

APPENDIX I - SUPPLIER QUALITY ASSURANCE REQUIREMENTS

DASSAULT F6X PROGRAM

This Appendix I with the Supplier Quality Assurance Requirements for the Dassault F6X 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 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.gkn.com/en/Utilities/gkn-aerospace-suppliers/fokker/>

APPROVAL

Involvement	Name	Function	Signature and approval date
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CHANGE LOG

Date/Issue	Change Reason
17.dec.2014/01	Replacement of previous Appendix I known as 'App-I-SQARen2012 (Dassault SMS Horizontal/Vertical)' into new format according Fokker procedure FQM-0020 and change of program-name into Dassault F5X
29.aug.2019/02	Program restarted, name changed from F5X into F6X.

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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.

02 QUALITY REQUIREMENTS

Supplier shall demonstrate that its quality system meets EN/AS 9100 requirements.
The supplier must flow down all requirements/procedures to their suppliers.

03 QUALITY ASSURANCE SYSTEM

The Supplier shall submit a Quality Assurance Plan (QAP) to Fokker Aerostructures for acceptance. ISO 10005 and EASA Part 21, sub part G, §21A.139 will serve as a guidance. Supplier shall update the QAP when needed and submit the updated issue to Fokker Aerostructures for acceptance.

Next to the QAP Supplier shall use Advanced Product Quality Planning (or APQP) to design and/or build their work package. APQP is a standardized framework of procedures and techniques used to develop/manufacture products in industry. The APQP process has seven major elements (reference AIAG's APQP Manual):

- Understanding the needs of the customer
- Proactive feedback and corrective action
- Designing within the process capabilities
- Analyzing and mitigating failure modes
- Verification and validation
- Design reviews
- Control special / critical characteristics.

The minimum requirement for suppliers of main components is to submit the following document:

- Process Control Document (PCD): a written description of the manufacturing plan developed to control variation in a process (of at least Key Characteristics, see also under 7. Primary Structural Elements (PSE) / Significant Structural Item (SSI) / Key Characteristic (KC)) within the acceptable limits. It is a living document.

The PCD needs to be submitted before start of production.

Based on the maturity of the supplier organization, order/quality yields and past experience with comparable product, the Quality Procurement Department of Fokker Aerostructures shall decide which parts (procedures and/or techniques) of the APQP are applicable. Typical techniques that can be requested are:

- (Process) Failure Mode and Effects Analysis (FMEA): a document that defines the new process with requirements and includes potential causes and effects of failure along with a prediction of the likelihood of their occurrence.
- Measuring System Analysis (MSA): the methods used to verify and monitor the accuracy and quality of a measuring system using statistical study of repeated tests of the gages and other parts of the system. MSA tools identify the amount of variation in the gage by isolating the measurement variation from the process variation.

If applicable, both the (P)FMEA and the MSA need to be submitted before start of production.

04 FIRST PART QUALIFICATION (FPQ)

Depending on the classification of the part, the maturity of the supplier organization, order/quality yields and past experience with comparable product a.o. Supplier shall perform a First Part Qualification (FPQ).

The purpose of the FPQ is:

- to validate the production processes and means (as presented during the Manufacturing Readiness Review (MRR)) used to ensure the reproducibility of the production of parts,
- to check the conformity of a selection of the first production parts and their manufacturing documentation before the remaining parts and their processes are developed.

The exact process how to perform a FPQ will be defined by the Quality Procurement Department of Fokker Aerostructures and will be provided to the Supplier when applicable.

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05 DEVIATIONS

Non-Conformity (NC) Process:

The Supplier shall notify Fokker Aerostructures in writing and prior to delivery in case of any Non-Conformity or deviation found during the manufacturing and inspection phases that affects:

- NCs with specifications, regulations or contractual requirements,
- NCs to the definition file,
- NCs to the manufacturing and inspection processes.

In case the Non-Conformity or deviation is detected after the parts are delivered, the Supplier shall notify Fokker Aerostructures within 72 Hr. in writing.

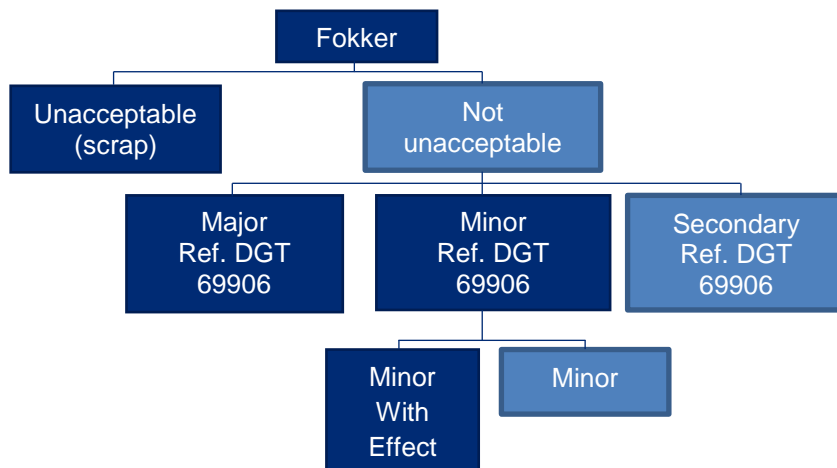
In both cases the Supplier shall provide a report describing all the causes of the deficiency (direct cause, contribute cause and root cause) and proposing:

- the containment action to be implemented to isolate the problem and/or prevent more bad parts with the same deficiency to be shipped, within the complete supply chain
- the corrective action to be implemented to avoid recurrence of the reported deficiency,
- the assessment of the correction efficiency,
- a retrofit plan, when applicable,
- the preventive actions to prevent this type of deficiency.

All provided information on the Non-Conformity will be used by Fokker Aerostructures to determine the disposition of the parts.

A non-conformance will first be reviewed by the Fokker MRB. For each non-conformance investigation and subsequent disposition a substantiation is required (e.g. operational- and strength wise). If the non-conformance is not unacceptable (potentially acceptable) it has to be decided by the MRB whether or not additionally a Concession (Waiver) is required or that the non-conformance can be classified as secondary. This process has been laid down in figure 1.

Figure 1: Concession (Waiver) process



Dassault Non Conformance Classification	Applicable Non conformance documents	Approval Dassault Necessary?
Not acceptable	Conform Fokker procedures	No
Major	Fokker NC + Dassault Concession	Yes
Minor with effect on airworthiness	Fokker NC + Dassault Concession	Yes
Minor without effect on airworthiness	Fokker NC + Dassault Concession	Yes (until T/C) or No (after T/C if granted)
Secondary	Fokker NC	No, but until T/C, classification needs to be accepted by Dassault.

All coordination of the concessions will be Fokker responsibility.

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06 REACH REQUIREMENTS

The supplier shall provide information of parts containing one or more substances, identified in the candidate list, with a concentration higher than 0,1% mass/mass.

- Supplier shall establish via proper calculations whether each of these substances contained in the "Items" provided to Fokker, exceed or not the 0.1% mass/mass threshold.
- Supplier shall give Fokker the list of all the items containing one or more substances listed in the candidate list, together with the technical description of the concerned substances (name, CAS Number , EINECS Number), details about the materials (reference, manufacturing site, etc...) and shall mention if this substance exceed or not 0,1% mass/mass.
- The REACH-report is part of the Delivery Documentation, or a separate statement is accepted in individual cases.

07 PRIMARY STRUCTURAL ELEMENTS (PSE) / SIGNIFICANT STRUCTURAL ITEM (SSI) / KEY CHARACTERISTIC (KC)

Supplier shall consider PSE and SSI parts (only Class I or II) as traceable parts if applicable. PSE and SSI parts are defined by Fokker Aerostructures.

The identification of PSE and SSI shall be kept visible and legible after assembly. PSE and SSI shall be individually marked with serial number (PSE) or at least batch number (SSI) and recorded in the ship set delivery documentation.

PSE parts that are manufactured in batches may have a maximum of 5 parts in 1 batch with the restriction that a maximum of 2 different material batches may be used.

For the main components it is mandatory to use the following serial numbering: The serial number of the part consist of 3 letters and 4 digits. The 3 letters refer to the facility which has manufactured the part. For Fokker Papendrecht the following shortage is used; FKP, Fokker Hoogeveen is FKH, for the suppliers Royal RYL will be used and Airborne will use ACO.

The complete serial number will always start at xxx0001, for Fokker Papendrecht this will be FKP0001. If in future a new location has to be added the letter code must be determined by the Quality Liaison of the Program Team.

Serial numbering for the first SS will be:

P1 = FKP0001

T1 = FKP9998

T2 = FKP9999

P2 = FKP0002

P3 = FKP0003

1st serial = FKP0004 Quality record retention for PSE and SSI parts is Life of Product (LOP) + 3 years.

Key Product Characteristics are defined by Fokker Aerostructures. Other Key Characteristics are defined by the Supplier. Statistical Process Control (SPC) shall be used for Key Characteristics. EN/AS 9103 shall be used as a guidance. The Quality Procurement department of Fokker Aerostructures defines what the requirements are for process capability (e.g. a process capability index, Cp or Cpk, $\geq 1,33$).

An Acceptance Test Report (ATR) or an Inspection Handbook shall be drawn up for each assembly. This means that at the delivery of an assembly to Fokker Papendrecht Assembly an Inspection Handbook shall be delivered with the product containing at least the KC results, serial number and list of Non-conformances.

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08 TECH MEMO

For the Dassault program a method has been defined for controlled implementation of alterations to released design and/or manufacturing definitions before type certification, prior to reissue of these definitions as intermediate solution with the help of Tech Memo's.

A Tech Memo can be used when:

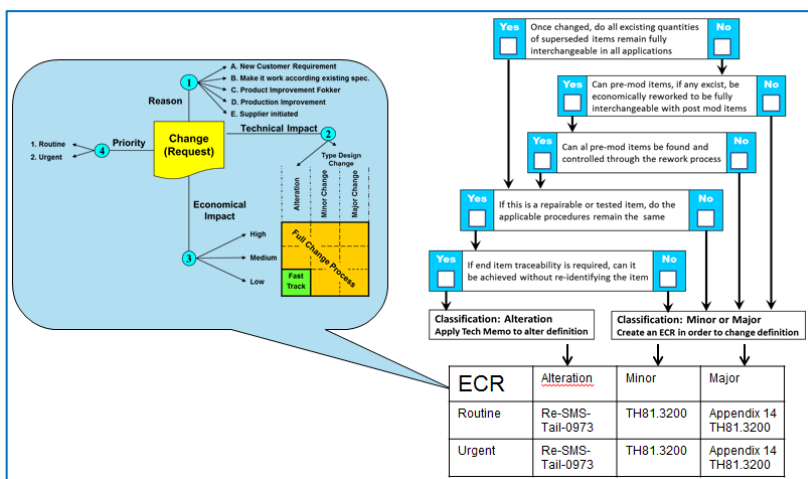
- Changes are classified as alterations
- Implementation of alterations to released design and/or manufacturing definition is immediate needed prior to reissue of these altered definitions in order to prevent NC's and/or give clarifications to released definitions.

Tech Memo's may only be used until Sustaining Review of the F6X program and shall only be used before type design certification.

All alterations executed with Tech Memo's shall be implemented in reissued definitions prior to Sustaining Review.

The following template shall be used:

With respect to the decision steps to determine whether a Tech Memo is allowed, see the following figure:



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09 PRODUCT DEFINITION

In order to explain the product definition and parameters of Dassault F6X (mono) parts, document Re-SMS-Tail-0662 has been created. It describes Part naming and numbering, drawing summary sheet explanation, making parameters visible in Catia or Enovia and explains CATPart elements.

