System (QMS). The QMS should conform to the latest revision of AS9100, which is the standard that governs the industry Rockwell Collins supplies. Given our relentless focus on delivering exceptional quality to achieve the highest levels of customer satisfaction, Rockwell Collins expects suppliers to be certified to a QMS that is appropriate to the type of items or services being furnished to Rockwell Collins - this commitment will be a key consideration for future business awards.

Test equipment calibration service providers, testing and inspection laboratories shall be compliant to one of the following standards: ISO 10012, ISO 17025, ANSI/NCL Z540.3 or NADCAP AC 7006 or an equivalent standard.

A supplier providing a part, item, software or service that is not intended to be delivered to a customer and is used for internal Rockwell Collins' purposes only - a Non-Deliverable supplier - is excluded from the requirement to have a documented QMS.

If the supplier's QMS is non-compliant to the applicable requirements, or if its QMS certification is renewed, revoked, suspended, changed, or will expire during the performance of the order, the supplier shall notify the buyer in writing to: collinschanges@rockwellcollins.com. Notification shall be made within 24 hours of the following: revocation, suspension, change, or expiration and provide detail for the appropriate items in the list. All affected Rockwell Collins part numbers shall be listed in the email notification. For Renewal, suppliers shall forward copies of certifications within thirty days of receipt.



Supplier Quality System Requirements

Any exceptions to the requirements in this document shall be authorized in writing by the Rockwell Collins buyer. In addition, the supplier shall maintain a copy of any approved exceptions and make available for review by Rockwell Collins Quality Assurance or other personnel upon request.

If the supplier fails to comply with the requirements of this document, Rockwell Collins may exercise its rights and remedies in accordance with the terms and conditions of all contracts or orders between Rockwell Collins and its supplier.

1.2 WORKMANSHIP

Suppliers shall document workmanship plans and acceptance standards in accordance with the performance and reliability requirements of the Rockwell Collins specifications. For electrical parts, the plans and acceptance standards shall comply with J-STD-001 plus appendix A, Requirements for Soldered Electrical and Electronic Assemblies, and ANSI/IPC-A-610, Acceptability of Electronic Assemblies. Other part types shall have workmanship standards in accordance with the relevant drawings, specifications, and the supplier's QMS. Workmanship requirements specified on the component specification/drawing or elsewhere on the contract or purchase order shall take precedence over this paragraph.

1.3 RIGHT OF ACCESS

The buyer or anyone designated by the buyer, including cognizant government agencies, shall have access to all applicable areas of supplier's facilities. This includes suppliers at any level of the supply chain involved in the order and to all applicable records. This right shall also extend to the supplier's sub-tier suppliers. The supplier shall be given reasonable advance notice by the buyer to host such events. Failure to meet schedule, quality, or program requirements may cause long-term placement of Rockwell Collins personnel or their representatives at the supplier location.

1.4 SUPPLIER-INITIATED CHANGES

Suppliers are required to inform the buyer prior to shipping material or products with changes in product, processes, components, sub-suppliers / sub-contractors, manufacturing facility locations, packaging, shipping method, or outside processors. The supplier shall notify the buyer in writing to: collinschanges@rockwellcollins.com. Provide detail for the appropriate items in the email. All affected Rockwell Collins part numbers must be listed in the email notification.

For items where Rockwell Collins has design authority, suppliers are required to obtain written approval from the buyer prior to any change(s). Suppliers are required to maintain record of all such approvals and have them available upon request. In addition, the supplier shall also provide notification to: collinschanges@rockwellcollins.com within 24 hours of any change in top management, ownership, QMS, a major change in the number of employees, or resources used to provide Rockwell Collins' products or materials. All affected Rockwell Collins part numbers must be listed in the email notification.

1.5 METAL FABRICATION SUPPLIERS

Metal fabrication suppliers shall meet the requirements of 489-0073-001, Supplemental Requirements for Fabricated Parts, unless Rockwell Collins' drawings or order specifies a different requirement. This document is available on the Rockwell Collins Supplier Portal.



Supplier Quality System Requirements

2.0 PROCESS AND PRODUCT MANAGEMENT

2.1 SOURCE INSPECTIONS AND PROCESS VERIFICATIONS

The buyer's source inspections or process verifications shall not absolve the supplier of the responsibility to provide conforming product, nor shall it preclude subsequent rejection. The use of a buyer's sub-tier supplier shall not be considered by the supplier as evidence of effective control of quality of the sub-tier supplier.

2.2 PRODUCT INSPECTION

A First Article Inspection Report (FAIR) is required when specified by a Rockwell Collins order (i. e. quality code RC-28 on the purchase order). The supplier shall complete and submit the first article inspection and subsequent report per RC-QMS-I-308, Rockwell Collins – AS/EN9102 Electronic FAIR Submittal Instructions, as found on the Supplier Portal. (Note: A complete list of PO codes can be found on the Supplier Portal in the Quality Assurance Purchase Order Codes link, RC-QMS-I-358.)

A Last Article Inspection (LAI) may be requested at any time. The LAI shall be in accordance with AS/EN9102.

Devices having one or more characteristics identified on the drawing as "Critical" or "Key" or by the symbol " KC" (Key Characteristic) on the Rockwell Collins drawing, shall be inspected and/or tested in accordance with Rockwell Collins 839-8031-001, Inspection/Test of Key Characteristics Of Components. The data shall be recorded on 074-8432-999, Supplier Advanced Quality System KC Summary and Detail Sheet. These documents are available on the Supplier Portal.

Optional methods may include 100% inspection and/or test. The supplier may submit an alternate Statistical Process Control (SPC) plan to the buyer for consideration and approval. Approval in writing of the alternate SPC plan must be received from the buyer prior to submission of items for product acceptance by Rockwell Collins. Unless otherwise specified, inspection/test reports or SPC data shall be maintained at the supplier for each lot for part numbers that contain Key Characteristics.

All gauges, equipment and other test devices used for product acceptance or in-process control will be included in the supplier's calibration system and the calibration shall be traceable to a national standard.

Supplier and their subcontractor(s) must have a documented tool preventative maintenance process that must keep the tool in a serviceable condition. Supplier shall monitor tool features for excessive wear in order to consistently meet product specifications and drawings. Additionally, the supplier shall take actions to address worn tool.

Note: Rockwell Collins Owned Special Tooling: Special Tooling that is not unique to any specific contract or purchase order and is used to support production of Rockwell Collins parts or assemblies on multiple products and/or programs. As such these tools are seller maintained assets that are not accountable to Rockwell Collins under the Rockwell Collins Property Management procurement requirements. Configuration control and condition of seller's tools remain the responsibility of the seller and must be maintained in accordance with application quality and procedure system requirements.

2.3 DOCUMENT RETENTION

The supplier shall retain all purchasing, production control, quality, manufacturing and manufacturing methods, test, and other related documents associated with the item purchased, for a minimum of 10 years after order completion. The documented information shall provide evidence of conformity to requirements and to the



Supplier Quality System Requirements

effective operation of the supplier's QMS. Methods and records shall be available for review by buyer's representatives, customers, and regulatory authorities.

First Article Inspection Reports and related documented information shall be retained by the supplier for 99 years plus the current year and are required to be kept in the format in which they originated. All requested information shall be provided in the language required by the contract.

U.S. suppliers, including all their sub-tier suppliers, performing maintenance or preventive maintenance of products for applicable FAA-regulated customers shall retain all records necessary to demonstrate compliance with the DOT FAA drug and alcohol regulatory requirements for a minimum of two years after conducting a required drug or alcohol test. Suppliers shall not destroy documented information (records) earlier than the required time period. However, the documented information (records) shall be destroyed in an irreversible manner that completely obliterates their contents and renders the documented information (records) unreadable and unusable.

2.4 CANCELLED SPECIFICATION

Industry/Military/Federal Specification Cancellation Notice Interpretation:

For items where Rockwell Collins has design authority and calls out a cancelled industry, military or federal specification, the cancellation notice shall be reviewed. Any requirement or guidance in the cancellation notice to utilize other standards or specifications shall be interpreted as follows:

- Notices with "may" or "should" are not superseded by the alternate standard/specification. The last active version of the cancelled standard/specification shall be used. If certification cannot be obtained to the last action version, refer to 580-0778-010 to find an acceptable alternate specification.
- Notices with "shall" or "superseded" provide a firm requirement to use the alternate standard/specification in place of the cancelled standard/specification.
- Exceptions to this interpretation are drawings or Purchase Orders that require a specific revision of the cancelled standard/specification (example: "Finish in accordance with MIL-G-45204C" or "Finish in accordance with ASTM B488-95"). The revision indicated is required to meet the requirements of the drawing regardless of inactive or cancelled status

Please contact the buyer for any assistance when interpreting cancellation notices, this requirement or if the specification is cancelled without replacement and non-procurable and there is no documented path to get to an available specification.

2.5 OBSOLESCENCE MANAGEMENT

The supplier shall inform Rockwell Collins of all items that will become obsolete within the next twelve months. The supplier shall maintain regular communication with sub-tier suppliers with regard to possible raw material or component obsolescence. The supplier shall have a documented obsolescence management plan/process in place to mitigate delivery risk for all items that could become obsolete.

Rockwell Collins requires suppliers to notify the buyer regarding obsolescence with lead time sufficient so as not to disrupt delivery schedules. The supplier shall notify the buyer in writing to: collinschanges@rockwellcollins.com. Provide detail for the appropriate items in the list. All affected Rockwell Collins part numbers must be listed in the email notification.



Supplier Quality System Requirements

2.6 COUNTERFEIT RISK MITIGATION

Rockwell Collins requires that all suppliers of electrical parts or assemblies shall document and implement a policy compliant to the current revision of SAE AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition. Suppliers of mechanical parts are to comply with similar methodology by adopting and implementing standard counterfeit mitigation processes applicable to their industry. Suppliers shall purchase material directly from original equipment manufacturers, original component manufacturers, or their authorized distributors. Per 99FP; 074-6876-002 (item #2 listed on each purchase order), Rockwell Collins' Standard Terms and Conditions Form, and the Standard Purchasing Agreement (SPA), purchases from independent distributors (i.e. brokers) are not allowed without prior documented approval from Rockwell Collins. Suppliers are required to maintain a file of all Rockwell Collins approvals.

2.7 ELECTROSTATIC DEVICE PROTECTION

Devices identified as electrostatic discharge sensitive shall be handled, stored, packaged, and shipped in such a manner as to preclude damage from electrostatic discharge. Electrostatic protection processes shall be compliant to ANSI/ESD S20.20 Protection of Electrical and Electronic parts, Assemblies and Equipment or equivalent. Electrostatic protection requirements specified on the component specification, drawing, or elsewhere on the order take precedence over this paragraph.

2.8 FOREIGN MATERIAL

The contamination of goods by foreign material or objects is not acceptable as it could eventually affect product appearance and performance. The supplier shall document and implement a program for the prevention, detection, and removal of Foreign Object Damage/Foreign Object Debris (FOD) in accordance with SAE AS9146, Foreign Object Damage (FOD) Prevention Program-Requirements for Aviation, Space and Defense Organizations. The program shall include training and the active involvement of employees. In addition, the supplier shall conduct audits and maintain records to demonstrate the program's effectiveness.

By delivering items to Rockwell Collins, the supplier shall be deemed to have certified to Rockwell Collins that such items are free from any foreign materials that could result in FOD.

2.9 SPECIAL PROCESSES

Special processes are defined as those processes where the output cannot be easily validated in a non-destructive manner. Subsequently, any defects become apparent after the product has been placed into use or delivered to customers.

The supplier is required to validate and control all special processes and shall maintain evidence that supports the ability of the processes to achieve the specified results. Validation includes, but is not limited to, defined process criteria, approved and trained personnel, approved equipment, specific methods or procedures specified by the design authority, retention of records, test reports, and re-validation plans. Rockwell Collins reserves the right to verify or validate by any means necessary the special processes that are used on Rockwell Collins parts or products.

A list of buyer defined special processes can be found below. A supplier performing any of these special processes shall provide copies of the processor's certification of conformance and include it with each shipment of material. At a minimum the processor's certification of conformance shall include:

- the Rockwell Collins part number and revision



Supplier Quality System Requirements

- quantity processed
- processor name and address
- the specification and revision the parts were processed in accordance with
- processing date
- name of special process utilized
- signature of the quality representative from the processor
- conspicuous identification of the use of Nadcap accredited processes (e.g. Nadcap water-mark, text identifying the job as Nadcap accredited, etc.)

For printed wiring board fabricators, the certification of special processes performed in-house is satisfied by the general certification of conformance. A printed wiring board fabricator is required to provide unique certification for any special processing performed off-site or as a subcontracted activity.

Buyer defined special processes are as follows:

1. Plating/Electro-Deposition	10. Heat Treating	19. Vibration or Qualification Testing
2. Anodizing	11. Annealing	20. Coating or Vapor Deposition
3. Painting	12. Hot Iso-Static Pressing	21. Bonding/Lamination
4. Passivation	13. Material and Chemical testing	22. Encapsulating and Potting
5. Chemical Conversion Coatings	14. Radiographic Testing	23. Impregnation
6. Chemical Cleaning/Milling	15. Penetrant Inspection	24. Leak Testing
7. Dry Film Lubrication	16. Magnetic Particle Inspection	
8. Welding	17. Ultrasonic testing	
9. Brazing	18. Eddy Current Testing	

Mechanical build-to-print parts (sheet metal, machined metal, castings, plastic & rubber and hardware) shall utilize Nadcap accredited processes for items 1 – 18 above when specified by the contract, unless otherwise directed in the contract or on the drawing. This requirement will be flowed through the terms of the contract or through the use of PO code RC-30. Items 19 – 24 above only require a special processor certification of conformance, but the use of Nadcap accredited processes is highly suggested.

Parts processed using custom Rockwell Collins finishes shall be processed through a supplier identified as approved for that process on the Approved Special Processors Listing posted on the Rockwell Collins Supplier Portal (at www.supplycollins.com). The processes identified within this document include, but are not limited to, tin-bismuth plating (580-0225 and 580-0151), bright alloy plating (580-0001), chem-film on copper and copper alloys (580-0034) corrosion resistant electroless nickel (952-0766) and heat treatment for electrical iron (580-4023).



Supplier Quality System Requirements

2.10 Delegated Product Release Verification (AS9117)

Suppliers who have been delegated the authority to act on behalf of Rockwell Collins to verify and release products/services via a Delegation Authorization Letter shall comply with the latest revision of AS9117, which governs Delegated Product Release Verification (DPRV).

2.11 Approved Manufacturers List

Seller shall comply with Buyer's Quality Requirements Document RC-9000, which can be found at www.supplycollins.com, as applicable, incorporated into this Order by reference, as well as any other specifications, workmanship standards or instructions specified in this Order. When furnishing assemblies or subassemblies that have a parts list detailed or specified on Buyer's drawing, Seller shall obtain the approved supplier part on such list from the approved supplier identified in the Part Master and Change Notifications Lookup at portal.rockwellcollins.com/groups/suppliers. Seller shall only deliver Items containing components from manufacturers for which the QAL status is APVD (Approved), NSR (No Status Required), or COMP (First Article Inspection Complete). Note: this requirement does not apply to build to print drawings unless the drawings/specification is labeled "Source Controlled". Please refer to paragraph 3.1 and the type of certification compliance table for more information.

3.0 CONFORMANCE

3.1 MATERIAL CERTIFICATION

When the applicable specification(s) establishes requirements for chemical and/or physical properties, the supplier shall include with the packing sheet for each lot in each shipment, test reports which provide evidence that the materials shipped possess the chemical and/or physical properties required by the applicable specifications.

Test reports must provide, at a minimum, the manufacturer's name, manufacturer's part number, and the buyer's order number. Certification of conformance to base material requirements is sufficient evidence only when provided by the manufacturer of the material.

Certain types of orders shall require the supplier to submit a certification of conformance attesting compliance.

The following table defines the conditions as to when a certification of conformance is required for material delivered to Rockwell Collins:

Type of Material Purchase	Type of Certification Compliance			
	Special Process	Base Material	QPL Material from QML Supplier	Manufacturer
COTS (Commercial-Off-the-Shelf) from Distributor	N/A	N/A	Certified to be Manufactured by QML Certified Supplier	Certified to be manufactured by Rockwell Collins Approved Supplier
QPL Material	N/A	N/A	Certified to be manufactured by QML Certified Supplier	N/A
Build-to-Print (buyer design):	* Certified to be compliant to	N/A	N/A	N/A



Supplier Quality System Requirements

	drawing defined Special Process Requirements			
Build-to-Print (buyer design) and Build-to-Spec (supplier design) with FAI (First Article Inspection)	* Certified to be compliant to drawing defined Special Process Requirements	Certification from Base Material Manufacturer that drawing defined Base Material(s) are compliant to specification	N/A	N/A

* No Certification of Conformance applies if drawing does not contain Special Process(es)

When specific conformance documents are not requested as part of the order, the supplier's shipment of items to Rockwell Collins shall constitute certification that the articles were manufactured, processed, and inspected according to the requirements of the order

When supplier utilizes test reports to accept supplier purchased raw material, the following requirements apply:

- Test reports shall be checked to confirm 100% compliance against supplier's requirements and applicable specifications prior to shipment to Rockwell Collins.
- Validation test requirement: Supplier shall periodically validate test reports for raw material accepted on the basis of test reports. That validation shall be accomplished by supplier or other independent party through periodic, scheduled tests of raw material samples. Schedules for frequency of tests will be established by supplier based on historical performance of the raw material supplier.
- Supplier shall retain test reports provided by the raw material supplier, as well as supplier's validation test results as quality records traceable to the conformance of material, as specified elsewhere in the order or contract.
- Raw material furnished by buyer or its customer is not subject to the validation test requirement.
- Supplier shall implement written processes and procedures in support of this clause.

3.2 REQUESTS FOR CORRECTIVE ACTION

A Supplier Action Request (SAR, i. e. Supplier Failure Analysis, NoNC-Notice of Non-Conformity, or SCAR-Supplier Corrective Action Request) may be issued if nonconforming material is received. Per requirements of the SAR process, the supplier is required to provide the following for SCARs; a containment statement, a root cause and corrective action response, and be subject to escalation of notification to supplier's senior management for failure to respond. All supplier responses are rated for Measure of Effectiveness (MoE). This grading scale is available on the Supplier Portal. Even though NoNCs do not require a formal response, suppliers are required to maintain evidence showing internal root cause and corrective action for audit purposes.

Failure to provide acceptable and timely responses to SCARs may be cause for revocation of business. Regardless of the material or product's warranty status, when requested, the supplier is required to provide a root cause and corrective action for failures that occur immediately upon installation. These are sometimes referred to as out-of-box failures.

Failure to comply with the rules of this SAR process requirement may jeopardize buyer's determination of supplier's compliance to the contract requirements. If the supplier fails to remedy nonconformances as required by the SAR, or if the supplier fails to make prompt and continued progress towards corrective action until it is satisfactorily resolved, Rockwell Collins may exercise any rights and remedies available in the terms and conditions of the contract or order between Rockwell Collins and the supplier. When corrective action progress is



Supplier Quality System Requirements

insufficient, Rockwell Collins may place a supplier on probation status. Suppliers on probation status will not be considered for new procurement activity.

3.3 NOTICE OF NONCONFORMING MATERIAL

The supplier must promptly notify a Rockwell Collins buyer when a nonconformity or reliability issue is discovered in the supplier's processes, components, or assemblies for any product already delivered. This communication shall be sent to CollinsChanges@RockwellCollins.com and to the appropriate buyer.

The communication shall contain the following information:

1. Lot/ batch information/ date of manufacture, as applicable
2. Part numbers impacted including vendor part number(s) and Collins part number(s)
3. Recovery plan
4. Containment plan including non-conforming quantity
5. Purchase order number(s) impacted
6. Non-Conformance description/problem summary and requirement violated

3.4 MATERIAL REVIEW AUTHORITY

The supplier's material review authority may include rework, but shall not extend to "repair" or "use-as-is" without prior documented approval from the Rockwell Collins buyer. Supplier shall submit to buyer all requests for variance from contract, order, specification, or drawing requirements. Supplier shall not submit requests for variance to the Rockwell Collins customer.

4.0 SUB-TIER SUPPLIER MANAGEMENT

4.1 SUBCONTRACTING OF THE ORDER

The supplier shall not subcontract in whole, or substantially in whole, performance of any order without prior written consent of the buyer. Requests for subcontracting an order shall be made by the supplier in writing to: collinschanges@rockwellcollins.com. Provide detail from the appropriate items in the list. All affected Rockwell Collins part numbers must be listed in the email notification.

4.2 REQUIREMENTS FLOWDOWN

Supplier shall flow down applicable specifications, descriptions, requirements, and all requirements in this document to sub-tier suppliers. For items unique to Rockwell Collins, supplier shall indicate that Rockwell Collins is the customer and has design authority, as part of the text of the purchase contract to any sub-tier supplier.

4.3 SUB-TIER SUPPLIER MANAGEMENT AND SELECTION

The supplier shall perform evaluation and selection of any sub-tier suppliers based on their ability to supply product or service which is compliant to the buyer's requirements. Minimum criteria for this evaluation and selection shall be established, including periodic review, to demonstrate the sub-tier supplier's ability to provide conforming material or service and mitigate risk to the customer. Records of this evaluation and review shall be maintained in accordance with the document retention requirements defined in section 2.3 of this document.



Supplier Quality System Requirements

5.0 DEFINITIONS AND REFERENCES

5.1 DEFINITIONS

Build-to-Print:	A supplier of a component, assembly, minor system or sub-system for which the supplier has less than total design responsibility and authority
Commercial Off-The-Shelf:	(COTS) Standard catalog hardware and is a part or material that conforms to an established industry or national authority published specification, having all characteristics identified by test description, National/Military Standard Drawing, or catalog item.
Nadcap:	Nadcap (formerly NADCAP, the National Aerospace and Defense Contractors Accreditation Program) is a global cooperative standards-setting program for aerospace engineering, defense, and related industries
Performance:	The quantitative specification of an item's characteristics which may include the operating range, limits, and values
Repair:	The subjection of nonconforming material to an approved process designed to reduce but not completely eliminate the nonconformance
Rework:	All work performed on articles with known deficiencies so as to bring such articles into full compliance with documented requirements
Raw Material:	A basic material used in the production of goods, finished products or intermediate materials
Subcontract Supplier:	A producer of a major system or sub-system with or without design responsibility. This includes suppliers that provide system integration, maintenance and/or overhaul services

5.2 ACRONYMS

CFR:	Code of Federal Regulations
COTS:	Commercial Off-The-Shelf
DOT:	Department Of Transportation
DPRV:	Delegated Product Release Verification
FAA:	Federal Aviation Administration
FOD:	Foreign Object Debris/Damage
ISO:	International Organization for Standardization
KC:	Key Characteristic
MoE:	Measure of Effectiveness
NoNC:	Notice of Non-Conformance
QML:	Qualified Manufacturers List (as defined by the US Defense Logistics Agency)
QMS:	Quality Management System
QPL:	Qualified Products List (as defined by the US Defense Logistics Agency)



Supplier Quality System Requirements

SAR:	Supplier Action Request
SCAR:	Supplier Corrective Action Request
SPA:	Standard Purchasing Agreement
SPC:	Statistical Process Control

5.3 REFERENCES

074-8432-999	Supplier Advanced Quality System KC Summary and Detail Sheet.
489-0073-001	Supplemental Requirements for Fabricated Parts
580-0001	Bright Alloy Finish Specification
580-0034	Chem-Film on Copper and Copper Alloys
580-0151	Tin Plate Finish Process Specification
580-0225	Tin Plate Process Specification
580-4023	Heat Treatment for Electrical Iron
839-8031-001	Inspection and Test Requirements for Key Characteristics of Components
952-0766	Corrosion Resistant Electroless Nickel
14 CFAR Part 21.9	Replacement and Modification Articles
14 CFR Part 120	U.S. Department of Transportation, Conducting Workplace Drug & Alcohol Testing
49 CFR Part 40	U.S. Department of Transportation, Conducting Workplace Drug & Alcohol Testing
99FP	Rockwell Collins General Terms and Conditions of Purchase
ANSI/IPC A-610	Acceptability of Electronic Assemblies
AS/EN9100	Quality Management Systems: Aviation, Space & Defense Organizations standard
AS5553	Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition
AS9117	Delegated Product Release Verification
AS9131	Nonconformance Data Definition and Documentation
EIA JESD-625	Requirements for Handling Electrostatic-Discharge-Sensitive (ESDS) Devices
J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies
NAS-412	Foreign Object Damage/Foreign Object Debris (FOD) Prevention
RC QMS-I-308	Rockwell Collins- AS/EN9102 Electronic FAIR Submittal Instructions
RC-QMS-I-358	Quality Assurance Purchase Order Codes



Supplier Quality System Requirements

6.0 AVIONICS AND IN-FLIGHT ENTERTAINMENT PRODUCT MAINTENANCE

6.1 MAINTENANCE SCOPE

6.2 Maintenance and Preventive Maintenance Providers

Maintenance applies to products returned from service for repair, overhaul, modification, test or Inspection (commercial and non-government).

U.S. suppliers, including all their sub-tier suppliers, performing maintenance or preventative maintenance of products shall have an approved DOT Drug & Alcohol testing program that is compliant with 14 CFR Part 120 and 49 CFR Part 40 for all applicable FAA -regulated customers.

All non-U.S.-based suppliers that use US-based sub-tiers to perform maintenance of products shall inform Rockwell Collins of their US-based sub-tiers have an approved DOT Drug & Alcohol testing program compliant with 49 CFR Part 40 for all applicable FAA-regulated customers.

6.3 MAINTENANCE EXECUTION

All suppliers shall provide records of service work performed, including the following information as applicable:

- Preliminary Inspection – Determine state of preservation (functional test, if applicable) and record obvious defects, damage, or contamination.
- Hidden Damage Inspection – Catastrophic damage, contamination, sub-par workmanship or questionable configuration discovered in preliminary inspection.
- Statement of Work Performed – Detailed description of work performed, including a description of parts replaced, adjustments performed, modifications installed and inspection and test results as applicable.

Suppliers performing maintenance shall use the maintenance data and documents, approved by Rockwell Collins, or as applicable, Airline Maintenance Manuals. Maintenance is defined to include the terms defined below and in accordance to Statutory and Regulatory Requirements.

Repaired: Nonconforming product or component part restored to a serviceable condition in conformance with data acceptable to the FAA or other aviation regulatory agencies as applicable.

Overhauled: A product or component part is overhauled when using methods, techniques and practices acceptable to the FAA (or other aviation regulatory agencies as applicable) and has been disassembled, cleaned, inspected, repaired as necessary and reassembled. In addition, it has been tested in accordance with approved standards and technical data acceptable to the FAA or other regulatory aviation agencies as applicable.

Modified: A product or component part altered in conformance with approved data acceptable to the FAA or other aviation regulatory agencies as applicable.

Inspected or Tested: A product or component part which has been examined by means of visual inspection and/or functional testing, utilizing approved data acceptable to the FAA or other aviation regulatory agencies as applicable.

Suppliers performing maintenance shall use approved parts as outlined in 14 CFAR Part 21.9. If the supplier does not have FAA (or other aviation regulatory agencies as applicable) approval for production parts, contact the Rockwell Collins International and Service Solutions quality organization for the appropriate approval.



Supplier Quality System Requirements

6.4 MAINTENANCE TRAINING

Suppliers performing aviation maintenance shall maintain a Training Program for all maintenance personnel completing Rockwell Collins' repairs, including drug and alcohol training required by U.S. Department of Transportation and FAA regulations. Training shall be documented and include formal and on-the-job training activities. Personnel training shall be periodically reviewed and documented to identify that it is still adequate. Internal training instructor's qualifications and responsibilities shall be documented. Training records shall be maintained for two years after the person leaves the supplier's company. Training records shall show evidence that those personnel performing repairs are qualified to perform such repairs. The Training Program shall provide training on a recurring basis for all employees on Human Factors and FOD Training, and for supervisors responsible for evaluating drug and alcohol use on the signs of drug or alcohol misuse and abuse.

6.5 MAINTENANCE REQUIREMENTS FLOWDOWN

Suppliers performing maintenance that subcontracts any portion of the repair maintenance of the article to a sub-tier subcontractor shall have a documented procedure in place to detail how Rockwell Collins requirements as outlined in any contract, RC-9000, individual repair order or other regulatory requirements are effectively flowed to the sub-tier subcontractor

- Detail how the sub-tier subcontractor is qualified to meet the requirements outlined in any contract, RC-9000, individual repair order or other regulatory requirements
- Detail an audit program to periodically re-qualify these sub-tier subcontractors
- Maintain quality audit documents at least 3 years
- Detail how the sub-tier contractor meets the drug and alcohol testing and training requirements of 14 CFR Part 120 and 49 CFR Part 40

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