

APPENDIX I - SUPPLIER QUALITY ASSURANCE REQUIREMENTS

F-35 LIGHTNING II PROGRAM

This Appendix I with the Supplier Quality Assurance Requirements for the F-35 Lightning II program defines Fokker Aerostructures (Buyer) additional Program Specific Quality Requirements and forms an integral part of the Purchase Order (PO) concluded between Supplier and Buyer.

The contents of this Appendix I is additional to or replacing one or more of the standard Fokker Quality Requirements as provided in Annex B “Supplier Quality Assurance Requirements (standard)”. All terms defined in the Purchase Order shall be applicable to this Appendix I, unless explicitly defined otherwise in this Appendix I.

Supplier shall have systems and methods to assure full compliance to this Appendix I. When products or services applicable to the PO are procured by the Supplier from sub-tier suppliers, the supplier shall flow down the Appendix I requirements as necessary to assure full compliance is achieved.

In case of differences or inconsistencies with texts in the Main Contract, the stipulations in this Appendix I will prevail.

The latest valid version of this document is available on the GKN / Fokker Aerostructures website via: <https://www.gknaerospace.com/en/Utilities/gkn-aerospace-suppliers/fokker/>

APPROVAL

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CHANGE LOG

Date/Issue	Change Reason
Sep.2009/-	Initial Appendix I - Supplier Quality Assurance Requirements
Jun.2010/01	Change of Company Name
01.Sep.2010/02	Receiving Inspection at Fokker's facility: Requirement for additional documentation for non-Fokker designed material has been removed.
16.Sep.2013/04	<ol style="list-style-type: none"> 1. New Template 2. Document changed to Appendix I for F-35 Lightning II program (AESP-F-35-08-11680-04) 3. Requirements deleted which are covered in Fokker AnnB-SQARen2010 4. Supplier Quality Assurance Requirements (standard)
05.Oct.2022/05	<ul style="list-style-type: none"> - Update to QAP / Name of QAP changed to differentiate LMA and NGC - New Template.

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01 GENERAL

This Appendix I defines Buyer's additional Program Specific Quality Requirements and forms an integral part of the Purchase Order (PO) concluded between Supplier and Buyer. The contents of this Appendix I is in addition to or replacing one or more for the standard Fokker Quality Requirements as provided in Annex B "Supplier Quality Assurance Requirements (standard)". All terms defined in the Purchase Order shall be applicable to this Appendix I, unless explicitly defined otherwise in this Appendix I. Supplier shall have systems and methods to assure full compliance to this Appendix I. When products or services applicable to the PO are procured by the Supplier from sub-tier suppliers, the supplier shall flow the Appendix I requirements as necessary to assure full compliance is achieved.

RIGHT OF ACCESS

Fokker, its customers for the JSF program and/or the US Governmental representative have the right to access Supplier facilities to perform quality and security audits. The conditions and procedures for such quality audits have to be agreed upon by Fokker, its customers and/or the US Governmental representative and Supplier, on a case by case basis. This to ensure that the required information can be presented without jeopardizing Supplier's right to protect competition sensitive or confidential information. The results of those quality audits will be covered by written reports and may lead up to request for corrective action, to which Fokker, its customers and/or the US Governmental representative and Supplier both will respond.

REFERENCE DOCUMENTS:

Unique documents referenced in this document may be obtained from the Fokker representative. Copies of Aerospace Standards (AS documents) may be obtained from the Society of Automotive Engineers at: www.sae.org.

02 ABBREVIATIONS

ADP	Article Data Package
COC	Certificate of Conformity
DEF	Data Exchange Form
DOF	Direction of Flight
FOD	Foreign Object Debris/Damage
IFOD	In Flight Opening Doors
ITAR	International Trade in Arms Regulations
JDL	JSF Data Library
JSF	Joint Strike Fighter, F-35 Lightning II
KC	Key Characteristic
LMA	Lockheed Martin Aeronautics
NDT	Non Destructive Testing
NGC	Northrop Grumman Corporation
PAS	Property Accountability System
PDM	Product Data Management
PO	Purchase Order
POC	Point Of Contact
QA	Quality Assurance
SOW	Statement of Work

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03 QUALITY REQUIREMENTS

GENERAL

As part of the contract the minimum quality requirements referenced in SQAR shall prevail.

For latest revision status see:

<https://www.northropgrumman.com/suppliers/contracts/quality-documents/>

LANGUAGE

Unless otherwise authorized by Fokker in writing, all records, reports, specifications, drawings and other documentation shall be in English.

SUPPLIER SUB-TIER CONTROL

Supplier is responsible for ensuring the following:

- All items procured from its sub-tier suppliers conform to all requirements of the Fokker Purchase Order
- All applicable provisions of this document are flowed down to its sub-tier suppliers
- Specifying on their purchase order for special processes the latest process specification revisions.

SUB-TIER SUPPLIER QUALITY SYSTEM REQUIREMENTS

Sub-tier supplier quality systems shall comply with the applicable quality system level specified in Fokker SQAR annex B.

If it is necessary to utilize a sub-tier supplier who does not have a compliant Quality Management system listed then the Supplier shall incorporate the following sub-tier control management methods into their quality management system:

1. Supplier shall provide all raw material to sub-tier.
2. Supplier shall perform tool prove inspection, First Article Inspection according AS9102 and 100% inspection (receiving or source) of sub-tier's hardware
3. Supplier shall be responsible for the special processing of the sub-tier's hardware.
4. Supplier shall not allow their sub-tier to off-load to another sub-tier without their documented approval

OUTSOURCING OF CRITICAL ITEMS

Supplier shall obtain approval from Fokker, in writing, when any KC, Interchangeable-Replaceable features, Fracture Critical features, Durability Critical features, Maintenance Critical features, Safety Critical features, Mission Abort Critical features, or changes affecting form, fit or function are to be subcontracted.

Production and inspection of critical Items requires qualification against 2ZZP00006 Control Of JSF Air Vehicle Critical Parts

PROCUREMENT OF JSF SPECIFIC MATERIALS AND STANDARD HARDWARE

For procurement of JSF specific materials (as defined in JSF specific material specifications) the use of the Lockheed Martin EMAP-system for selection of JSF qualified sources is required. In case distributors are used it must be ensured that the material is originating from an EMAP listed source. Distributors are required to provide original mill source COC and test reports.

If Supplier has no access to EMAP then Fokker needs to deliver the required information.

NONDESTRUCTIVE TEST (NDT) PROCEDURE / TECHNIQUE SUBMITTAL REQUIREMENTS

Supplier shall review the Purchase Order and associated drawings/drawing notes and related documents to determine if NDT procedures and/ or technique submittal is required. Submittal to and approval of NDT general procedures and part-specific techniques by Fokker and/or its customer is required prior to performing NDT. After initial approval, any changes to subject documents must be resubmitted to Fokker for approval.

Suppliers using outside sources for NDT shall ensure that the selected NDT sub-tier has approval of Fokker and/or its customer for the NDT procedure/technique used.

On-site validation of procedures/techniques to verify specification compliance may be performed at the discretion of Fokker. The detail instruction for NDT general procedures and part-specific technique submittals shall be obtained from Fokker.

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DATA / CONFIGURATION MANAGEMENT

ITEM CODES

The Item codes for non-standard parts and assemblies contain characters from which Fokker's customers can be identified:

NGC Item Codes CSH

LMA Item Codes VSH, FSH, WSH and all other.

CONTROL AND USE OF DIGITAL DATASETS

The 3D- product design data required for manufacturing the part will be delivered to the Supplier by Fokker. The data will be delivered by Gateway or FTP-server, encrypted with PGP software. Supplier to ensure to have the same encryption-software as Fokker.

A Data Exchange Form (DEF) or ADP accompanies each sent data package. In case of converted data (IGES, VDA, Step) the data will also be accompanied with a Verification of Data Conversion (VDC) according to Fokker procedures.

Additional requirements for applicable NGC parts:

When using released digital datasets Supplier shall comply to the Northrop Grumman SQARSUP-0100 Supplement for the Control and Use of Digital Datasets.

This document can be found on Here:

<https://www.northropgrumman.com/suppliers/contracts/quality-documents/>

CONFIGURATION MANAGEMENT

ANSI/EIA-649 shall be used as guideline for Supplier's Configuration Management system.

Remark: If Suppliers have access to the LMA JDL/PDM system, Suppliers are allowed to use these systems for applicable LMA process specifications and revisions. For the on the Fokker Purchase Order defined part number and revision Suppliers are allowed to use LMA product definitions and models from the LMA team center PDM system. In case of any discrepancies between the information received from Fokker and the information from team center PDM the supplier needs to request Fokker for further advice.

SPECIAL PROCESS REQUIREMENTS

Process specifications called out in either Engineering drawings, other process specifications or Purchase Order, require Lockheed Martin Aeronautics approval in case these are defined as "Special Process".

A special process is an operation performed on an Item where the operation is not readily inspectable subsequent to its conclusion. Special processes have verifiable controls inherent to the process i.e. heat treat, plating, nondestructive testing, etc.

Supplier shall ensure that the applicable processing source for special processes, including those performed in house by Supplier, are approved prior to any processing of hardware. The approved suppliers for these special processes are listed on Northrop Grumman ASPL or Lockheed Martin QCS-001.

The NGC ASPL is available on Northrop Grumman OASIS website:

<https://oasis-aspl.myngc.com/>

The Lockheed Martin QCS-001 on the Lockheed Martin website

<https://www.lockheedmartin.com/en-us/suppliers/business-area-procurement/aeronautics/quality-requirements/control-specs.html>

Suppliers shall validate this by reviewing the Approved Special Processors Lists whenever they get a new purchase order from Fokker or whenever they start to process a new lot of hardware. For parts and assemblies where Fokker's customer is NGC both OASIS and QCS-001 can be used to select approved suppliers.

2ZZP0006 CRITICAL PARTS REQUIREMENTS

Parts where 2ZZP0006 is applicable to, usually designated or described as Fracture Critical Non Traceable, Fracture Critical Traceable, Fatigue Critical, Durability Critical, Maintenance Critical, Safety Critical, or any other JSF Parts requiring manufacturing plan approval by engineering drawings, specifications or purchase order, require submittal of the manufacturing plan to Fokker at least thirty (30) days prior to start of production. JSF Durability Critical parts are exempt unless required by the engineering. The manufacturing plan shall contain sequential fabrication, processing, processor name and inspection steps in the order required by the applicable process specification(s) and/or engineering drawing(s). Upon approval of Supplier's manufacturing plan, the supplier shall control all manufacturing, processing, testing and inspections as stated in the approved plan. No deviations, including the selection of Supplier's sub-tier suppliers/processors, is permitted without Fokker prior knowledge and written authorization.

Manufacturing of product is not permitted until Supplier has received Fokker's approvals. Manufacturing plan can be approved without NDT technique approval in which case manufacturing of parts is allowed up to a point before NDT.

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VARIATION MANAGEMENT AND KEY CHARACTERISTICS

When Fokker drawing, specification, and/or Purchase Order, includes “key characteristic” (KC) requirements, the supplier shall employ a Process Variability Reduction/Statistical Process Control (VR/SPC) program compliant with AS9103, Variation Management of KC’s.

Statistical methods to establish, control and verify process capability and product characteristics on key processes affecting the products directly or indirectly will be used. For this purpose Supplier shall identify the applicable Sources of variations. Supplier shall work towards achieving a Cpk of 1.33 or better on the applicable Measurements Plan features. VR/SPC related records shall be retained at supplier’s facility and provided to Fokker upon request, for compliance/performance review.

Supplier shall upon delivery of hardware also submit records by email of the KC’s (Inspection results) in AIMS TDF or other agreed format. This also applies to any characteristic called out in part specific measurement plans provided as part of the engineering. Contact Fokker for the email address of the appropriate recipient of the data.

See also Quality clause Q30 from Lockheed Martin.

<http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality.html>

04 NON CONFORMANCE MANAGEMENT

DISPOSITION OF A NON CONFORMANCE

Supplier disposition authority of non-conformance’s is limited to rework to specification, return to supplier and scrap.

These terms are defined as follows:

Rework – restore material to specification compliance in accordance with required process(s) and addressed by governing process specification(s). parts subject to subsequent processing not authorized by specification shall be submitted to GKN-Fokker’s Material Review Board (MRB) for disposition. Specific rework instructions shall be provided with rework dispositions.

Return to Supplier – Return of sub-tier product found to be discrepant for subsequent rework or replacement.

Scrap – Permanent removal from production and destruction of product found to be unfit for use. Scrapped product shall be controlled until destroyed.

All other non-conformance shall be submitted to GKN-Fokker.

MARKING REQUIREMENTS

The supplier shall mark discrepant material/product as defined in the disposition and supplement instructions.

NOTIFICATIONS OF QUALITY ESCAPE / DISCLOSURES

Supplier’s system shall provide for timely reporting of non-conformities that may affect already delivered product, including any continuing airworthiness actions. Notifications to GKN-Fokker shall be submitted on supplier’s company letterhead and include a clear description of the discrepancy, which includes as necessary: parts affected, customer and/or supplier part numbers, manufacturing dates, quantities and date(s) delivered, any information relating to Root Cause / Corrective action steps initiated to address the defective condition and preventive measures taken to preclude recurrence of the process failure. Modifications of a disclosure (additions or deletion of data) requiring subsequent issuances shall be revision controlled to provide definitive sequencing (i.e. Rev. A, B, etc.)

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05 PRODUCT DELIVERY

PRODUCT ACCEPTANCE

GKN-Fokker, its customer, and/or their authorized inspection agency, or regulatory authorities shall have the right to send representatives to the supplier and/or his sub-contractors to determine contract compliance by either monitoring, witnessing, and/or performing such activities as inspections, test witness or other system, process and/or product evaluation and verifications as necessary to determine product acceptability to contractual requirements. The type, necessity and degree of demonstration of conformance will be at the sole discretion of Fokker taking into consideration such factors as product complexity, the environment where the product is used, and the ability to determine product quality after receipt and past supplier performance.

Without additional charges, Supplier and/or his sub-tier supplier shall make their facility and applicable records available for these activities and provide all reasonable support for the safety and convenience of these representatives during their stay at the supplier's and/or their sub-tiers plants and facilities. Supplier shall also provide Fokker Representative with internet access.

Product Acceptance will take place according to the inspection types Receiving Inspection and Source Inspection at Fokker's discretion without any additional cost charges by Supplier.

RECEIVING INSPECTION AT FOKKER'S FACILITY

Deliverable product(s) are subject to Fokker inspection upon receipt at Fokker's facility.

FOKKER SOURCE INSPECTION

Deliverable product(s) are subject to Fokker's Source Inspection. Supplier shall notify Fokker, at least forty-eight (48) hours in advance of need, to schedule "in process" or "final" source inspection. Fokker Quality Procurement shall determine if on-site Source Inspection is applicable or that remote Source Inspection can be conducted.

All shipping documents and product documentation provided by Supplier must demonstrate conformity to Fokker's Purchase Order

GOVERNMENT SOURCE INSPECTION

Deliverable products can be subject to Government oversight during the performance of this Purchase Order prior to shipment.

GOVERNMENT SURVEILLANCE

Government reserves the right to perform surveillance of a supplier's quality and/or manufacturing operation during the performance of this Purchase Order.

06 SHIPPING DOCUMENTATION REQUIREMENTS

Suppliers must provide to Fokker a Certificate of Conformance (COC) before or with delivery of the products, assuring that all work performed in connection with the purchase order conforms to requirements therein and were forwarded in good condition.

The COC may be a separate document or included on the packing sheet. The Supplier's Quality management or authorized designee must sign and stamp this document.

The COC to meet the following minimum requirements:

- Supplier's company name and address.
- NGC identification number (vendor or processor code) if applicable
- Fokker's purchase order number
- line item(s)
- part numbers incl. revision
- specification number (incl. rev.) of applicable processes
- Evidence of and/or Government Source Inspection acceptance when applicable
- Fokker's disposition on the non-conformance document number(s); as applicable
- Interchangeable and Replaceable (I&R) designated control numbers
- Issue date

Note 1: Parts and/or assemblies processed to the required process specification revision level by an approved processor, but purchased and/or delivered after the process specification was revised or superseded are acceptable. Age-sensitive material (shelf life items) is precluded from this noted exception.

Note 2: In case LMA process specifications are applicable Supplier must provide the LMA identification number (vendor or processor code) on the COC. If processor is utilized based on Nadcap approval, a statement to the effect "Source utilized based on current Nadcap accreditation" shall be included.

Note 3: For any shipment under Request for variance (i.e. Customer approved deviation to spec) the objective evidence of approval and the reference to this variance is to be included in the delivery documents including COC.

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07 CORRECTIVE AND PREVENTIVE ACTION

GENERAL

The supplier shall respond to all requests for corrective action within 30 days or on or before the requested response due date. The response must be submitted on Supplier's company letterhead, unless otherwise directed by Fokker. Supplier shall maintain a documented system for determining root causes of documented defects and obtaining corrective action and preventive action both internally and from its sub tier suppliers. Supplier is accountable for effectiveness of corrective and preventive actions taken.

Fokker requests for corrective and preventive action will be issued to the supplier's representative by means of Supplier Corrective Action Request (SCAR)

CORRECTIVE ACTION RESPONSE EXTENSIONS

Fokker may grant the supplier an extension for their corrective action response on a case-by-case basis. Suppliers may formally request a time extension at least forty-eight (48) hours prior to the assigned corrective action response due date. Request must be in writing with adequate justification documenting the status of the investigation, revised corrective action completion dates and a listing of previous actions taken toward implementation of effective preventative action, as applicable.

VERIFICATION OF CORRECTIVE ACTION (VCA)

Fokker retains the right to conduct corrective action verification at the Supplier and/suppliers sub-tier Supplier's facility to assess effectiveness of implemented corrective action.

Fokker may grant the Supplier an extension for their VCA response on a case-by-case basis.

Note: Material currently undergoing corrective action investigation processing up to and including verification of corrective action shall not be shipped without the authorization of Fokker.

08 F-35 SPECIFIC MATERIALS AND STANDARD HARDWARE

For procurement of F-35 specific materials (as defined in F-35 specific material specifications) the use of the Lockheed Martin EMAP-system for selection of F-35 qualified sources is required. In case distributors are used it must be ensured that the material is originating from an EMAP listed source. Distributors are required to provide original mill source COC and test reports.

When structural metallic or non-metallic materials (F-35-specific and industrial standard) are listed in EMAP only those listed sources may be used. Please use the following link:
<https://elli.lmtas.com/eps/eea2010/aspfiles/logon.asp>

Remark: For material substitution it is allowed to use 2ZZA05001 (AUTHORIZED MATERIAL SUBSTITUTIONS FOR USE ON F-35 F-35 AIRCRAFT)

Materials not used for critical parts and not defined in F-35 specific material specifications (industrial standards like AMS, NAS, etc.) do not require use of F-35 qualified sources (listed in EMAP).

For F-35 specific standard hardware the Approved Manufacturer List for Standard Parts 2GNA00001 can be used for source selection. The list is not mandatory for identification and verification of approved sources.