Supplier Quality Requirements

CONTENTS

1.0 SCOPE

This document defines Lockheed Martin (LM) Rotary Mission Systems (RMS) supplier quality requirements.

Definitions

- Buyer: Identified on and administrates the Purchase Order (PO)
- Seller: Supplier identified on the face of the PO
- Sub-tier: Suppliers contracted by the Seller to provide parts, materials, perform manufacturing operations, or perform special processes
- **Sikorsky Purchase Order:** PO Received through the Sikorsky Supplier Portal/iSeries
- **Other RMS Purchase Order:** PO Received through the Exostar/LMP2P portal

Unless specifically defined in this document, capitalized terms shall have the same meaning as in the applicable CorpDoc.

The terms “Item”, “PO”, and “Buyer” as used herein have the same meaning as the terms “Work”, “Contract” and “Lockheed Martin”, respectively.

The document applies to Sellers and their Sub-tiers who furnish product, material, processes, or services (manufacturer or maintenance provider) as a contract requirement regardless of supplier’s industry, regulatory accreditation, or certification status. Sellers shall flow down applicable requirements to Sub-tiers.

The PO line item may identify additional requirements. Requirements identified in the PO take precedence over this document in the event of a conflict.

Any exceptions or changes to this document must be approved in writing by LM Supplier Quality and incorporated in the PO**.**

These requirements do not apply to Purchase Orders placed internally between LM businesses.

Seller shall ensure employees involved with fulfillment of LM service or product deliverables understand how their work contributes to meeting the needs and safety requirements of the customer. Additionally, it is expected that all Sellers and their employees perform ethically in the course of conducting LM business and **Do What’s Right, Respect Others, and Perform With Excellence**.

Additional information can be found in the **LM Supplier Code of Conduct** linked below.
https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/ethics/supplier-code.pdf

1.1 Supplier Portals

The RMS Procure-2-Pay (P2P) system is accessible through Exostar. Link to Exostar: https://www.myexostar.com/

Supplier Corrective Action Requests (Paragraph 3.12) will be administered through Procure-2-Pay (P2P) and accessible with Exostar

1.1.1 Sikorsky Purchase Orders

The Sikorsky Supplier Quality System (iSeries) is accessible through the Sikorsky Supplier Portal. Suppliers must use iSeries to:

- Review Quality Requirements:
  - Unique part requirements, including Key Characteristics
  - Inspection requirements
  - Flight Safety requirements
  - Specifications and revision levels
- Request required inspections
- Upload required documentation
- Creating an Authorization to Ship (ATS) number prior to shipment
- Submitting Discrepancy Reports as needed to initiate Sikorsky MRB review

Link to iSeries: Sikorsky Supplier Portal https://suppliers.sikorsky.com/

1.1.2 All Other RMS Purchase Orders

Suppliers must use P2P to:

- Review Purchase Order Quality Requirements:
  - Inspection: First Article, In-Process, RMS Source Inspection, Government Source Inspection
  - Special Processes
  - Data Submissions: test, inspection, certifications, etc.
  - Part and Specification revision levels
- Request required inspections and PO Reviews
- Upload required documentation
- Create a Barcode prior to shipment
- Review a Supplier Corrective Action Notification (SCAN)

2.0 STANDARD PROCESS FLOW

This section intentionally blank.

3.0 IMPLEMENTATION REQUIREMENTS

REQUIREMENTS APPLICABILITY

Supplier Type Identification

For reference, Supplier shall use the following table to identify which of the Procure-2-011 requirement sections apply to each Supplier Type. Supplier Types are identified per the descriptions below, delineated by Deliverable Material and Service providers.

The same figure shall be applied to Seller's supplier.

Note: The Purchase Order line item may identify additional requirements.

Deliverable Material Providers:

Supplier Types may change depending on the nature of each Purchase Order Line Item.

at least one Flight Safety part (see Section 3.25).	Yes →	Type 1
No ↓		
at least one finished part defined by a Buyer provided drawing. For Sikorsky Includes Bolts and Bearings (see Section 3.10)	Yes →	Type 1
No ↓		
only parts defined by the Seller's drawings.	Yes →	Type 2
No ↓		
only parts defined by an established industry or military specification (ex. AN, AMS, MS, NAS etc.).	Yes →	Type 3
No ↓		
raw material.	Yes →	Type 4
No ↓		
Commercial Off the Shelf (COTS) parts not transformed, assembled, or otherwise modified by the Seller (Authorized Distributor)	Yes →	Type 4
No ↓		
Maintenance Repair Operations (MRO) or rework.	Yes →	Type 5
No ↓		
other hardware not listed above.	Yes →	Contact Buyer

Service Providers:

Special processes only (see Section 3.2)	Yes →	Type 6
No ↓		
Calibration or Laboratory services	Yes →	Type 7
No ↓		
Other services not listed above	Yes →	Contact Buyer

REQUIREMENTS APPLICABILITY MATRIX

Procurement Type	1	2	3	4	5	6	7
3.1 QUALITY MANAGEMENT SYSTEM (QMS)	x	x	x	x	x	x	x
3.2 SPECIAL PROCESSES	x	x				x	x
3.3 SUB-TIER SUPPLIERS	x	x	x	x			x
3.4 COUNTERFEIT AVOIDANCE	x	x	x	x	x		
3.5 PARTS SUBSTITUTION	x	x	x	x	x		
3.6 SUPPLIER PROCESS CHANGE CONTROL AND NOTIFICATION REQUIREMENTS	x	x				x	
3.7 FOREIGN OBJECT DAMAGE (FOD) PREVENTION	x	x	x	x	x	x	x
3.8 MERCURY EXCLUSION	x	x	x	x			
3.9 ADDITIVE MANUFACTURING	x	x	x				
3.10 FIRST ARTICLE INSPECTION (FAI)	x	x					
3.11 NONCONFORMING MATERIALS	x	x	x	x	x	x	x
3.12 CORRECTIVE AND PREVENTIVE ACTION	x	x	x	x	x		
3.13 RIGHT OF ACCESS	x	x	x	x	x	x	x
3.14 MATERIAL ACCEPTANCE	x	x	x	x	x		
3.15 ELECTRONIC DATA SUBMISSION	x	x	x	x	x	x	x
3.16 MANUFACTURER IDENTIFICATION	x	x	x	x			
3.17 PACKAGING	x	x	x	x	x		
3.18 AUTHORIZATION TO SHIP (ATS) BARCODING	x	x	x	x	x		
3.19 QUALITY RECORDS	x	x	x	x	x	x	x
3.20 LANGUAGE	x	x	x	x	x	x	x
3.21 CALIBRATION	x	x	x	x	x	x	x
3.22 GENERAL REVISION CONTROL	x	x	x	x	x		
SIKORSKY PROCUREMENTS ONLY							
3.23 DRAWING INTERPRETATION	x	x	x				
3.24 SUPPLIER TECHNICAL HELP	x	x	x	x	x		
3.25 FLIGHT SAFETY PARTS	x						
3.26 VISION EXAMS	x	x	x	x	x	x	x
3.27 REDUCED DIMENSION AND MODEL BASED DEFINITION	x						
3.28 INSPECTION CHECKLIST	x	x		x			
3.29 ACCEPTANCE & QUALIFICATION TESTING	x	x	x				
3.30 AUDIT	x	x	x	x	x		
3.31 CONTROL OF SUB-TIER SUPPLIERS	x	x	x	x			
APPENDIX A: DQR	x	x	x	x			
APPENDIX B: RDD & MBD	x	x	x				
APPENDIX C: FOD	x	x	x	x	x	x	x

Approved exceptions to the quality requirements in this document may be granted on a case-by-case basis. Each exception must be documented and approved either on the purchase order itself or via the Lockheed Martin Procure-to-Pay (P2P) system using survey code SQBQ201100. This ensures proper visibility and tracking of all exceptions. For questions, related to this contact RMS Supplier Quality Services supplier-qa-services.fc-mst@lmco.com

Note: If a new revision of this document is released, a reverification of approved exceptions may be required to confirm compliance with the updated requirements.

3.1 QUALITY MANAGEMENT SYSTEM (QMS)

3.1.1 Sikorsky Purchase Orders:

Seller shall have QMS certifications in accordance with the below table unless otherwise indicated on the face of the purchase order or granted by exception in writing.

Minimum QMS & Certification Requirements	Provider type
SAE AS9100	Manufacturers of: Flight Safety, Buyer provided drawing, or Seller designed parts excluding COTS
ISO9001	Only when indicated on the Purchase Order Line Item
SAE AS9120	Distributors
SAE AS9110 or Appropriate Airworthiness Authority Certification	Repair Stations
or Nadcap AC7004	Special Processors
Nadcap or International Laboratory Certification	Providers of Calibration or Laboratory services

Seller AS/EN9100 third-party certification from an accredited registrar shall be listed in the “Online Aerospace Supplier Information System” (OASIS).

Only certifications completed by the Buyer or an IAF (International Accreditation Forum) accredited company will be accepted.

Seller shall permit Buyer access to data in OASIS and Nadcap databases including registration documentation, certification, audit reports, findings, corrective actions, etc.

3.1.2 All other RMS Purchase Orders:

Unless otherwise defined on the face of the purchase order, supplier shall maintain an appropriate quality management system suitable to the scope and complexity of the products and/or services provided. This system shall include controls and processes necessary to ensure product/service conformity and compliance with applicable purchase order requirements. Suppliers without a certified QMS may be subject to LM on-site assessment.

3.2 SPECIAL PROCESSES

Special Process Definition - A documented method used to manufacture products where a product undergoes a physical, chemical or metallurgical transformation or inspection, conformance to the specification cannot be readily verified by normal inspection methods, and the quality of the product depends on use of specific equipment operated in a specific manner, under controlled conditions, by trained personnel with instructions, procedures and standards.

Processor **(Seller and/or Sub-tier if used)** shall have current required LM approval(s) in place at the time of hardware processing as specified in Requirements Applicability Matrix. Seller shall verify such approval prior to performing processing or selecting sub-tier processors. Refer to respective supplier portal for Special Process requirements and approved list of suppliers.

Seller is responsible for contacting the Buyer to request a LM survey 90 days prior to a LM survey expiration date at the Seller's facility or their Sub-tier's facility.

Special Processors shall have a QMS that meets AS9003 as a minimum. Nadcap's AC7004 certification is acceptable in lieu of AS9003.

Materials Testing Laboratories shall be certified by either Nadcap or the International Laboratory Accreditation Cooperation (ILAC).

Cancelled Specifications: Cancellation notices may indicate a superseding, or suggested replacement specification. Seller does not have authority to implement the superseding or suggested replacement. Seller shall contact the Buyer for approval prior to working with the superseding or replacement specification.

Items shall be supplied in accordance with the latest revision of the specification(s), unless a revision is required by the Buyer-provided drawing.

3.2.1 Sikorsky Purchase Orders – Additional Requirements:

Sub-tier suppliers performing special processes shall be approved by Sikorsky when the process is identified with a "Q" code in SS7777 Sikorsky Aircraft Material and Process Specifications Index ("the M&P Index"). The approved special processor shall be identified during inspection order completion.

Nadcap Accreditation is required for:

- Bonding
- Chemical Processing
- Coating
- Heat Treating
- Material Testing
- Nondestructive Testing
- Welding
- Surface Enhancement (Shot Peening)

The Sikorsky Approved Source List (ASL) lists sources approved to perform these special processes, and may be found at the "Documents" link on the Quality tab of the Supplier Portal, located at https://suppliers.sikorsky.com/

Seller design authority may manage special process controls within their own QMS.

3.2.2 All Other RMS Purchase Orders – Additional Requirements:
The face of the Purchase Order will identify required special processes. These special processes shall be performed by sources approved by LM.

Sellers may be approved to manage their own special processors. These sellers are identified in P2P with approval code SQBASSPC00. Sellers with this approval code may only exercise this option as a seller and not a subtier.

For all processes except welding, and brazing, Nadcap certification is preferred in lieu of approval via LM survey. Approved Nadcap certifications are listed in LM's P2P system. Although Nadcap certifications may be listed on the Nadcap website (**eaudit.net**), they must also be reflected in LM's P2P system to be considered valid for use by a supplier.

The approved special processor will be identified during barcode creation, and sellers can access the list of LM-approved special processors through the Exostar Portal.

For questions related to LMP2P approvals, contact RMS Supplier Quality Services supplier-qa-services.fc-mst@lmco.com

3.3 SUB-TIER SUPPLIERS

Seller's Quality Management System shall include processes for:

- When products or services applicable to this PO (as specified in Requirements Applicability Matrix) are procured by the seller from Sub-tier suppliers, the seller shall flow the quality PO requirements and all other requirements, as necessary, to assure full compliance is achieved.
- Determining the capabilities of the Sub-tier prior to issuing a purchase order to the Sub-tier, and periodically reevaluating the Sub-tier to ensure compliance to Buyer's requirements
- Verifying material, process, and/or service from Sub-tiers meets the requirements of the Purchase Order, and material is traceable to the Purchase Order.

3.4 COUNTERFEIT AVOIDANCE

Reference the Purchase Order Terms and Conditions for Counterfeit Avoidance requirements.
https://www.lockheedmartin.com/en-us/suppliers/documentation.html
Note: Industrial and Maintenance, Repair, and Operations (MRO) Suppliers do not satisfy the following requirement: Original Component Manufacturer (OCM)/Original Equipment Manufacturer (OEM), or through an OCM/OEM authorized distributor chain

3.5 PARTS SUBSTITUTION

All parts supplied to this order must strictly adhere to the identified part numbers, drawings, and specifications. Any proposed substitutions, including upgraded, alternate, or equivalent parts, must be approved in writing by Lockheed Martin prior to shipment. If the part number specified on the PO is incorrect, obsolete, or different, the Lockheed Martin buyer must be notified immediately for evaluation and written direction.

Parts procured to specifications such as MIL, MS, SAE, etc. may be substituted as allowed by the subject specification. If a QPL/QML exists for the product, the Seller shall procure from an approved source. If no QPL exists, the Seller shall verify that the material meets the standard in full.

3.6 SUPPLIER PROCESS CHANGE CONTROL AND NOTIFICATION REQUIREMENTS

All notifications/requests within this requirement shall be submitted to the buyer in writing before implementing changes that affect safety, quality, fit, form, function, or reliability.

Requirements for all Sellers:

1. Seller shall notify Buyer, in writing, within 10 working days f any of the following:
    a. Issuance of any major Level II or Level III Corrective Action Request associated with Buyer Items, QMS, or processes associated with Buyer Items
    b. Issuance of a major finding by a third-party registrar
    c. Suspension of Government Source Inspection
    d. Change in Seller's quality system status
    e. Change in Seller's special process accreditations
    f. Loss of third-party registrar's certification status
    g. Adverse action taken by a US Government entity (e.g. FAA, CAA, OSHA, DoD, EPA, NASA, etc.), third party registrar, International Government Agencies, National Aerospace and Defense Contractors Accreditation Program (Nadcap) or other governing entity.
    h. Change in age control or shelf life requirements of material
2. Seller shall provide actions taken and/or planned actions related to any events listed above with the written notification.
3. Seller shall provide the approved corrective actions taken in response to any adverse actions reported above within 30 days of the written notification.
4. Seller shall permit Buyer access to data in OASIS and Nadcap databases including registration documentation, certification, audit reports, findings, corrective actions, etc. Failure to provide Level II Oasis access may require additional QMS audits.
5. Seller shall promptly notify buyer whey they become aware or reasonably suspects that any product delivered to Buyer is, or contains a component that is, subject to a recall notice, warning alert, GIDEP Alert, and/or any other type of notification or concern regarding product authenticity, quality, safety, process integrity, and/or specification compliance.
6. Seller shall notify Buyer, in writing, at least 90 days in advance of any sale, relocation, or closure of Seller's facility or transfer of manufacturing operations (subject to any legal or regulatory restrictions).
    a. Seller shall include the following as a minimum, in the written notification

1. Purpose of the applicable change
2. Address of the new location(s), when applicable
3. Assessment of actual or potential impact to current Purchase Orders
4. Risk mitigation plan to ensure compliance to existing requirements
5. Plan defining the identification, storage, protection, retrieval, and retention of records, if applicable
6. Master schedule and timeline of applicable change activity, and Relocation Coordinator/Point of Contact, if applicable
7. Updated DUNS information, when applicable

Additional requirements for buyer controlled part Numbers, vendor item control, or source control drawings:

1. Seller shall not implement, or otherwise deliver to Buyer, products incorporating any "material change" without the express prior written approval from the Buyer. Such approval shall not be unreasonably withheld but shall be dependent upon the Seller's thorough documentation of such proposed changes (including any analysis necessary to confirm continued suitability). Seller's notification and Buyer's approval of "material changes" shall not be interpreted to waive any other contractual requirement(s) or to otherwise relieve Seller from delivering fully compliant products.

Additional requirements for seller part numbers or industry standard parts:

1. Prior to delivering any products incorporating a "material change", Seller should provide advance notice to Buyer, as they become aware and allow sufficient time to reasonably evaluate the change and, if necessary, to place an end-of-life order for the unchanged products.
2. Where applicable, Seller shall notify Buyer of changes to form, fit, function, and/or obsolescence that may affect end item performance to products purchased within the last 24 months of the change date. These notifications should be submitted as the Seller becomes aware, this includes seller designed and Commercial off the Shelf (COTS) products within Lockheed Martin Technical Design Package.

Definition:

Material Change - any alterations to product form, fit, and/or function, reliability, the design (including Software/Firmware), technical specifications, materials, component sourcing, production process, testing techniques, whether instigated by Seller or its Sub-tier suppliers.

3.6.1 Sikorsky Purchase Orders – Additional Requirements:

All requirements above apply. For Work Transfers, the Seller shall submit an SA1266 form to the Buyer when making changes related to parts requiring qualification.

3.7 FOREIGN OBJECT DAMAGE (FOD) PREVENTION

1. Seller shall maintain a Foreign Object Damage (FOD) prevention program. As a guideline, Seller may maintain a FOD Prevention Program using one of the following specifications:
    a. Aerospace Standard AS9146, Foreign Object Damage (FOD) Prevention Program - Requirements for Aviation, Space, or Defense Organizations
    b. National Aerospace Standard 412 (NAS 412), Foreign Object Damage/Foreign Object Debris Prevention.
2. Whenever or wherever Foreign Object Debris (FOD) can be entrapped or Foreign Objects (FO) can migrate, Seller shall ensure that applicable FOD prevention requirements are flowed down to Seller's subcontractors at every tier.
3. By delivering Items to Buyer, Seller shall be deemed to have certified to Buyer that such items and packaging are free from any FO/FOD.

3.7.1 Sikorsky Purchase Orders – Additional Requirements:

Sikorsky FOD Prevention reference Appendix C.

3.8 MERCURY EXCLUSION

Material supplied shall contain no functional mercury and shall not be contaminated by mercury or mercury compounds. Seller shall obtain approval from the Buyer before shipment if: (a) functional mercury is present; (b) mercury contamination is suspected, or (c) mercury is knowingly introduced in the manufacturing process. RoHS compliant parts are considered compliant to this requirement.

3.9 ADDITIVE MANUFACTURING

Seller is responsible to notify the Buyer when additive manufacturing as defined in ISO/ASTM 52900 will be used to manufacture the product or any part of the product being supplied. Notification is not required when the LM design drawing specifies additive manufacturing as the production method. This requirement does not apply to COTS material (COTS - as defined in FAR 2.101).

3.10 FIRST ARTICLE INSPECTION (FAI)

Seller may be required to perform a First Article Inspection (FAI) and submit a First Article Inspection Report (FAIR) in accordance with AS9102C and the RMS Supplier FAI Guidelines located in the Quality Assurance section of the RMS Business Area Procurement Website.

https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/rms.html

The Seller shall perform a first article inspection (Full or Partial) when required by the Purchase Order, or if any of the conditions below occur. Seller is responsible for determining applicability of conducting a Full or Partial FAI per AS9102 requirements

a.) First time product is manufactured for production and/or supplied to Lockheed Martin.
b.) A change in engineering definition affecting design characteristics
c.) A change in manufacturing source(s), process(es), inspection method(s), tooling, materials/alternate materials, or location of manufacture
d.) A change in the numerical control program or translation to another media
e.) A natural or man-made event, which can adversely affect the manufacturing
f.) An implementation of corrective action required to complete a previous FAI, as defined in AS9102C 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, or as specified by the customer

For Modified COTS, an FAI is required for the modified characteristics.

The Seller is not required to submit a FAIR if delivering:

- COTS parts or raw materials
- Rework or repair Purchase Orders not associated with a revision change
- Parts or materials conforming to industry or national authority specifications, where all characteristics are identified by text description (for example, MIL-Spec parts governed by an active QPL).

For Sikorsky Purchase Orders, bolts and bearings require an FAI.

Seller shall verify that operations performed at Sub-tier(s) meet requirements and shall document them as part of the FAIR.

Seller may utilize AS9102C forms 1-3 for their First Article Inspection Report. Forms other than those depicted in Appendix B of AS9102C may be used; however, they shall contain all "Required" and "Conditionally Required" information and have the same field reference numbers. AS9102C Form Templates can be downloaded in Excel format from the Quality Assurance Section of the RMS Business Area Procurement Website (https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/rms.html)

Seller shall retain the First Article Inspection Report and supporting documentation in accordance with the terms and conditions of the purchase order. Supporting documentation includes certificates of conformance for raw materials and special processes (as defined in the AS9100 specification and identified on the engineering drawing), drawings, and test/inspection reports.

3.10.1 Sikorsky Purchase Orders – Additional Requirements:
For Sikorsky procurements of bolts and bearings an FAI is required including COTS.
FAI documentation to be uploaded to iSeries portal. https://suppliers.sikorsky.com/

Seller shall upload the First Article Inspection Report during the inspection order process in iSeries. For further instructions on Inspection Orders and Requesting FAIs please refer to the iSeries training documentation on the Sikorsky Supplier Portal, Quality Tab.

3.10.2 All Other RMS Purchase Orders – Additional Requirements:
Refer to the following link for P2P Exostar How-To videos for guidance:
https://www.myexostar.com/?ht_kb=lmp2p-training-resources#videos

Seller shall upload the First Article Inspection Report during the "Ship-to LMC" process per section 3.14, unless otherwise directed by PO.

For further instructions on Inspection Lot Attachments and Requesting FAIs please refer to Pages 69 and 80 respectively within the below link:
https://www.myexostar.com/wp-content/uploads/2022/06/LMP2P-Quality-Ship-To.pdf

3.11 NONCONFORMING MATERIALS

3.11.1 Cost Recovery

Notwithstanding and in addition to any other provisions, and without limiting any of Buyer's rights and remedies, Seller shall be liable for Buyer's actual costs, expenses and damages related to or arising from nonconforming goods.

If Buyer identifies a product nonconformity, the parties acknowledge that the administrative costs and expenses of processing the nonconformity are not subject to exact calculation and that a charge of $1000 may be assessed by Buyer as damages solely for processing each nonconformity. The damages shall be in addition to, and shall neither be a waiver of, nor otherwise limit, Buyer's ability to pursue claims for other actual damages against seller resulting from its failure to perform its duties herein.

3.11.2 Disposition of Nonconforming Products

Once a deviation or waiver (nonconforming) condition is identified, continuing to add value to the item(s) without Buyer approval is at Seller risk. Unless otherwise specified in this purchase order or other contractual documentation, the Seller and/or any of their suppliers/subcontractors do not have authority to process use-as-is, repair, or standard repair procedures via their Material Review Board (MRB).

This MRB authority requirement is not applicable to OEM's of Commercial Off the Shelf Products (COTS).

These dispositions, including Request for Deviations and Request for Waivers, require Buyer MRB disposition and shall be submitted to the Buyer for approval (this does not include rework or scrap). Buyer and Buyer's customers retains the right to verify, accept, and/or reject implementation of the approved nonconformance disposition. Seller shall not scrap or rework Buyer Furnished Material without prior written authorization from Buyer.

Definitions for Rework, Repair, Use-As-Is, Deviation, and Waiver are as follows:

a. Rework- Work performed in reprocessing material to make it conform to the contract requirements. A rework item complies with drawing or other specified requirements following the application of the rework process.
b. Repair- A process designed to make material acceptable for its intended function, but not in conformance with documentation or other specified requirements. Repair is distinguished from rework in that the item to be repaired shall not comply with applicable drawings after the repair, but shall be acceptable for the intended use.
c. **Use-As-Is (UAI) - A disposition of material with a minor defect when the appropriate authority determines that the material is satisfactory for use without any additional rework or repair. Defects other than minor, must be reworked to a minor level prior to being documented as use-as-is.**
d. Deviation- A written authorization from the Buyer, granted prior to the manufacture of an item, to depart from a specification or drawing for a specific unit(s) or a specific period.
e. Waiver- A written authorization from the Buyer to accept an item, which during production or inspection, is found to depart from specified requirements.

3.11.2.1 Sikorsky Purchase Orders – Additional Requirements

Processing Nonconforming Parts

Variance Request is the initiation of an MRB request per section 3.11.2, this is processed in iSeries per training on the Sikorsky Supplier Portal, Quality tab.

Nonconforming Material Delivered to Sikorsky – Escapes Management

The seller shall notify buyer of delivered nonconformances via the Supplier Portal Supplier Disclosure form. (formerly - Notification of Potential Escape)

Inform Sikorsky within 24 hours of suspect nonconforming product shipped regardless of destination. Failure to inform Sikorsky within 24 hours may result in SCAR issuance.

Sikorsky DR Reversal
Suppliers may submit a DR Reversal Request no later than 90 days after return receipt of the defective part(s). Reversal Requests must include objective evidence of investigation and results. Suppliers who do not receive the return of defective material may submit DR Reversal Requests up to 90 days from receipt of defect notification.

Cancellation of "D" Stamps

DQRs shall stamp with their company's quality stamp and/or initial to process rejected product {Reminder to interlock your internal quality stamp over the rejection stamp, and be sure to stamp and/or initial adjacent next to D stamp}, including electronic signatures in iSeries. Additionally, all documentation will be stamped with the DQRs internal quality stamp as well as initial and date. Reference SS8798 for more information.

3.12 CORRECTIVE AND PREVENTIVE ACTION

- When required, the Seller agrees to provide a formal response to all Supplier Corrective Action Requests (SCAR) within the timeframe indicated in the P2P SCAR module via Exostar (https://portal.exostar.com).
- Documentation of root cause, containment, corrective action, preventive action, and effectivity will be submitted for Buyer approval.
- Failure to provide a formal SCAR response within the established time frame shall adversely affect supplier's quality rating and may impact future procurements.

Lockheed Martin has created a training on Root Cause and Corrective Action (RCCA), providing an overview of RCCA methodologies. This training outlines expectations for a thorough response, including clear root cause identification, actionable corrective and preventative measures, and effective implementation plans. The training can be accessed via this link.

3.12.1 Sikorsky Purchase Orders – Additional Requirements:

When formal Root Cause and Corrective Action are requested by Sikorsky, the seller will respond, within the following periods: =

- Three (3) days of issue date for DRs marked MRB in the Preliminary Review Disposition Block
- Thirty (30) days if issue date for DRs marked D/S (Direct Scrap), S/R (Standard Repair), RTV (Return to Vendor), or RWK (Rework) in the Preliminary Review Disposition Block
- Thirty (30) days of issue date for any SCAR unless otherwise specified by Sikorsky

Sikorsky Supplier Quality reserves the right to require supplemental training as a corrective action.

3.12.2 All Other RMS Purchase Orders – Additional Requirements:
A Supplier Corrective Action Notification (SCAN) will be automatically issued when a Quality Notification closes in LMP2P as supplier responsible.

A SCAN is a notification only and does not require a response from the supplier.

3.13 RIGHT OF ACCESS

- The seller is required to grant or arrange access for the buyer, the buyer's customers, and/or regulatory agency personnel to all facilities where work related to this contract is being performed or is scheduled to be performed. This access includes facilities of the seller's sub-tier suppliers and is to be provided for the purpose of conducting item inspections, surveys, or system/process surveillance to verify compliance with the requirements of this Purchase Order.
- Seller shall flow this quality requirement for facility access to its sub-tier suppliers and\or agents with instructions that it is to be flowed down to subcontractors at every tier.

3.14 MATERIAL ACCEPTANCE

The following sections provide detailed information on the acceptance procedures, including Acceptance at Source, Delegated Acceptance at Source, Government Acceptance at Source, and Acceptance at Destination, as well as the associated protocols and responsibilities. It is the vendor's responsibility to carefully review and comply with these requirements, as specified in the applicable Purchase Order.

3.14.1 Acceptance At Source (Buyer Source Inspection)
When the PO requires Buyer Accept at Source, Buyer acceptance can involve periodic surveillance by Buyer of Seller's quality system, manufacturing processes, or physical item, including work at Seller's sub-tiers.

Buyer acceptance, prior to shipment, shall be performed at the Seller's facility address referenced on Buyer's PO. If Seller's Item manufacture, acceptance or shipment will occur at location other than the contracted PO address, Seller shall notify Buyer's Supplier Quality at least 30 days prior to manufacturing activities and provide the name and location where Item manufacture, acceptance or shipment will occur.

Seller shall not ship product until Buyer authorization is granted.

Authorization to ship without Lockheed Martin source inspection does not waive Government Source Inspection (GSI) requirements when identified on the PO.

3.14.1.1 Instructions For Requesting Inspection - Sikorsky Purchase Orders:
Purchase Orders issued by Sikorsky visible in the Sikorsky Supplier Portal:
For assistance with requesting source inspection, access the Verify supplier portal via the link in the Sikorsky Supplier Portal. https://suppliers.sikorsky.com/

3.14.1.2 Instructions For Requesting Inspection - All Other RMS Purchase Orders:
Lockheed Martin Source Inspection is required when indicated on the face of the Purchase Order. Select the PO line in the "Ship to LMC" tab of the LM P2P portal and click "request LM Action". Enter the quantity to be inspected and the date desired for the visit of the source representative. Seller shall notify Buyer 5 days in

advance when materials are ready for acceptance inspection. Material should be ready to inspect at time of request. If material status changes after inspection request, communication between LM and the source inspector must be established. Lots will either be rescheduled, canceled or rejected based on the timing of the change. Upon submission, Seller will receive an inspection lot number. In some cases, an authorization to ship without source inspection will be granted due to dock to stock programs(AIM or QVP).

For assistance with requesting source inspection, contact Supplier Quality Services at supplier-qa-services.fc-mst@lmco.com

Link to Exostar: https://www.myexostar.com/

3.14.2 Delegated Acceptance at Source (Delegated Quality Representative)
When Buyer delegates acceptance to a Seller representative, the delegate shall complete product acceptance actions in the applicable Seller procurement system, LM P2P or iSeries.

The Delegated Quality Representative (DQR), authorizes a supplier representative to act as an agent of RMS. DQRs perform product inspection & acceptance and release product directly to RMS or to the supplier's next level assembly.

3.14.2.1 Sikorsky Purchase Orders:

RMS suppliers are eligible to participate in this program when they meet the requirements outlined in, Appendix A, Designated Quality Representative (DQR).

Note: Final acceptance of a Flight Safety Part cannot be completed by a DQR.

3.14.2.2 All Other RMS Purchase Orders:
DQR will be set up by LM with the supplier on selective basis.

3.14.3 Government Acceptance at Source (Government Source Inspection)
Government Source Inspection (GSI) is required when indicated on the face of the Purchase Order or when indicated in the Sikorsky supplier portal GSI report. Refer to the instructions on the face of the Purchase Order for P2P procurement or in iSeries for Sikorsky purchase orders.

3.14.4 Acceptance at Destination
When the PO requires inspection at Buyer's facility, the supplier will upload supporting documentation prior to shipment.

3.14.4.1 Sikorsky Purchas Orders:
Upload on the Sikorsky supplier portal. Link to iSeries: Sikorsky Supplier Portal https://suppliers.sikorsky.com/

3.14.4.2 All Other RMS Purchase Orders:
Link to Exostar: https://www.myexostar.com/

3.15 ELECTRONIC DATA SUBMISSION

3.15.1 Sikorsky Purchase Orders:
For Sikorsky procurements, required data collections are detailed in the SQS inspection order. These data requirements shall be uploaded on the Sikorsky Supplier Portal.

Link to iSeries: Sikorsky Supplier Portal https://suppliers.sikorsky.com/

3.15.2 All Other RMS Purchase Orders:

- The Seller shall submit all data electronically using the P2P ship to module via Exostar (https://portal.exostar.com) prior to shipment when documentation requirements are specified in the Purchase Order. The Seller shall create an Inbound Delivery (IBD) shipping document and include the manufacturer's cage code, any applicable traceability data (Heat Lot, Date Code, Lot Number, etc.) and upload any applicable documentation.
- Paper copies of traceability data are not required with the shipment of material when the data has been provided electronically and/or documentation has been uploaded in the shipping document. The Seller is responsible for assuring objective evidence is retained for all information provided electronically. Material received at the Buyer without electronic data/documentation may be subject to rejection and return at the Seller's expense.
- Additional data deliverable requirements may exist on the Purchase Order to provide data prior to shipment or with shipment for acceptance. Seller is responsible to review and comply with all requirements for shipment of data.

Training and Help:
LM Procure To Pay (P2P) ship to module training is available at:
https://myexostar.com/wp-content/uploads/2022/06/LMP2P-Quality-Ship-To.pdf

If you require further assistance regarding electronic data submittals contact LM P2P helpdesk at 863-647-0558. Questions specific to PO information should be directed to the Buyer.

Refer to the following link for P2P Exostar How-To videos for guidance
https://myexostar.com/?ht_kb=lmp2p-training-resources#videos

3.16 MANUFACTURER IDENTIFICATION

3.16.1 Sikorsky Purchase Orders:
Products identified with Sikorsky markings (part number, acceptance symbols, etc.) may only be shipped to Sikorsky or a Sikorsky approved destination.

3.16.2 All Other RMS Purchase Orders
Seller shall record the CAGE code of the original product manufacturer on the packing list and/or on the smallest unit container and/or the outer shipping container. The CAGE code of the headquarters or main plant for the original equipment manufacturer/original component manufacturer is acceptable for commercial product.

If the cage code is not available, the name and address of the manufacturer shall be provided.

The Commercial And Government Entity (CAGE) code of manufacturers are assigned and maintained by the defense logistics agency and can be found at: https://cage.dla.mil

3.17 PACKAGING

3.17.1 Sikorsky Purchase Orders:
Sikorsky packaging requirements covered in FOD Prevention reference Appendix C.

3.17.2 All Other RMS Purchase Orders:

- The Seller shall comply with packaging requirements identified in Buyer drawings, Statement of Work, or on the Purchase Order.
- Unless otherwise stated, the Seller will determine how to package products to prevent corrosion, contamination, deterioration, foreign object damage, ESD damage, physical damage, and other Seller identified shipment/packing risks during transit and storage. This may follow commercial industry standards such as ASTM D3951 or military practices such as MIL-STD-2073.
- Polyethylene Plastic material such as Pink Poly material shall not be used as a packaging material in direct contact with electro-mechanical/electronic/electrical components (i.e. as an insert in waffle packs or trays).

3.18 AUTHORIZATION TO SHIP (ATS) BARCODING

Barcode labels are required for all shipments to RMS.

3.18.1 Sikorsky Purchase Orders:
Seller is required to print SNR label and attach to the outer package with all shipments. SNR labels are generated via the Sikorsky Supplier Portal, Pick List.

Link to iSeries: Sikorsky Supplier Portal https://suppliers.sikorsky.com/

3.18.2 All Other RMS Purchase Orders:
Seller is required to print and supply at least (2) barcode labels with the shipment. Attach one label to the outside of each shipping container and attach the other to the packaging slip.

The Barcode and In-Bound Delivery Document are created as the same time and are critical to Buyer processing the receipt.

Instructions for creating a Barcode label via the P2P "Ship-To LMC" tab:

1. Highlight the PO, click on the "Ship To" tab at the bottom of the screen
2. If inspection lots are required, a screen will appear to select the lot. Highlight the inspection lot for shipment and click 'Submit'
3. At the next screen fill in the required information (identified with *).
4. When a special process text key is listed on the PO, identify the approved special processor by entering the vendor's LM ID number where required.
5. After all the required information is populated click on "Create Delivery/Barcode" button. The Inbound delivery number (e.g., # 180123123"), will display and will print out on the barcode label

6. A PDF document will pop up – save or print as needed

If multiple shipments for a PO Line Item are made on the same day, use the cartons feature on the ship-to module to create a single IBD barcode number for all the boxes, unless directed otherwise on the PO. The cartons feature shows the total number of boxes being shipped on the IBD and creates the same number of printable barcodes.

A support guide on how to implement this process is available via the Exostar website at:
https://www.myexostar.com/wp-content/uploads/2022/06/LMP2P-Quality-Ship-To.pdf

3.19 QUALITY RECORDS

3.19.1 Sikorsky Purchase Orders:

For each Key Characteristic (KC) identified, the following records shall be retained and provided upon request:

- Capability results and associated performance data
- Gage Repeatability and Reproducibility (GR&R) results. Results exceeding 30% of the tolerance shall require a customer approved recovery plan
- Control Plan in accordance with AS9103
- Process map

Quality Records shall be maintained by the Seller in a controlled condition. This requirement shall be flowed to sub-tier suppliers. Examples of Quality Records include, but are not limited to:

- Certificate of Compliance Form
- Material Certifications including chemical, physical, and raw material properties
- Special Process Certifications
- Certificates of Conformance/Authenticity/Traceability documentation that establish the pedigree of materials as authentic
- Deliverable and non-deliverable software verification & validation documentation
- First article inspection reports
- Receiving, In-process, and final inspection & test records
- Training and certification results
- Manufacturing records (e.g. planning sheets, routers, acceptance criteria, etc.)
- Nonconforming material disposition
- Procurement documents
- Radiographs, technique sheets, and related acceptance reports

Functional performance / test data minimum requirements:

- Test specification number, revision status, amendment number and addendum
- Part number / serial number and revision letter of material / component tested
- Test paragraph, required reading, actual reading (use positive statement, e.g. “No Leakage” if actual reading is not quantifiable
- Date test was performed
- Operator identification
- Inspection approval electronic signature/stamp/signature
- Blank entries that are not applicable shall be noted “N/A”

The Seller shall maintain the following quality records for the minimum retention periods specified below:

Time Period from manufacture	Description
40 years	-Flight safety, critical/major rotors, blades, transmission, flight control and airframe components (i.e. hubs, spindles, main rotor shafts) identified as Flight Safety Parts. -Radiographs for Flight Safety Parts in accordance with SS9211
10 years	-All other parts except off–the–shelf industry standard parts. -Radiographs for all non-flight safety parts requiring radiographs
7 years	Off-the-shelf / industry standard parts (e.g. AN, AS, MS, JAN, etc.)

3.19.2 All Other RMS Purchase Orders:

- Quality records shall be maintained for the lifetime of the Purchase Order plus 7 years after Purchase Order closure, or for longer periods if specified elsewhere on this PO.
- Quality records shall be established and maintained by the Seller to provide evidence of conformity to requirements and the effective operation of the Seller's QMS. As a minimum, quality records such as inspection reports, test reports, certifications, chemical, physical reports, and etc. shall be maintained.
- Records may be archived to an offsite location but shall remain legible and readily retrievable. Buyer reserves the right to periodically audit the Seller's historical records, retention policies, and practices.
- The Seller shall notify the Buyer of any organizational actions that may affect record retention compliance. This may include but is not limited to company merges, closures, or acquisitions.

Reference the Purchase Order Terms and Conditions for Quality Record requirements.
https://www.lockheedmartin.com/en-us/suppliers/documentation.html

3.20 LANGUAGE

The Seller shall have the capability to communicate verbally and in writing in the English language. All documents requiring submission or approval to the customer (e.g. reports, correspondence, drawings, notices, marking, documents, records, and other communications) shall be in the English language unless otherwise specified on PO.

The Seller shall communicate the language requirements (English) to external providers.

3.21 CALIBRATION

Seller shall maintain a system for calibration and maintenance of tools, jigs, inspection, and test equipment that is compliant in accordance with the Seller's QMS unless otherwise specified on the PO and SA7303 Sikorsky Tooling Bulletin.

3.22 GENERAL REVISION CONTROL

- When revision is identified on the purchase order, the revision of material delivered shall match the revision identified on the purchase order.

- Sellers with Design Authority shall use the latest released design revision as determined by the Seller's configuration control system or Technical Design Package approved by Lockheed Martin when required.
- The Seller shall use the latest released revision for referenced military, industrial, and commercial standard part numbers, at time of the Purchase Order placement unless otherwise stated in the design documentation or by the Buyer in the contract or Purchase Order.
- Cancelled specifications may have cancellation notices that indicate a superseding, or suggested replacement specification. Seller does not have authority to implement the superseding or suggested replacement. Seller shall contact the Buyer for approval prior to working with the replacement specification.

3.23 DRAWING INTERPRETATION

Sikorsky Purchase Orders:
Suppliers shall use the following documents when interpreting the requirements of drawings:

ANSI Y14.5	Dimensioning and Tolerancing
QATI 3091	Inspect Sequence for External and Internal Screw Threads
QATI 3206	Linear Expansion of Metals
SS 9209	Drawing Interpretation Manual

3.24 SUPPLIER TECHNICAL HELP

Sikorsky Purchase Orders:
Suppliers may communicate changes and technical questions to Sikorsky via the "Sikorsky Supplier Technical Help" online form available at https://supplierportaltechnicalhelprequest.sikorsky.com or on the Sikorsky Supplier Portal Quality tab under "Engineering Tech Help."

Use the Tech Help form for:

- An anomaly noted in a drawing, specification, process plan, tooling definition, or other technical documentation that could result in a nonconformance
- Lack of clarity or definition in a drawing, specification, process plan or tooling definition
- A request for an alternate method to a quality system requirement that requires Sikorsky approval
- A request to use a previous, obsolete revision of a drawing, specification, or process plan, due to issues preventing timely incorporation of the current revision

Note: Do NOT use the Tech Help form for processing nonconformances or in place of a drawing change.

Sikorsky will review Tech Helps and notify the supplier of required actions. Supplier CANNOT SHIP parts until Sikorsky provides a formal answer, except when the Tech Help request is a producibility improvement, an item covered under SS9208 Product Definition Design Criteria, a correction to a reference view, or a typographical error when the correct definition is elsewhere on the drawing.

3.25 FLIGHT SAFETY PARTS

Sikorsky Purchase Orders:
Supplier shall comply with the requirements of SS9211 for Flight Safety Parts unless otherwise specified by Sikorsky specific part definition.

3.25.1 FLIGHT SAFETY PARTS DOCUMENTATION

The Supplier shall submit all records and documentation related to Critical Characteristics or Processes identified in the Purchase Order. This includes documentation including but not limited to manufacturing processes, test plans, test results, storage & handling plans, training records, routing guides, parts traceability procedures, planning and processing documentation, and quality assurance and inspection processes and procedures. Upon RMS approval of Flight Safety Parts Documentation, including those operations identified as Critical Characteristics or Processes, they shall be "frozen".

3.25.2 FLIGHT SAFETY PARTS PROCESS CHANGES

Buyer authorization is required prior to incorporation of changes to Flight Safety Parts Documentation, Critical Characteristics or Processes, other aspects of the processes or characteristics, or use of alternate materials.

The Supplier shall only make changes to Flight Safety Parts Documentation and/or Critical Characteristics or Processes as required to maintain Buyer approval.

3.25.3 FLIGHT SAFETY VERIFICATION AND CERTIFICATION

The supplier shall develop and maintain a process for verification and certification of compliance with all the requirements of the Flight Safety Parts Documentation, including a system to certify and verify that each Critical Characteristic or Process is complied with, and that the parts are manufactured/processed in compliance with the Flight Safety Parts Documentation.

3.25.4 FLIGHT SAFETY ALERT ACTION

In the event that RMS identifies a product safety concern relating to or arising from a Flight Safety Part, and in advance of commencing negotiations for requests for equitable adjustment or cost recovery, the Supplier shall immediately comply with RMS direction to provide technical support, process design changes, and supply materials necessary to mitigate or alleviate the product safety concern.

3.25.5 FLIGHT SAFETY SUB-TIER CONTROL

Suppliers who procure Flight Safety Parts from Sub-tiers supplier for integration into RMS products shall:

- Procure Flight Safety parts from sources approved by RMS for the manufacture of Flight Safety Parts
- Ensure inspection of Flight Safety Parts is performed by RMS-approved inspectors
- Flow-down the requirements of SS9211 in Purchase Orders to Sub-tier suppliers.

3.25.6 FLIGHT SAFETY PARTS NONCONFORMANCES

Per SS9211, critical characteristics cannot be dispositioned as "repair" or "use-as-is". The Supplier shall not seek approval for the use of material with Critical Characteristic or Critical Process nonconformances.

3.26 VISION EXAMS

Sikorsky Purchase Orders:

Supplier shall ensure all individuals performing visual inspection and/or other product acceptance activities that require visual acuity be examined by a medically qualified person for visual acuity and color vision per the table below.

- Intervals shall not exceed one (1) year
- Individuals shall be tested in at least one (1) eye, either corrected or uncorrected
- Color Perception testing is required one (1) time only. Individuals shall be capable of adequately distinguishing and differentiating colors used in the method for which certification is required, the process being performed or inspection activity

Individual performing ...	Shall be compliant with ...
Visual inspection (i.e. calibration, non-weld, in-process, layout, dimensional)	Near vision requirements of • Snellen 14/18, (20/30), or • Jaeger 2
Visual Inspections on Welds	American Welding Society Standard (AWS) D17.1
Nondestructive Testing (NDT)	Aerospace Industries Association National Aerospace Standard (AIA/NAS) 410
Note: *Vision tests may be substituted for the options listed above providing the equivalence is verified and documented by a licensed optometrist or ophthalmologist.*	

3.27 REDUCED DIMENSION INSPECTION AND MODEL BASED DEFINITION

Sikorsky Purchase Orders:

Suppliers inspecting parts to Sikorsky 3D model-based engineering definition must comply to all requirements outlined in Appendix B.

3.28 INSPECTION CHECKLIST

Sikorsky Purchase Orders:
The supplier will prepare inspection checklists that list all dimensions/characteristics shown on the drawing and indicate by an acceptance stamp or signature that the dimensions/characteristics are acceptable. The tool/measuring instrument used to check each dimension/characteristic will be listed next to each characteristic. Inspection Certification for hardness characteristics must be provided for final part configuration as well as raw materials. Inspection documentation must contain foreign object damage (FOD) check.

3.29 ACCEPTANCE & QUALIFICATION TESTING

Sikorsky Purchase Orders:

Seller must receive Buyer approval for Acceptance Test Plans (ATPs) and Qualification Test Plan/Procedures (QTPs) when ATP/QTP is required by Buyer-provided drawings/specifications. ATP/QTP documents must be compliant with the Data Item Development Specification (DIDS) and/or drawing requirements. Deviation from the approved Qualification Test Plan/Procedure requires written authorization from the Buyer.

The supplier shall allow Buyer access to witness/audit any qualification test activities.

When third-party laboratories perform qualification, the laboratory shall have appropriate certification for the type of test, calibration, and quality standards (such as Nadcap and ISO/IEC 17025).

3.30 REMOVED

Section removed

3.31 CONTROL OF SUB-TIER SUPPLIERS

Sikorsky Purchase Orders:
"Where Sikorsky owns the design of an article purchased from a supplier: The supplier shall include a statement on sub-tier purchase orders that specifies "Sikorsky End Use".

Source Inspection: The Supplier shall clearly define procedures and instructions for source inspection activities performed by their representative and/or their designated representative.

4.0 SUPPLEMENTAL INFORMATION

Exostar Portal is used to access Buyer systems. You can reach the Exostar Customer Support team by visiting https://www.myexostar.com/ or by calling 703-793-7800. In Exostar, the Seller manages their profile including user roles and point of contact information.

5.0 RELATED RESOURCES

REFERENCED DOCUMENTS

The supplier can request copies of RMS specifications from the Buyer. The Supplier shall ensure compliance with the version of product definition specifications referenced in PO requirements.

It is the responsibility of the Seller to obtain copies of non-RMS documents referenced herein.

RMS DOCUMENTS:

Document	Title
QATI 3091	Inspect Sequence for External and Internal Screw Threads
QATI 3157	Standard Measuring Methods
QATI 3206	Linear Expansion of Metals
SS3995	Shipping and Protective Closures
SS7777	Sikorsky Aircraft Material and Process Specification Index
SS8813	Nondestructive Inspection
SS9070	Serial Numbering and Trademark Identification of Details, Assemblies, and Equipment
SS9208	Product Definition Design Criteria
SS9209	Drawing Interpretation Manual
SS9211	Flight Safety Parts Source Approval, Quality and Test Requirements

RMS FORMS REFERENCED IN THIS DOCUMENT:

Form	Title
SA1919	Notification of Potential Escape (NOPE)
SA6099	Supplier ICL Review Submittal Checklist
SA6264	Reduced Dimension Definition/Model-Based Definition Questionnaire
SA6411	Designated Quality Representative (DQR) Candidate Form
SA8259	Source Inspection Label (Red Decal)
SA1266	Qualification Source/Approval Request Form

6.0 REVISION HISTORY

Date	Page	Summary of Changes
12/3/2020	ALL	Initial Release
3/23/2022	ALL	2022 Release includes clarification throughout document
10/12/2022	ALL	Updated hyperlinks
5/1/2023	ALL	Major revision combining with SSQR-01
12/7/2025	ALL	Updated with common 1LM language, enhance document organization and clarity, added iSeries references, updated with latest specification requirements

Appendix A - SIKORSKY Designated Quality Representative (DQR) Operating Procedure

Policy It Is the Policy of Sikorsky Aircraft to utilize the Authorization to Release Process (ATR) for Sikorsky suppliers to inspect, accept and deliver product on behalf of Sikorsky Aircraft. This applies to all purchase orders.

Documents Sikorsky Aircraft Approved Source List for Special Processes and Laboratories
SS 7777, Material and Process Specifications Index
SAE AS9102 Aerospace First Article Inspection Requirement

Forms SA8259, Source Inspection Label (Red Decal)
SA6411, Delegated Quality Representative (DQR) Candidate Form
SA1919, Notification of Potential Escape (NOPE)
SA6412, Letter of Agreement - Authorized to Release Program
SA5193, Receiving/Source Inspection Critical Characteristics Checklist
SA0342-15, Nonconforming Material Rejection Report

Definitions

Term	Definition
Classification of Characteristics List (CCL)	Classification of Characteristics List. Listing of Sikorsky required inspection requirements by part number, commodity or family. May include graphics if available
Contract Quality Assurance Representative (CQR)	Sub-Contract Employee trained, certified, and managed by the prime contractor. This representative has final release authority and can be delegated additional oversight responsibility.
Designated Independent Verification Representative (DIVR)	A third-party quality assurance individual authorized to perform inspections or other verification duties under the direction of an SQA Representative and paid for by the supplier. DIVRs do not have product acceptance or release authority. Suppliers utilize DIVRs when authorized or necessary to perform specific over–inspection activities. The DIVR must be independent of the supplier's organization.
Designated Quality Representative (DQR)	Supplier Employee trained and certified by the prime contractor. This representative has specified release authority and can be delegated additional oversight responsibility.
First Article Inspection (FAI) Validation	A planned, complete, independent, and documented inspection and verification process to ensure that prescribed production processes have produced an item conforming to engineering requirements. (Ref. AS9102)
Inspection Check List (ICL)	Supplier control documents that include, as a minimum, all drawing characteristics to be inspected (including those notes that affect these characteristics), inspection equipment to be utilized, and an area for recording the inspection results.
Lot	The quantity of parts presented to Sikorsky for acceptance at any one time by a Supplier.

Supplier Quality Assurance (SQA) Representative	A Sikorsky Supplier Quality Assurance representative who visits a Supplier to perform source inspection on an infrequent basis. Has final acceptance authority for deliverable product and primary cognizance over suppliers and Designated Supplier Representatives (DQR) assigned to them.
Supplier Quality Manager (SQM)	Management or designee assigned the responsibility for administering the Source Inspection processes.
Sikorsky Supplier Quality System (iSeries)	Sikorsky Web Based Quality System.

1. QUALIFYING SUPPLIERS

1.1. Supplier DQR Program Entry Requirements

- Potential new suppliers and reactivated suppliers must be compliant to Procure-2-011 per Sikorsky requirements
- Select qualified employees from the quality department considered competent to perform the required duties of a DQR. Individual must not be in a position of management or executive leadership, unless prior permission is granted. Sufficient DQR's will be determined based on business needs (production volume, overall company size, etc.).
- Total Quality Operators (TQOs) are manufacturing employees who are trained in their company's Quality standards and procedural inspection methods, qualifying them to not just manufacture, but also provide inspection on behalf of the supplier's Quality department. TQO's are not allowed to be a DQR
- If DQRs work at a location that provides multiple commodities. The DQR should only be working the commodities that he/she is trained in.
- The DQR will be set up per the vendor code where he/she is physically located. Virtual acceptance is not permitted by Sikorsky. The DQR must physically be at the location of the part being inspected.

  Note: Exceptions to this may apply for reasons such as multiple vendor codes within reasonable distance or administrative addresses with separate manufacturing facilities. For these cases this shall be identified upon DQR enrollment.
- Complete, sign, and submit a Letter of Agreement (LOA) (SA6412) to SQA-Supplier Quality Management (SQM) for approval.
- Submit a completed SA6411 DQR Candidate Application Form to SQA-Supplier Quality Management (SQM) for approval.
- Maintain, at a minimum, two DQRs at all times.
  - Note: Additional DQR candidates should be considered for reasons such as plant location and shift coverage. Upon the loss of one DQR, the supplier shall qualify a second DQR within a three–month period. Unique Situations Exceptions must be approved by Sikorsky management.
- Failure to qualify a second DQR within the three-month window may result in a direct negative impact to the overall supplier quality score. Buyer reserves the right to charge back source inspection costs incurred due to lack of DQRs.

1.2. DQR Candidate requirements

- Minimum of (1) one year as an inspector in a related industry
- Part of the Supplier's Quality Organization
- Completed Eye Test per Procure-2-011 Requirements
- Knowledge of all relevant technical and quality requirements, demonstrate proficiency with inspection tools and techniques, and have effective writing, communication, and documentation skills
- Complete Sikorsky DQR training
- Approved by Sikorsky SQM prior to assuming their duties
- Attend refresher training every 3 years (minimum)

Note: Failure to meet any of the above requirements may result in buyer revoking DQR privileges for SAC hardware.

1.3. Maintaining DQR Approval

- DQRs must attend refresher training every 3 years (minimum)
- Sikorsky may revoke acceptance delegation authorization, requiring the supplier to contact CQR or Sikorsky SQM for acceptance actions.
- Increase surveillance or inspections at supplier's facility
- Report capability limitations or risks that may affect quality to the applicable Sikorsky Supplier Quality Manager(s)
- Notify the Sikorsky DQR Help Desk at dqrhelp.gr-sac@lmco.com within three (3) business days when an approved individual is either transferred from quality department activities or has left the supplier's employ.
- If DQR is in transition to new role and Seller does not have appropriate DQR staffing, Seller must select a new DQR candidate to be enrolled in DQR training. DQR must be on a DQR training roster prior to submitting a DQR tasking launch request for source inspection. The decision to grant DQR tasking remains with Sikorsky SQA.

1.4 Suspension from the Program shall be automatic if:

- No current P.O. requirements.
- There are no approved DQR's available to operate the program.
- Actions taken by the supplier or DQR are detrimental to the best interest of Sikorsky.

1.5. DQR General Responsibilities

- DQR's shall notify Sikorsky in writing of significant quality system changes or degradation of quality within twenty–four business hours
- DQR's perform product inspection at the supplier's facility (source inspection) as a delegate of Sikorsky's quality organization
  - Understand requirements and initiate inspection order(s) per section 2.0
  - Documentation Inspection per section 3.0
  - First Article Inspection per section 4.0
  - Material Inspection per section 5.0
- DQR's do not have final release authority on Flight Safety Characteristics
- Act in the best interest of Sikorsky

2. Understanding Requirements and Initiating Inspection Order

Using the Sikorsky Supplier Quality System (iSeries) review the PO printable report to ensure all requirements are understood. Then, generate Inspection Orders (IOs) these available line items will be displayed in the iSeries Dispatch list.

3. Document Inspection

3.1. The DQR shall verify the following: (Note: Electronic media as authorized by Sikorsky SQM may be utilized.)

- Supplements
- Engineering drawings with all changes (E.O.'s, RTE's)
- Sikorsky Aircraft Operation Sheets
- Specifications and Standards
- Approved Source List for Special Processes and Laboratories
- Standard Parts List
- Objective evidence of Sikorsky approval of supplier's Acceptance Test Procedure (ATP)
- SS 7777, Material and Processing Index
- Original certifications (Digital or Certified Copy are acceptable formats) for all processes conducted by Sikorsky approved sources
- SA 5193 Form - Receiving/Source Inspection Critical Characteristics Checklist {Note: Sikorsky approved Critical Characteristic inspector requirement} DQR cannot accept Flight safety parts program Critical Characteristics unless he /she is a FSPP certified category inspector
- First Article Checklist per AS 9102 Form 1-3 (When required by P.O./ iSeries)
- Coordinate Measuring Machine Programs/ Readouts
- Sikorsky Reduced Dimension Drawing approval letters
- Review ALL documentation to assure revision levels meet PO requirements
- Quantity of product shipped is per the purchase order, iSeries and shipping documents
- Authorized MRB parts are properly processed and annotated on shipping documents when required
- Packing Slip/iSeries Shipping Authorization is accurate and complete
- When Government Contract Quality Assurance/Government Source Inspection is invoked on the Purchase Order:

  o Ensure Government Representative final acceptance is properly documented and applied to the appropriate shipping documentation as required

3.2. Utilize the other documentation listed below to assure all requirements are addressed:

- Supplier Inspection Check List for both detail parts and assemblies
- Material certification identifying chemical, mechanical and physical properties for raw material
- Sikorsky test plans for raw material
- Form SA 342-15 Nonconforming Material Rejection Report (NMRR)
- Acceptance and Test Procedures
- Kit List
- Correct Quantity of Part (As required by purchase order)
- Review Alerts/Bulletins received from SQM's office via iSeries system and Sikorsky Portal to determine if any additional instructions are required prior to performing inspection
- Review the inspection documentation and process certifications to assure specifications and revision levels are in accordance with PO requirements
- Prior to conducting any material inspections, verify that all inspection instruments to be used during the inspection are calibrated and have a calibration due date sticker attached

3.3. ***When*** the documentation is non-compliant, ***then*** complete the following:

- Document discrepancies on a iSeries DR

- Use the iSeries DR to document and dialogue the non-conformance to the Supplier's Quality Manager. Initiate required Root Cause/Corrective Action Plan

3.4 CQR Right of Access

The seller is required to grant or arrange access for the CQR, to all facilities and provide access to a computer where work related to this contract is being performed or is scheduled to be performed. CQR must access iSeries from seller's computer in order to release product.

4. First Article Inspection (FAI)

FAI requirements are indicated on the PO by a note stating, "First Article Inspection Required" or as indicated within iSeries at the PO Line Item. Note, within iSeries FAI is referenced as PPV (Production Process Verification).

Note: It is the responsibility of the supplier's inspection department to complete 100% of the first article inspection prior to submitting the FAIR to a DQR. All characteristics as defined by iSeries must be recorded on the FAI SAE AS9102 and actual inspection results must be recorded with an inspection stamp or signature/initial next to each feature on form 3 to show acceptance. Upon completion and acceptance of the FAI the inspector / QE performing the FAI will sign on the applicable block #22 of the SAE AS9102.

Note: The supplier's inspector / QE performing the FAI may not be the same person as the DQR reviewing the FAI. The intent is for the suppliers internal QMS to perform the actual FAI and then submit an accepted FAI to the DQR for review, acceptance and submittal to CQR/SQAR

When a requirement for FAI is noted on the PO or within iSeries, ***then*** the DQR will:

- Select the Supplier's First Article specimen from the first lot of parts produced
- Validate the FAI has been completed and accepted by the supplier's internal quality system
- Perform a desktop review of all documentation
  a. Review the inspection checklist or the iSeries FAI Report to validate 100% of the drawing characteristics, notes and dimensions have been recorded and inspected with actual values noted on the FAI Report.
  b. Review all certifications to ensure the specifications are in accordance with the engineering drawing and are the correct revisions per the M&P index identified on the PO
  c. Ensure Review special process sources to ensure they are on the Sikorsky Approved Source List (ASL)
  d. Sign and date each certificate to indicate acceptance
  e. Sign and date the AS9102 Form 1 "Reviewed By" block to show acceptance.

NOTE: DQR'S Cannot perform final acceptance on FAI inspections

Note: Electronic media as authorized by Sikorsky may be utilized.

- Perform inspection of all CCL characteristics and sign/initial adjacent to each characteristic that was validated

- Where a hidden characteristic exists on a non-flight safety part, verify that it was inspected and documented on the inspection checklist only unless otherwise specified by PO/iSeries

- Verify by process certification (when supplier does not have capability) that process requirements and NDI techniques are properly performed in accordance with PO/iSeries requirements

- In the case of similar parts (such as -105 same as -103 except as shown), only the differing characteristics and dimensions are inspected, provided that the Supplier/part number first article for the similar part has been accepted

- Verify all Engineering Drawing/Blueprint and Purchase Order requirements are addressed

- Verify FAI data per the requirements of SAE AS9102

- Ensure the Certificate of Compliance (C of C) and/ or Verification Checklist contains a statement indicating the FAIR was performed, verified, and on file

- ***When*** FAI is acceptable, upload the customer approved FAI, part marking, serial number, and UID (when applicable) to the iSeries, then continue subsequent inspection(s) by selecting the appropriate sample in accordance with dictated Sikorsky/iSeries requirements for the remainder of the first lot of parts as described in Section 5

- ***When*** FAI is found to be non-compliant, then complete the existing/initiate a DR within iSeries

- Document the results of these inspections in accordance with AS9102

- For Source Control Manufactured parts, only drawing notes associated with envelope dimensions and finishes are required to be verified by DQR inspection. All other notes (i.e.; SES qualification requirements) are not required to be DQR inspected

- For expanded definition source control product, all certifications must be validated to the ASL and M&P index. ASL must be confirmed in iSeries.

After validation of the FAI, the DQR must request a CQR, SQA Representative to visit your facility to perform "Final FAI inspection" if the FAI or DFAI impacts form, fit, function, or is the initial FAI for the detail / assembly / installation.

4.1 Reduced Dimension Drawings

When inspecting to a reduced dimension drawing, the following applies:

- Verify supplier has approval letter from Sikorsky Supplier Quality. Reference: Section 8 Appendix B
- Verify Sikorsky Engineering Drawing revision letter on Purchase Order and ICL matches approval letter

- Verify CMM Program revision, time and date match what is on letter
- Ensure that CMM Printout does not show "out of tolerance" conditions
- Validate actual part characteristics not inspected by the CMM or by MOI tooling are in accordance with the approved ICL
    - If approval letter references a supplier dimensioned drawing, supplier must supply drawing to the DQR. The DQR shall follow standard FAI dimensional inspection and verify five (5) random drawing features

5. Material Inspection

5.1. Select the required samples to be inspected in accordance with Sikorsky/iSeries dictated requirements

Note: When inspecting to a reduced dimension drawing, ***then*** verify supplier is inspecting to all Sikorsky drive to points at a minimum, including all hard callout dimensions on the field of drawing. If the drawing does not contain drive to points; FAI requirements for reduced dimension drawings are dictated by Paragraph 4.1

5.2. Visual Inspection

- Perform 100% visual inspection on the shipment to the applicable Sikorsky drawing requirements
- Ensure part markings, UID, & serial number (as applicable) is in accordance with the applicable Sikorsky drawing requirements
- Verify parts are free from nicks, dents or scratches exceeding Sikorsky drawing requirements

5.3. ***When*** all of the above requirements are satisfied, ***then*** record the material acceptance in the iSeries Database:

5.4. Sign and date the Supplier's inspection checklist and the original, digital, certified copy of special process certifications and material certifications (note: originals of material certifications not required)**.**

5.5. For Flight Safety Parts Contact your SQAR or CQR for Final Buyoff

6. Rejected Material

When material is found non-compliant, the supplier shall follow their internal processes for identification, control, and documentation of nonconforming material.

- For all defects found by the DQR: Document the discrepancy on an iSeries DR form
    - **Rework:** when the defect can be restored to drawing compliance via rework, the supplier's internal process for control and documentation shall be followed. Identify the rework disposition on the DR form.
    - **Repair/Use as is**: Follow Sikorsky MRB process to obtain approval for repair or use-as-is disposition

- Complete part re-inspection at completion of all necessary rework/repair
- Clear all inspections requirements in iSeries

7. Material Release

7.1. ***When*** inspection requirements are complete, inspected quantity is exact quantity to be shipped (if quantity does not equal shipping quantity, see step 7.2) and parts do not require over-inspection, ***then*** authorize material for shipment as follows:

- Ensure all IO requirements including FAI, Sikorsky Inspection, - Audit or Over inspect if applicable are complete. iSeries will auto-generate an authorization to ship (ATS) number for the total Quantity inspected
- Ensure packaging and preservation is in accordance with Procure-2-011 and additional Sikorsky requirements, if applicable

7.2. Complete Inspection (ATS)

When the material is accepted at the Supplier's facility ***then*** ATS (Authorization to Ship) number must be included on bar code/packing slip by SDS (Supplier Delivery System) or supplier

7.3. Incomplete Inspection (Red Decal)

1. ***When*** parts are to be released from Supplier – incomplete of the PO requirements – and operations are to be completed at Sikorsky, Suppliers are required to contact their respective buyer to submit an authorization workflow. Before creating an Inspection Order (IO) in iSeries, a workflow authorization number from Sikorsky must be provided prior to starting the IO.
2. The DQR shall complete all steps within the IO up to step 100. At step 100, **after completing all inspection items but not the step itself**, the Supplier shall request a lien authorization per the iSeries training slides on the Sikorsky Supplier Portal, Quality tab. Enter the authorization workflow number and reason for the Red Decal IO in the request reason field.
3. Sikorsky will process the IO through the Red Decal process and send the Supplier an email with the IO number, Red Decal Authorization (RDA) number, and an Authorization to Ship (ATS) number.
4. Place an (SA 8259) red decal on the Supplier's packing slip
5. Place signature on the line after "By"
6. Record date on the label.
7. Record the (RDA) authorization number
8. Indicate the name of the person to be contacted at Sikorsky
9. List actions to be completed at Sikorsky
10. Release Parts as authorized by iSeries Authorization to ship process

7.4. Splitting work order lots:

If the shipping quantity is less than the entire inspected quantity**,** place all remaining parts from the IO in a "bonded stock room" identified and segregated by part number

7.4.1. Storage of iSeries/IO generated parts that are not authorized to ship.

- The Supplier shall maintain a log which accounts for all original PO Contact Requirements including:
  - Current PO Contract Requirement which is being shipped against
  - Drawing Revision
  - Part List Revision
  - Operation Sheet Revisions
  - E.O., RTE, etc.
  - Special age sensitive requirements – Shelf Life, Cure Dates

- Special Part Specific Requirement per the Sikorsky B/P – Packaging, Preservation
- ESD Controls on Avionics Parts

7.4.2. Upon removal of the parts from the "bonded stock room" the Designated Supplier Representative (DQR) must validate the following:

- Part Meets Current PO Contract Requirement, which is being shipped against
  - Drawing Revision
  - Part List Revision
  - Operation Sheet Revisions
  - EO, RTE

7.4.3. Additionally, the Designated Supplier Representative (DQR) must perform a visual inspection for the following:

- Absence of Corrosion /Damage
- Part Number
- Serial number-SS9070
- Quantity Shipped
- FOD check {Product and Documentation}

7.4.4. When all P.O./iSeries Requirements have been validated and visual inspection is performed, return to release process defined in step 7.1. Repeat this entire process until all Sikorsky parts requirements are satisfied.

8. Audit Inspect (Over-Inspection)

iSeries will indicate requirements for Sikorsky Over Inspection Audits on some shipments. iSeries will select appropriate audit criteria based on supplier performance.

The CQR or SQAR perform these audits prior to release of the shipment. Contact designated CQR via Launch process or SQAR as required.

9. Section Removed

10. Defective Parts Per Million (DPPM) Management)

Defective Parts Per Million (DPPM) Management

10.1. When supplier's three (3)-month moving average exceeds 3,000 DPPM, the supplier will, based on Supplier Quality Assurance (SQA) Representative request (such as issuing a SCAR), provide root cause and corrective action plan(s), addressing quality system failures to the SQA Representative.

Note: *Root cause analysis should include actions such as targeted or focused audits, Process Integrity Reviews and the use of tools such as Fishbone Diagrams, the 5 Whys, QCPC, and/or other RCCA Tools or equivalent.*

10.2. Results of Root Cause and corrective action plans will be reviewed by the SQA Representative for demonstrated improvements over a three (3)-month probationary period.

Demonstrated improvements are:

1. DPPM is below the required minimum
2. DPPM in the third month is lower than the three (3)–month rolling average

Note: *If no improvement is demonstrated within the probationary period, third party over inspection (Designated Independent Verification Representative –DIVR) may be imposed by Sikorsky on the supplier. The supplier absorbs all costs and makes all necessary arrangements to employ a LMCO – Sikorsky approved third party inspector (DIVR).*

10.3. The supplier shall be allowed to release product after DIVR inspection has been completed per the plan, and SQA Representative authorizes such release.

11. Supplier Performance

11.1. Supplier Evaluation

- LMCO-Sikorsky Report Card is an established method for determining supplier performance and consists of the following elements:
  (a) Defective Parts Per Million
  (b) Escapes
  (c) On-Time Delivery
  (d) SCARs

11.2. DQR Evaluation

- DQR performance will be evaluated by designated SQA Representative

11.3. Periodic Audits

- Audits of the DQR to review the implementation, compliance, and effectiveness of the Authorized to Release (ATR) Program will be conducted at the discretion of the SQM/ SQA Representative based on supplier performance.

Appendix B - SIKORSKY Reduced Dimension Drawing and Model Based Definition First Article Inspection

Applicability: The following process applies when Sikorsky drawings contain a note referencing CATIA that requires suppliers to query a model for dimensions to manufacture and/or inspect the part. Sikorsky Source Inspection Message 27 will be on the purchase order line item in these cases.

Overview

A **Reduced Dimension Drawing Package** includes an Engineering Drawing, 3D Part Model, and Parts List.

A **Model Based Definition Package** includes a 3D Part Model, Parts List, and Data Sheet.

RDD & MBD parts require querying a CATIA model for part dimensions and features. Other dimensions, notes, raw materials, and special processes are on the part drawing, parts list, data sheets, etc.

Suppliers must have Sikorsky Supplier Quality approval to manufacture RDD or MBD parts. Suppliers must complete a capability questionnaire (SA6264) and must meet Sikorsky minimum requirements.

All RDD and MBD parts require Sikorsky-approved Inspection Plans prior to the part inspection for FAI. Approval is indicated by a part number/revision-specific approval letter from Sikorsky Supplier Quality. **Approval letters are required for each part presented to Sikorsky Source Inspection for FAI. Suppliers approved by Sikorsky Supplier Quality for "Self-Release" of Inspection Plans will create their own part number specific approval letters**.

Suppliers must submit Inspection Plan documents for approval on each RDD/MBD part. Sikorsky Supplier Quality requires the Inspection Plan submission in advance of the First Article Inspection, and within thirty (30) days prior to scheduled delivery.

The approved Inspection Plan is used to perform and document the results of the First Article Inspection and recurring inspections on subsequently manufactured parts. Inspection Plan documents become part of the supplier's approved and controlled manufacturing/inspection plan for the part.

Suppliers holding a SAC purchase order (Primary Supplier) who wish to utilize a sub-tier supplier for complete manufacture of parts must ensure that the sub-tier supplier is capable to meet the requirements of RDD/MBD parts. It is the primary supplier's responsibility to flow the requirements of this document to the sub-tier and to ensure the content and accuracy of the Inspection Plan documentation. A primary supplier may utilize the sub-tier supplier's approved inspection plan documents and must include an additional AS9102 Form 1 filled out by the primary supplier. Fields 11 & 12 on the additional AS9102 Form 1 must list the primary supplier's assigned supplier code and the SAC purchase order number. A sub-tier supplier must not submit their Inspection Plans directly to Sikorsky Supplier Quality.

1. Required Inspection Plan Documentation

Suppliers must submit the following documentation to Sikorsky Aircraft Supplier Quality for review and approval.

a. **Inspection Check List** (ICL) in AS9102 format covering 100% of applicable drawing/model features.
b. **Validation Points in XYZ format**, in a vertical list in an Excel spreadsheet or equivalent importable electronic format. This is required for all parts using a digital inspection method; CMM, Inspection arm, scanner, laser

tracker, etc. This file consists of the actual programmed points that will be used to inspect the part or points that represent the intended inspection points per the Digital Inspection Plan. These points must be on the surface of the model or define the center point of a hole.

c. **Bubbled Drawing and/or Model.** These sheets are to show each part feature, dimension and tolerance bubbled with unique characteristic numbers that match those on AS9102 form 3.
d. **Digital Inspection Setup Sheet** for each setup required for part inspection. See Figure 5.
e. **Digital Inspection Program (or Digital Inspection Plan)** that will be used to inspect the part.
f. **SAC Approved NDT Technique Sheet or Other Special Process Schedule/Procedure** when applicable.
g. **Supplier Tech Help with response** when applicable.
h. **Supplier ICL Review Checklist** (SA6099).

Documentation Requirements:

- All documentation must reference the Sikorsky part number and revision level.
- All images must be clear and legible.
- All documentation must be submitted electronically. Handwritten documentation not acceptable.

2. Document Header

All documents, except for the AS9102 forms, the NDT Technique Sheets/Process Schedules, Supplier Tech Help, and SA6099, are to have the following "Standard Document Header" on the first page in the format shown:

- Document Type: Examples of appropriate entries for "Document Type" are: CMM Program, CMM Setup Sheet, Validation Points, and Bubbled Drawing
- Supplier:
- Prepared by:
- **Date prepared:
- **Time prepared:
- Sikorsky part no.:
- Sikorsky dwg rev level:
- Sikorsky model part geometry. Include the model number and revision level
- Digital Inspection file size: (as applicable)

**The "Date prepared" and "Time prepared" must be updated with any changes to the document (They will be used for document approval). They are a revision control to ensure the program reviewed and approved is the program used for the production inspection

3. Document Requirements

3.1 Inspection Check List (ICL)

Must be in AS9102 format and include the following:

a. 100% of drawing characteristics including materials, processing, notes, dimensions, identification, edge breaks, etc. List the complete feature requirements, tolerance, and/or acceptance criteria.
b. **AS9102 Form 1** input instructions:
    a. **RDD parts**: Fields 5 & 7 - revision letter of the drawing. Field 6 - drawing number.
    b. **MBD parts**: Field 5 - part revision letter from the model. Field 6 - "N/A". Field 7 - both the Data Sheet revision and the Model revision, which are not always the same.
    c. **RDD and MBD parts**: Field 11 - supplier code. Field 12 - purchase order number. Fields 15 and 16 - detail parts with SAC assigned part numbers (including castings and forgings used for a machined part) and industry standard (COTS) parts.

c. **AS9102 Form 2** input instructions: Column 5 - raw materials & special processes; Column 6 - specification(s) that apply per the drawing/model with type, class, method, etc.; Column 7 - special process code found in the ASL section 1, appendix A for the process category and specifications listed.
d. **AS9102 Form 3** input instructions: Column 10 - MOI tool number for characteristics accepted using MOI tooling.
    a. Column 12 - divide into three columns (12a, 12b, & 12c) for: FAI Inspection measuring equipment, Recurring Inspection measuring equipment, Inspector Stamp/Signature. Columns 12a & 12b - list the inspection equipment used.

3.2 Validation Points

The Validation Point File is a listing of nominal points on the model used for digital inspection methods (CMM, Inspection arm, scanner, laser tracker, etc.) This file consists of the actual programmed points used to inspect the part. Points must be on the surface of the model or define the center point of a hole. RMS SQA reviews validation points for deviations from the model (See Figure 1). The following is required for the Validation Point File:

a. Standard Document Header" defined in paragraph 2.0.
b. Electronic format spreadsheet (Excel or similar) with X, Y, and Z coordinates for each point. The X coordinates will be in the first column, the Y in the second, and the Z in the third (See Figures 2 & 3).
c. Drive-to points on the drawing or model. The drive-to points are the minimum requirements for recurring inspection of parts. Points must be accurate to four decimal places.

Validation points (including Drive-to points) on locating surfaces of parts where tooling would prevent their inspection need not be included. Example: Parts resting on the primary datum on a surface plate/CMM table with the secondary and tertiary datums against tooling to establish the datum planes. Surfaces covered by part holding/locating tooling need not have validation points. Datum surfaces must be flat within the profile tolerance for this exception to apply.

Figure 1 Example Validation Point Data

```
Document Type: Validation Points
Supplier:                  XYZABC Corp.
Prepared by:                     John Doe
Date prepared:                   10/04/2006
Time prepared:                   03:25 pm
Sikorsky part no:          99999-99999-999
Sikorsky dwg rev level:    J
Sikorsky model part geom:  99999-99999-999-01

File (010)
Axis  "Setup 1"
XYZ format
    X    Y          Z
-0.00114   9.21896     0.00000
-7.41613   1.06509    -0.00000
-3.74963   1.06434     0.00000
 3.09781   1.06373    -0.00000
 7.14144   1.06290    -0.00000
```

Figure 2 Sample of Validation Points in X, Y, Z Format

***Note:** Any revisions to these points after approval must be resubmitted*

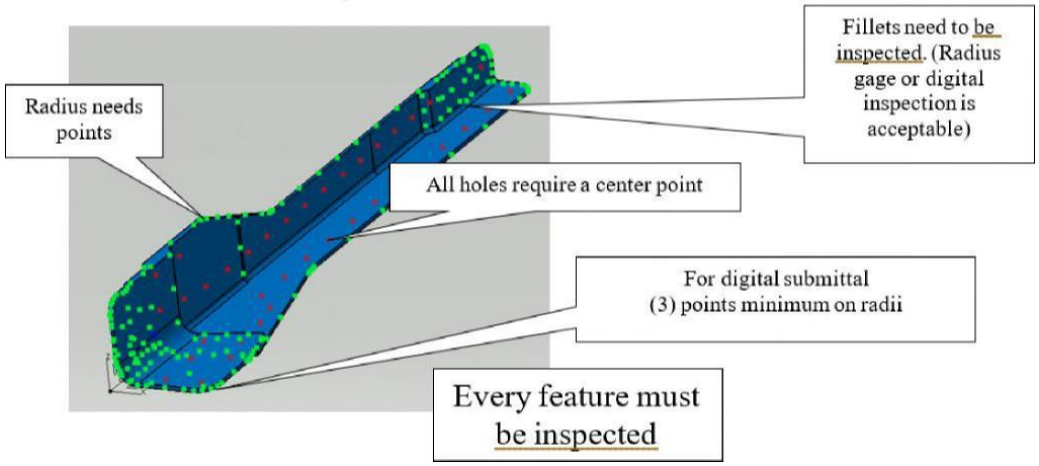


Figure 3 Sample of Validation Points Including Hole Diameters

***Note:** Any revisions to these points after approval must be resubmitted*

```
Document Type: Validation Points
Supplier:                  XYZABC Corp.
Prepared by:                    John Doe
Date prepared:                  10/04/2006
Time prepared:                  03:25 pm
Sikorsky part no:          99999-99999-999
Sikorsky dwg rev level:    J
Sikorsky model part geom:  99999-99999-999-01
```

Hole Diameters

```
File (020)
Axis  "Setup 1"
XYZIJK format

-0.00114   9.21896     0.00000   0.00000   0.00000   1.00000   0.09800
-7.41613   1.06509    -0.00000   0.00000   0.00000   1.00000   0.19100
-3.74963   1.06434     0.00000   0.00000   0.00000   1.00000   0.50000
```

3.3 Bubbled/Ballooned Drawing and/or Model.

A bubbled/ballooned drawing and/or part model consists of bubbled numbers for all part characteristics which correspond with Form 3 of AS9102 (See Figure 4). For part models, there should be a sheet for each of the CATIA™ captures in the model. For MBD parts, a bubbled data sheet is required in the same manner as the notes section of an RDD part. A Parts List (when applicable) should also be bubbled with specific requirements.

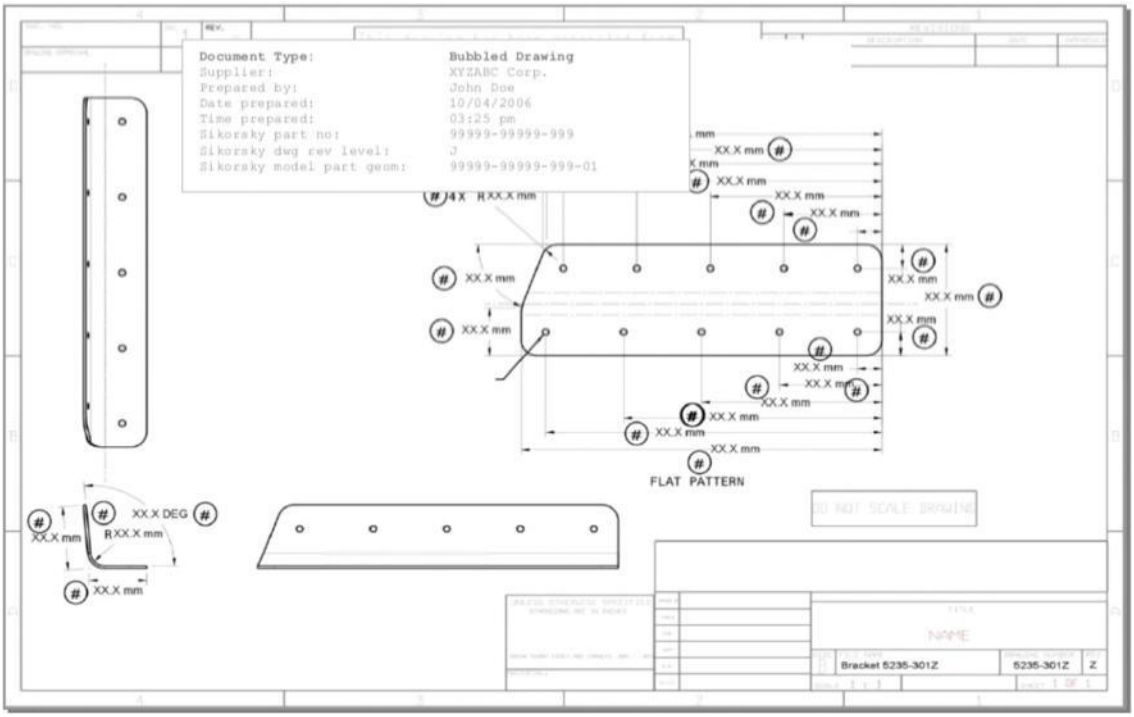


Figure 4 Bubbled Drawing

3.4 Digital Inspection Setup Sheet

The digital inspection setup sheet(s) (Figure 5) for Coordinate Measuring Machines (CMM's) or Portable Coordinate Measuring Machines (PCMM's - Inspection Arms, Laser Trackers/Scanners) is used by SAC SQA when merging Validation Points into CATIA™. It is also used by the Supplier's inspector when setting up the part for digital inspection. At a minimum each digital inspection setup sheet must contain the following information:

a. File will include the "Standard Document Header" defined in paragraph 2.
b. Sikorsky part datums (when defined) which must be used for inspection alignment.
c. A top and side view of the part depicting each setup on the CMM or PCMM showing the inspection axis and datums used. When a symmetrically opposite part exists, the correct part (not the opposite) must be shown on the setup sheet. Note: When a part requires multiple setups to inspect all features and surfaces, each setup must be shown. It is acceptable to show inspection fixtures or tooling and clamping locations as desired.

d. The inspection axis should be aligned with the Sikorsky datums from the drawing or model, the axis origin being at the intersection of the datum planes. The setup graphics must clearly show the part/model, datums, and axis system showing the positive X, Y, and Z axis directions.

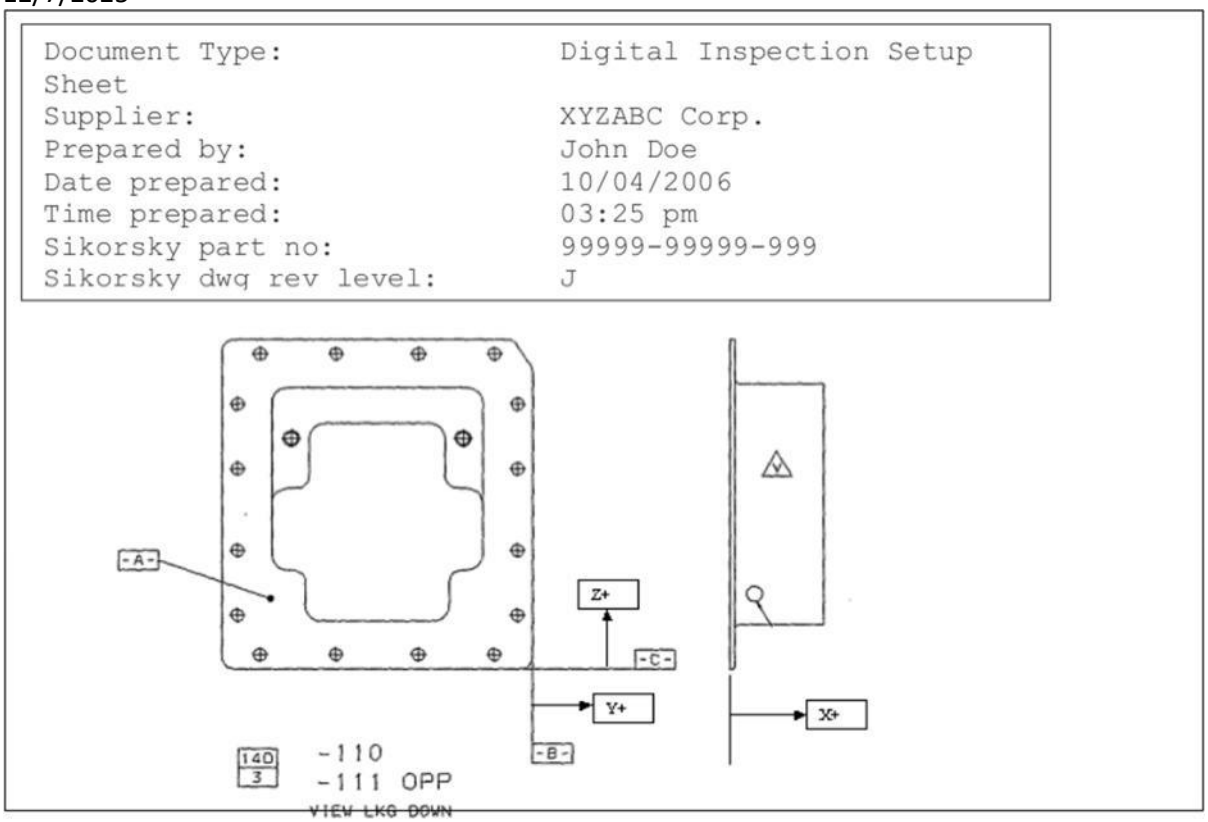


Figure 5 Digital Inspection Setup Sheet

3.5 Digital Inspection Program (or Digital Inspection Plan)

For CMM inspection or other automated inspection methods, include the program. For non-automated digital methods (Inspection arms, trackers, etc.), include the Digital Inspection Plan.

a. Inspection Program or Plan will include the "Standard Document Header" defined in paragraph 2.
b. A digital inspection program must include all points included in the Validation Point File. The program must include clear listings of part features being inspected and the tolerances used to determine acceptance. Where programming language or convention makes this difficult, comment lines in the program may be substituted. Example: A program comment line might read as follows: "Points 25 through 50 will inspect part profile of .030 to datums A, B, & C in accordance with drawing note 2." (See Figure 6)
   Note: The executed program must output the following:
   - "Standard FAI Document Header"
   - Program execution date and time
   - CMM Program Number and Revision level
   - Serial Number or "N/A" if none exists

   - Tolerances used for inspection
   - CMM data must be referenced to part datums described in the Sikorsky Engineering data (drawing or model)

c. A Digital Inspection Plan will include the method and sequence required to inspect the part. The plan will refer to the Set-up Sheet or may be included as part of the set-up sheet if desired. The plan will outline

the inspection instrument to be used, the sequence of part inspection, the number of points taken on each part surface, and the tolerance of the features being inspected with reference to the part datums. The plan must include the same number of points (minimum) as the Validation Point file.

Note: The digital inspection report must output the following:

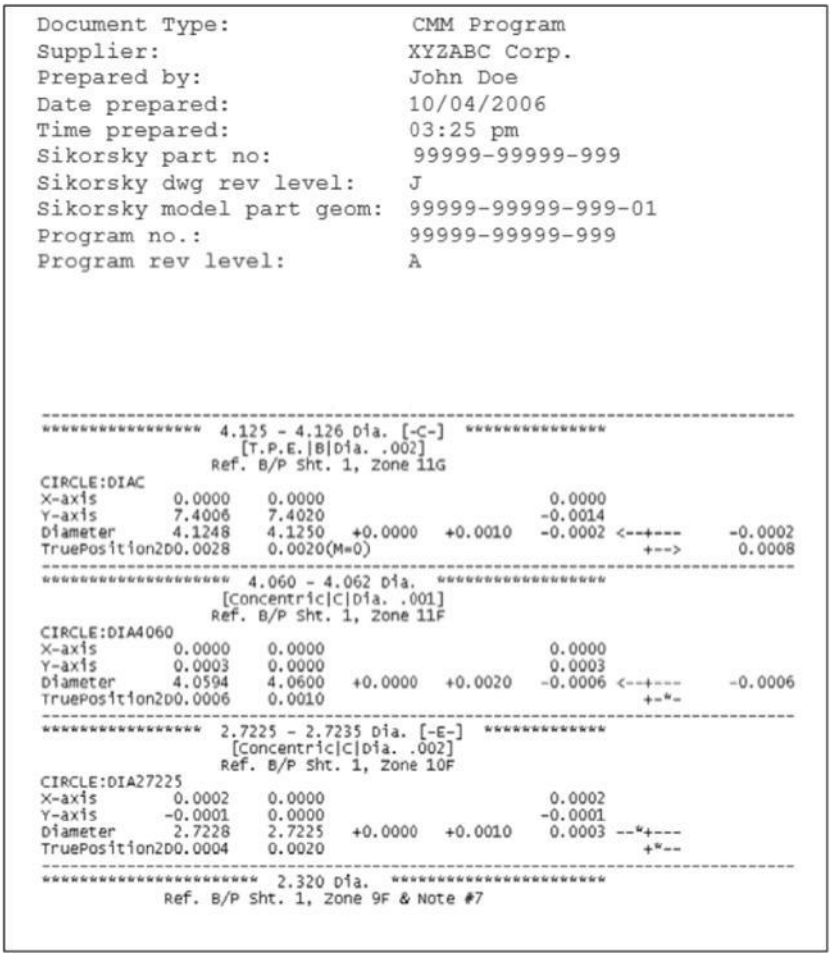
- "Standard FAI Document Header"
- Inspection date and time
- Inspection instrument: Model/Type & Serial Number
- Serial Number of "N/A" if none exists
- Tolerances used for inspection
- Digital output data must be referenced to part datums described in the Sikorsky Engineering data (drawing or model)

3.6 **Sikorsky (SAC) Approved NDT Technique Sheet or Other Special Process Schedule/Procedure (Only when required)**. Example: Class 1A and 1B parts as designated on the drawing or data sheet require SAC approved NDT Technique Sheets per SS8813. These Approved Technique sheets are to be included in the inspection plan submittal. Other Special Processes may also require SAC approval of the process schedule/procedure. When required these SAC approved process schedules/procedures shall also be submitted with the inspection plan.

3.7 **Supplier Tech Help with response (Only when one affecting the Inspection Plan has been submitted)**. A Tech Help may be used to clarify the drawing/model intent or to request a change to released engineering. When one exists that affects the Inspection Plan it shall be included in the Inspection Plan documents. A Tech Help response shall not be considered a drawing change and shall not be used to accept non-conforming product.

3.8 **Supplier ICL Review Checklist** (SA6099). Form SA6099 is provided by SAC to their suppliers to assist them in ensuring all requirements for RDD/MBD parts have been acceptably completed. This form shall be used and submitted with each Inspection Plan created to ensure all requirements have been acceptably completed.

Figure 6 Sample of CMM Program including Hole Diameters



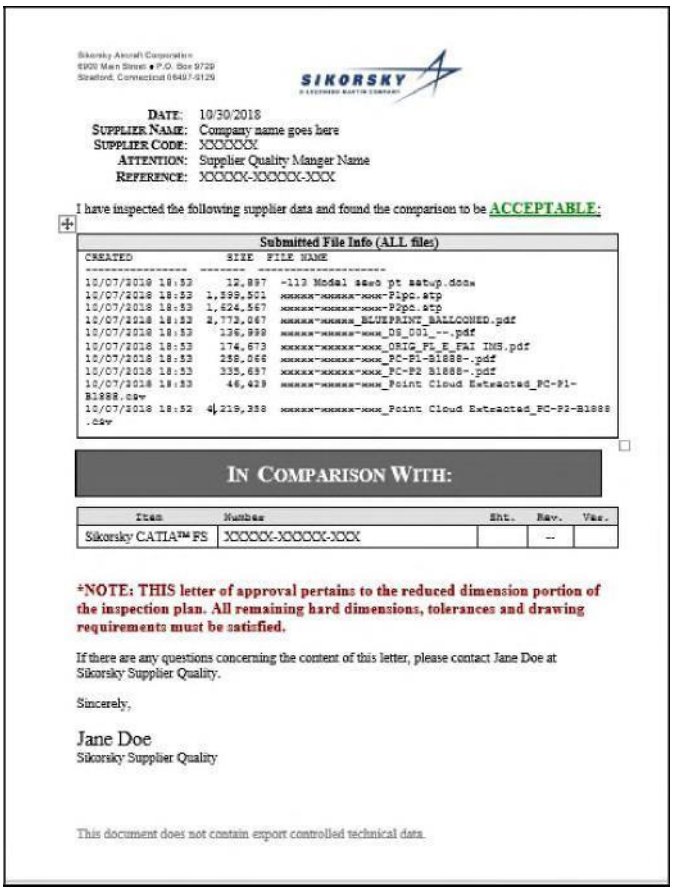
```
Document Type:              CMM Program
Supplier:                   XYZABC Corp.
Prepared by:                John Doe
Date prepared:              10/04/2006
Time prepared:              03:25 pm
Sikorsky part no:           99999-99999-999
Sikorsky dwg rev level:     J
Sikorsky model part geom:   99999-99999-999-01
Program no.:                99999-99999-999
Program rev level:          A

-------------------------------------------------------------------------------
****************** 4.125 - 4.126 Dia. [-C-]  ****************
                    [T.P.E.|B|Dia. .002]
                  Ref. B/P Sht. 1, Zone 11G
CIRCLE:DIAC
X-axis          0.0000    0.0000                        0.0000
Y-axis          7.4006    7.4020                       -0.0014
Diameter        4.1248    4.1250   +0.0000   +0.0010   -0.0002 <--+---      -0.0002
TruePosition2D0.0028      0.0020(M=0)                          +-->       0.0008
-------------------------------------------------------------------------------
******************** 4.060 - 4.062 Dia.  ********************
                   [Concentric|C|Dia. .001]
                  Ref. B/P Sht. 1, Zone 11F
CIRCLE:DIA4060
X-axis          0.0000    0.0000                        0.0000
Y-axis          0.0003    0.0000                        0.0003
Diameter        4.0594    4.0600   +0.0000   +0.0020   -0.0006 <--+---      -0.0006
TruePosition2D0.0006      0.0010                               +-*-
-------------------------------------------------------------------------------
****************** 2.7225 - 2.7235 Dia. [-E-]  **************
                    [Concentric|C|Dia. .002]
                  Ref. B/P Sht. 1, Zone 10F
CIRCLE:DIA27225
X-axis          0.0002    0.0000                        0.0002
Y-axis         -0.0001    0.0000                       -0.0001
Diameter        2.7228    2.7225   +0.0000   +0.0010    0.0003 --*+---
TruePosition2D0.0004      0.0020                               +*--
-------------------------------------------------------------------------------
************************ 2.320 Dia.  ************************
            Ref. B/P Sht. 1, Zone 9F & Note #7
```

4. Approval Letter

An approval letter (Figure 7) will be issued to the Suppliers from SAC Supplier Quality to indicate acceptance of data submittal. This letter will reference the following:

- Sikorsky part number
- Engineering drawing revision
- All relevant supplier inspection documentation

Figure 7 Supplier Part Approval Letter



Sikorsky Aircraft Corporation
6900 Main Street ● P.O. Box 9729
Stratford, Connecticut 06497-9129

SIKORSKY

DATE: 10/30/2018
SUPPLIER NAME: Company name goes here
SUPPLIER CODE: XXXXXX
ATTENTION: Supplier Quality Manger Name
REFERENCE: XXXXX-XXXXX-XXX

I have inspected the following supplier data and found the comparison to be **ACCEPTABLE**:

Submitted File Info (ALL files)

CREATED	SIZE	FILE NAME
10/07/2018 18:52	12,897	-113 Modal asmb pt setup.dcma
10/07/2018 18:52	1,899,501	xxxxx-xxxxx-xxx-P1pc.stp
10/07/2018 18:53	1,824,567	xxxxx-xxxxx-xxx-P2pc.stp
10/07/2018 18:53	2,773,067	xxxxx-xxxxx_BLUEPRINT_BALLOONED.pdf
10/07/2018 18:53	136,898	xxxxx-xxxxx-xxx_DS_001_--.pdf
10/07/2018 18:53	174,673	xxxxx-xxxxx-xxx_ORIG_FL_E_FAI INS.pdf
10/07/2018 18:53	258,066	xxxxx-xxxxx-xxx_PC-P1-B1888-.pdf
10/07/2018 18:53	335,697	xxxxx-xxxxx-xxx_PC-P2 B1888-.pdf
10/07/2018 18:53	46,429	xxxxx-xxxxx-xxx_Point Cloud Extracted_PC-P1-B1888.csv
10/07/2018 18:52	4,219,358	xxxxx-xxxxx-xxx_Point Cloud Extracted_PC-P2-B1888.csv

IN COMPARISON WITH:

Item	Number	Sht.	Rev.	Var.
Sikorsky CATIA™ FS	XXXXX-XXXXX-XXX		--	

***NOTE: THIS letter of approval pertains to the reduced dimension portion of the inspection plan. All remaining hard dimensions, tolerances and drawing requirements must be satisfied.**

If there are any questions concerning the content of this letter, please contact Jane Doe at Sikorsky Supplier Quality.

Sincerely,

Jane Doe
Sikorsky Supplier Quality

This document does not contain export controlled technical data.

5. Recurring Inspection

This section applies only to Sikorsky Engineering Drawings that include “Drive To Points (DTP)”. If the drawing does not contain Sikorsky defined "Drive to Points" then continuation of existing approved inspection method is required, unless the supplier has an approved sampling plan per SSQR 20.1 guidelines.

Any dimensioned features, notes, and the "Drive to Points" contained within the Sikorsky Engineering Drawings, must be used for recurring inspection at a minimum. These points contained in the recurring inspection program must be contained in the approved first article inspection program and be on the surface of the model.

6. Reduced Dimension Requirements for MOI Tooling

MOI tooling can only qualify a feature of size (like profile, length, width, etc.) at first article and for recurring inspection. The use of MOI tooling does not excuse submittal of AS9102 forms 1, 2, and 3 to Sikorsky Supplier Quality for Reduced Dimension review and approval prior to source inspection.

On AS9102 form 3 note the characteristic inspected by the MOI tool in column 8 (requirement) then in column 10 (Designed Tooling) record the MOI tooling number. MOI Tooling numbers will either be Z type, T type). In column 14 note both FAI and Recurring inspection method – which would be "MOI tooling."

Refer to SA 7303 Tooling Bulletin for specific requirements as they pertain to usage, storage, accuracy and proper marking.

7. Flat Pattern Use

Parts that are manufactured using flat patterns will need to be verified with either a Sikorsky approved flat pattern or digital data that inspects the three-dimensional model. Do not submit a flat pattern to Supplier Quality unless there is an approved flat pattern defined by Sikorsky.

As technology advances new methods may be employed for inspection. If a supplier desires to employ a method that isn't covered in this document, the supplier must contact Sikorsky Supplier Quality. At a minimum, the supplier must provide objective evidence to demonstrate process capability and proof that 100% of the parts features have been inspected.

8. Requirements for Portable Coordinate Measuring Machine (PCMM) Use (Inspection Arm, Laser Tracker, Laser Scanner)

a. The stated accuracy of the measuring instrument used will not exceed 25% of the feature tolerance inspected unless authorized by Sikorsky Supplier Quality in writing.

   For example, a PCMM with an accuracy of ±-.001" will not be used to inspect a hole with a ± .001" tolerance as it consumes 100% of the part tolerance. If the tolerance is ± .001", then an inspection arm with a minimum accuracy of .0005" would be required.

b. If a supplier is to use a Portable Digital Inspection Instrument for validation of parts, they must submit a company procedure indicating the following:

   - People qualified to use digital measuring instruments.
   - Calibration procedure with time intervals

9. Composite Detail Parts and Assemblies

Manufacture of composite detail parts and assemblies shall be controlled by the contracted suppliers' internal procedures and guidelines. Composite detail parts and assemblies are defined as: Bonded Assemblies – co-cured core and composite plies; Monolithic Laminate – composite plies (no core). At a minimum, those procedures and guidelines shall define ply orientation, ply size, ply sequencing, and ply material. The procedures and guidelines shall be submitted to the SAC Supplier Quality Assurance department for approval.

Additionally, if the control of the manufacture of composite detail parts and assemblies consists of a Ply Layup Book, the Ply Layup Book shall be available and validated at the time the first part is manufactured.

10. Supplier Self Release Authorization

Suppliers may be authorized for conditional self-release and approval of their Reduced Dimension/MBD Inspection checklists and FAI plans**.** Supplier Quality Assurance may revoke the approval of this process and require the contracted supplier to submit each detail for approval as stated in this document. The intent of the following is to ensure that the supplier is aware that they are responsible for the accuracy and completeness of the data that is used to inspect their parts and those of sub-tier suppliers. The following requirements must be adhered to.

Self-Release Authority is only granted to suppliers who have demonstrated full understanding and compliance of Sikorsky Supplier Quality requirements. Suppliers with self-release authority are subject to periodic audit by Sikorsky Supplier Quality or their designated third-party agent. Conditional self-release requires that all FAI plans are in accord with the requirements expressed within this document. An initial audit of the supplier's process as well as ongoing audits will be performed by Supplier Quality to ensure compliance. The frequency of these audits will be in direct correlation to the quality of product delivered. Suppliers who are not compliant to these requirements will invalidate their self-release authority.

Self-Release requirements:

a. Employ a process that flows down all contractual Sikorsky requirements to their sub-tiers.

b. Ensures compliance to Sikorsky contractual requirements by their facilities and any sub-tiers in their supply chain engaged in Reduced Dimension/MBD work. Supplier is to ensure sub-tier is inspecting parts properly in accord with this document.

c. Document who is authoring FAI / ICL plans and training records that include objective evidence of proficiency.

d. Notify Sikorsky Supplier Quality in writing when changes in Management occur that may affect Self Release status. Notification must be done prior to or as soon as the changes become effective.

   - For example, if the Supplier is on self-release and has one DQR/QE/Quality manager who is solely responsible for writing all of the FAI/ICL's, and they are removed from their position; the Supplier will notify Sikorsky of the change in personnel and their current FAI/ICL status

e. Employ a process that ensures that their facility and sub-tiers can accurately read, manufacture, and inspect to the native Sikorsky engineering data. Validation will include an initial survey and data exchange. Suppliers will keep objective evidence on file to document their review of their capability and that of their sub-tiers.

f. If the supplier is utilizing sub-tiers for Reduced Dimension/MBD work, they will perform periodic audits of their sub-tiers to confirm sub-tier capability. Maximum of three (3)-year interval between audits. Any findings discovered will require root cause investigation and must implement robust corrective action to prevent reoccurrence.

g. Review, approve, and document their work and that of their sub-tiers for compliance to the requirements described in this document. Suppliers will keep objective evidence on file to document their review of their sub-tier capability.

c. Suppliers with self-release authority will issue a part number and revision specific approval letter. Suppliers with self-release authority will create an approval letter to verify acceptance of the sub-tiers data. The approval letter will be of similar format and content like the example shown in figure 7 with the exception of the company letterhead, which should be that of the supplier with self-release authority.

h. Supplier self-release authority is specific to the supplier code listed on the self-release authorization letter at that location only.

Self-release Process:

a. The supplier will document that they can meet the requirements for self-release as previously described. They are to create a **Reduced Dimension/MBD (Model Based Definition) control plan.**

b. The **Reduced Dimension/MBD control plan will be inclusive of the following:**

1. Process for flow down of Sikorsky contractual requirements.
2. Method and frequency of audit for their facility and that of their sub-tiers engaged in Reduced Dimension/MBD work to ensure compliance to Sikorsky contractual requirements.
3. The supplier's plan shall describe the method of flow-down of requirements to sub-tier suppliers.
4. Describe the process which will be utilized to assess sub-tier suppliers' digital data capability prior to sending a supplier a dataset.
5. Personnel, training records, and proficiency with respect to Reduced Dimension/MBD FAI/ICL planning. The procedure must identify the quality manager and at least one designee to approve sub-tiers data. These individuals are the only ones authorized to perform such approvals.
6. The supplier is responsible to manage training of personnel such that they are proficient in creating and approving ICL packages as described in this document . These personnel shall be from the supplier's Quality department. Proficiency shall be documented in a training matrix that is to include:
   - Approved Personnel listing.
   - Six months CATIA use or demonstrated applicable 3D graphics proficiency
   - Documented training of this document requirements
   - Objective evidence that the individual has demonstrated proficiency in creation of ICL packages. A minimum of three packages, for different commodity types, reviewed and approved by the Quality Manager or designee, is recommended.

   Additional training requirements:
   Suspension of an individual from the process - If an escape occurs on a part due to an incorrect AS9102 form or incorrect inspection data, the individual who created the ICL package will receive remedial training and management oversight until proficiency is reassured. It is the responsibility of the Quality manager to ensure personnel are creating robust, error-free ICL packages that include all requirements.

Individuals that are inconsistent with performance and accuracy shall not be permitted to create inspection plans.

The roster of approved individuals and training records must be kept up-to-date and may be audited by Sikorsky at any time.

7. Process to notify Sikorsky Supplier Quality in writing when changes occur to their Reduced Dimension/MBD Control Plan. Process to ensure that their facility and that of their sub-tiers can accurately read, manufacture, and inspect to the native Sikorsky engineering data.
8. Documented procedures for configuration control and data security throughout the manufacturing and inspection processes.
9. Comprehensive procedure to document the exact method of inspection and verification back to the CATIA model that ensures 100% inspection of all features or sampling plan per SSQR20.1 for First Article and recurring inspection.
10. **Supplier shall maintain metrics** such as First pass yield, non-conforming parts due to non-compliance to this document; Inspection package turn backs by supplier/sub-tier/individual & Inspection package turn backs by reason for rejection. These records are subject to audit by Supplier Quality Assurance. Metric collection will aid with the management of the process and help to avoid costly escapes.
11. A current, electronic copy of the Reduced Dimension/MBD control plan will be provided to Sikorsky and shall be available upon request by Sikorsky or their designated third-party representatives.

c. The supplier will submit a written request for self-release to Sikorsky Supplier Quality that includes their Reduced Dimension/MBD control plan.

d. Supplier Quality will review the request submittal including the Reduced Dimension/MBD control plan, historical accept/reject data from past Reduced Dimension/MBD submittals, and Supplier DPPM rating. Based on the available data, a determination will be made by Sikorsky Supplier Quality to grant self-release status. In instances where a supplier is not granted self-release, they will be given the opportunity to submit a corrective action plan. Pending successful completion of the corrective action plan, conditional self-release will be granted to the supplier.

e. Sikorsky Supplier Quality will issue a letter to the supplier that describes approval status and any conditions that apply. A sample letter is shown below per figure 8.

Figure 8 Sample Supplier Self Release letter

Sikorsky Aircraft Corporation
6900 Main Street □ P.O. Box 9729
Stratford, Connecticut 06497-9129

SIKORSKY
A LOCKHEED MARTIN COMPANY

DATE: 6/21/18
SUPPLIER NAME: Sikorsky Aircraft Corporation
SUPPLIER CODE: 012345
ATTENTION: John Smith

Sikorsky Aircraft Corporation is hereby granted conditional permission for self-release of FAI documentation for Model Based Definition or Reduced Dimension parts, subject to the Quality Requirements defined in SSQR-01 Main Text section 7. This permission is subject to periodic audit by Sikorsky Supplier Quality and/or their designated representatives. The permission granted in this letter may be revoked at any time if supplier is not in compliance with all Sikorsky Supplier Quality requirements.

If there are any questions concerning the content of this letter, please contact John Doe at Sikorsky Supplier Quality at (203) 383-8484.

Sincerely,

John Doe

Supplier Quality Assurance

11. Validation Point requirements

The following minimum requirements apply to all digital methods of inspection including, but not limited to: Coordinate Measuring Machine (CMM) and Portable Coordinate Measuring Machine (PCMM – like inspection arm, scanner, laser tracker, etc.) unless otherwise authorized by contract.

a. The stated accuracy of the measuring instrument used will not exceed 25% of the feature tolerance inspected unless authorized by Sikorsky Supplier Quality in writing.
   For example, an inspection arm with an accuracy of ±-.001" will not be used to inspect a hole with a ± .001" tolerance as it consumes 100% of the part tolerance. If the tolerance is ± .001", then an inspection arm with a minimum accuracy of .0005" would be required.
b. The validation points represent the nominal points on the CATIA™ model that are the inspection points used for inspecting the manufactured part.

12. Inspection Plan documentation required for SAC FAI Review of RDD or MBD parts

The following documents will be required to be presented to the SAC Inspector along with the completed First Article Part for FAI review. (This is in addition to P.O., drawing/parts list/data sheet, manufacturing planning, material and process certifications, part mark photo, etc. that are required for any FAI review)

a. An Inspection Plan approval letter for the correct part/revision that is signed by SAC SQA or by an authorized
b. individual of a supplier with self-release authority.

c. The Inspection Checklist (ICL) previously approved in compliance with AS9102 and this document completely filled out with all inspection data required for the part.

d. Bubbled drawing or model. This will assist the inspector to efficiently review and interpret the inspection results and determine any redundant inspections to be performed.

e. A CMM report or other digital inspection report for the part when usage is listed on the approval letter. The report must be tied to the part by W.O.#, Lot#, S/N, or equivalent.

Appendix C – SIKORSKY Foreign Object Damage (FOD) Prevention

The Sikorsky requirements for FOD prevention are based on the National Aerospace Standard (NAS) 412, Foreign Object Damage/Foreign Object Debris Prevention, which establishes a baseline FOD prevention policy/procedure and supports the quality management system standard AS/EN/JISQ 9100/9110/9120 requirement for a supplier to carry out a program for the prevention, detection, and removal of foreign objects from its products.

> **Note**: The IAQG – Supply Chain Management Handbook (SCMH) provides assessment tools, descriptions, and training material for FOD Program control attributes.

Definitions

Term	Definition
Foreign Object Damage (FOD)	Any damage attributed to Foreign Object Debris (FOD) that can be expressed in physical or economic terms, which could potentially degrade the product or system's required safety and/or performance characteristics.
Foreign Object Debris (FOD)	Any foreign object (FO) that has entered and/or migrated into/on the product or system, and could potentially cause FOD, if not removed or controlled.
Foreign Object (FO)	An alien substance or article (examples include, but are not limited to: tools, consumables, hardware, product protective devices, personal items, product process debris, operations debris, environmental debris) that could potentially enter and/or migrate into/on the product or system, becoming FOD and potentially cause FOD, if not removed and controlled.
Unrestricted Hardware	Low value, high usage material, issued in bulk quantities and excluded from processing in a Materials Requirements Planning (MRP) system.
5S	A method for improving workplace organization using visual controls (i.e. Sort, Straighten, Shine, Standardize, Sustain) resulting in a positive impact on FOD prevention, productivity and Environmental Safety and Health (ESH).

1. FOD Prevention Program

Suppliers shall implement a FOD Prevention Program with a suitable level of FOD prevention for the complexity and risk of their products/services. The minimum requirements of a FOD Prevention Program for all product/service suppliers shall include:

a. A FOD training program to increase employee awareness, active involvement, and good work habits. FOD training is required for all supplier employees and contractors as applicable and shall be recurring to maintain employee awareness. Training shall include the following topics at a minimum:

- Causes and effects of FOD
- Protection of product
- General housekeeping program and formal 5-S practices
- Clean as you go principles
- Tool control/accountability
- Unrestricted hardware control/accountability
- Consumable control/accountability

- Caps and plugs control
- Cleaning and inspection

b. A documented procedure for material handling and part protection to eliminate potential FO/FOD and handling hazards that includes:

- Risk identification for sensitive parts, assemblies, surfaces, areas, etc.
- Risk identification related to packaging, handling, shipping and storage processes
- Evaluation and controls for risk mitigation specific to cleaning, protection, and care processes
- Defined process sequencing that allows for proper contamination prevention, cleaning, and detection on parts and containers at appropriate process points, including the requirement for a FOD inspection to be performed just prior to closure of any closed assembly with the potential for FO entrapment. Optionally, the use of special FOD stamps to indicate that the inspection is complete, and the assembly was determined to be free of FOD is a recommended best practice
- Defined methods to protect parts where contact with other elements may be detrimental to the part (e.g., columbium, titanium, magnesium, etc.)

c. A general housekeeping program and formal 5-S practices that includes:

- Area cleaning in accordance with 5-S principals (i.e., assembly, test, manufacturing, warehouse, and operational support areas)
- Periodic cleaning/sweeping floors, work-surfaces and any other pertinent surfaces
- Maintaining critical process areas free of open food and beverages
- Areas having clear signage indicating requirements

d. A FOD reporting and investigation process to:

- Report and investigate FOD occurrences and root cause analysis
- Instruct personnel on how to respond in the event of a FOD incident, (e.g. do not disturb evidence, cease operation, immediately notify supervision, begin investigation, etc.)
- Ensure effectiveness of corrective/preventive actions taken to preclude recurrence
- Track FO/FOD non-conformances for analysis of FOD Prevention Program effectiveness and trends

e. Additional FOD Program requirements may be mandated by Sikorsky via the Purchase Order, depending on the FOD risk criticality of product, (i.e. product / commodity type, manufacturing, assembly, and repair processes involved, etc.).

2. Design Control and Repair

Suppliers with design control or repair development capability shall ensure the design applies considerations for FOD prevention, resistance to damage, and that designs are not conducive to debris entrapment to any extent possible. Methods are to include documentation and emphasize risk reduction and elimination of FOD hazards as basic design criteria.

Product designs or repair instructions shall reflect adequate consideration to:

- Identify and eliminate FO entrapment areas
- Identify and seal areas through which FO can migrate
- Utilize adequate connectors, filtering devices, and protective covers over critical mechanical, electrical, hydraulic, and pneumatic components to prevent FO entry
- Install special access panels, ports, etc., for inspection and removal of FO

- Install devices to divert migrating FO from critical mechanisms/components to special access areas for removal
- Utilize fasteners with positive locking mechanisms in areas where high vibration levels are expected, or where separation of the fastened item could result in potential damage
- Utilize blind fasteners in critical areas (e.g., fuel cells) that are not prone to leaving debris upon extraction
- Utilize fasteners with self-retaining features capable of withstanding flight loads to secure high usage access panels
- Eliminate nonessential components built into equipment (e.g., nameplates that can separate under dynamic loads, etc.)

3. Storage Controls

Storage controls shall include:

a. Facilities that provide isolation/protection as necessary to material pending use or shipment
b. Periodic assessment of the condition of material in stock
c. "First in – first out" issuance of materials subject to degradation.
d. Shelf life control applied to processing material, as required.

4. Preservation and Packaging

Suppliers shall implement methods to preserve material during processing, fabricating, assembly and testing, through shipment of end items including as applicable:

a. Regular preservation fluid checks for contamination and maintained free from FO via filtering or replacement of preservatives.

b. Visual inspections prior to final preservation to ensure parts are free from contaminants, debris, foreign material, finger marks and stains. When required, a bore scope examination shall be carried out to ensure freedom from machining chips and debris for internal passages that cannot be inspected visually.

c. Prevention of oil system contamination from silicone-based lubricants.

d. External cleaning when there is evidence of external contamination.

e. Packing material does not induce contamination to parts and assemblies.

f. Prohibited packing material is not used. This includes, but is not limited to:
- Newsprint
- Loose packing material small enough to block internal passages, holes, crevices or parts
- Glue bearing material

g. Packing methods consider weight, physical configuration, and method of shipment to preclude damage to parts.

h. For Sikorsky drawings that do not include special preservation instructions:
- Castings made of low alloy steel, plain carbon steel, ductile iron or martensitic stainless steel shall be preserved prior to shipping using oil per MIL-PRF-2104 or equivalent
- Magnesium alloy castings shall be preserved prior to shipping using Sikorsky approved preservation oil (SS8412)
- Overhaul and repair material shall be preserved in accordance with the applicable approved technical data

i. Optical systems, electrical components or assemblies containing cadmium, lead, zinc or magnesium are not protected with Vapor Corrosion Inhibitor (VCI) treated materials.

j. Protection against corrosion and damage during transit or storage and state the duration of effectiveness of such preservation and packaging, as required by applicable regulatory agency.

k. Proper use of protective closures (caps and plugs) where required. Digital photographs of installed caps and plugs must be submitted to Sikorsky for approval prior to product delivery via the Supplier Portal, using form SA1957.

l. Raw materials shall be protected against corrosion during manufacturing, storage and shipment. Magnesium alloys, carbon steels, low alloy steels and bare 400 series stainless steels shall be protected in accordance with SS8535- Corrosion Prevention During Manufacturing, Storage and Shipment.

m. Anti-friction bearings with Sikorsky part numbers, except those with seals or shields, will be preserved per SS8741- Open and Closed Bearings-Engineering Requirements for De-preservation, Cleaning and Handling of.

5. Shipping

Complete packing slip/shipping label per instructions shall be provided on the Purchase Order (P.O.). Information shall include:

- Packing slip number
- Supplier name
- P.O. number
- Line item number (if applicable)
- "Ship to" address
- P/N nomenclature
- S/N where applicable
- First lot shipped when applicable
- First Article Inspection applies when applicable
- Reference to any non-conformance documents
- Country of Origin

6. Electrostatic Discharge (ESD) Control:

Where applicable, the supplier shall institute adequate procedures and controls to prevent damage to electronic equipment and components which are sensitive to ESD, per MIL-STD-1686 or applicable approved technical data. ESD control requirements apply where equipment containing ESD sensitive parts are used during fabrication, calibration, testing, or packaging of the end item, whether or not the end item is ESD sensitive.