

TITLE PATRIA BEC SUPPLIER QUALITY REQUIREMENTS FOR SUBCONTRACTORS

Applies To	This specification applies to all Patria BEC subcontractors (Type B).
Introduction	This document defines the core elements of Patria BEC Quality System and describes the basic requirements and guidance for all subcontractors used by Patria BEC.
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Nature of Change	Edition Date	Rev.	§ Changed	Description of the Change
	10/2016	01		Document creation
	11/2017	02	See margin	Review of the procedure following AS9110 upgrade <ul style="list-style-type: none"> - Addition of requirements on special processes / record retrieval & destruction / Product Safety / Personnel awareness / suspect part prevention / Personnel eye exam) - Clarification of FAI requirements - Requirement for subcontractors and new spare spitted into 2 procedures (DFQ 05 created for spares)
	10/2020	03	See margin	Addition of the requirement to provide a copy of the approved waivers when applicable and to reference the technical data revision in the CoC Addition of the FORM 1 release document Addition of occurrence reporting requirements

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Requirement Origin	Document & Section	Title
	AS 9110 § 8.4	Control of externally provided processes, products and services

Ownership	<p>Process Owner: Quality Manager (PS10 : Insure Product Quality)</p> <p>Document Custodian: Quality Manager</p> <p>Publication Notification: QPulse</p>
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Supporting References	The following references support the implementation of this document:	
	Reference	Title
	DQF.01	Supplier Quality System Requirements For Maintenance Organizations

Records & Forms	00eq0506 - Supplier Qualification Questionnaire
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Definitions	Approved Technical Data	Commonly Abbreviated: ATD. Data approved by the appropriate Civil Aviation Authority (CAA), delegated government authority, or military customer, for the use in performing maintenance, preventative maintenance, or repair of aircraft engines, items, appliances and components.
	Certificated Supplier	A supplier that holds a valid and current certificate from: <ul style="list-style-type: none">- an appropriate Civil Aviation Administration (CAA) or- a certification body (FAA, EASA, EN/AS 91XX, ...). Appropriate means that the supplier holds a valid and current certificate from the aviation authorities or CB.
	Certificate of Conformance	A document that certifies product conformity to process, design and/or specification requirements
	Civil Aviation Authority	May also be referred to as National Aviation Authority (NAA). This is the governing body of each respective country, or union of countries, which establishes rules, laws, guidance and other requirements of all things related to commercial aviation, including maintenance and overhaul of commercial aircraft registered in the respective country.
	Counterfeit Part	An unauthorized copy, imitation, substitute, or modified part (e.g., material, part, component), which is knowingly misrepresented as a specified genuine part of an original or authorized manufacturer. NOTE: Examples of a counterfeit part can include, but are not limited to, the false identification of marking or labeling, grade, serial number, date code, documentation, or performance characteristics.
	Qualified Supplier List	A listing of maintenance functions contracted to other repair stations. It focuses on the maintenance functions being contracted and to whom.
	Escape	Parts, engines, services, or other delivered products that do not meet customer requirements. Escapes are determined by Patria BEC based on the following two categories: <ol style="list-style-type: none">1. Significant Escape—An escape that results in customer impact through:<ul style="list-style-type: none">• Recommendation for field recall or significant inspection• Flight restriction/launch impact• In-flight shutdown• Product/flight safety2. Other Escapes—All other escapes outside of the Significant Escape criteria.
	Fabricator	Manufactures detail parts for OEM business
	FAI	First article inspection
	Foreign Object (FO)	A substance or article alien to the product that could potentially cause Foreign Object Damage (FOD). Manufacturing, Assembly, and Inspection process debris of the type that is a direct by-product of that process shall not be considered FO unless the criteria for FOD Event or FO Event have been met.
	Foreign Object Damage (FOD)	Any damage attributed to a foreign object that can be expressed in physical or economic (monetary) terms, which may or may not degrade the product's required safety and/or performance characteristics. Example: <ul style="list-style-type: none">- Product damage- Impeded performance- FO delivered to processes or customers

Key Process/Part Characteristic	Commonly abbreviated: KPC. An attribute or feature whose variation has a significant influence on product fit, performance, service life, or produce ability; that requires specific action for the purpose of controlling variation.
Personnel Qualification	The personnel qualification is the recognition of the person ability to master a technique used to perform a fabrication or maintenance (Welding, machining, ...) This qualification also includes the recognition of the ability to perform the controls required and express a conformity judgment per technical data.
Product Safety	The state in which a product is able to perform to its designed or intended purpose without causing unacceptable risk of harm to persons or damage to property.
Non-Certificated Supplier	A supplier that either holds no certificates from a Civil Aviation Authority (CAA) or CB (FAA, EASA, EN/AS 91XX, ...).
Critical Process	Production process where the resulting output cannot be verified by subsequent monitoring or measurement and where realization parameters must be frozen. Examples: Surface treatment, heat treat, welding, ...
Type B - Aeronautical Maintenance Supplier	Supplier of a service for review, repair, inspection, replacement, change or correction of a component, carried out after production and initial airworthiness certificate from the relevant Authority.
Unapproved Part	A part that was not produced or maintained in accordance with approved or acceptable data and applicable statutory, regulatory, and customer requirements.

Acronyms
(Optional)

The following defined acronyms are used throughout this document

Acronym - See			
ATD	Approved Technical Data	OASIS	Online Aerospace Supplier Information Center
CAA	Civil Aviation Authority	QMS	Quality Management system
CB	Certified Body	GQA	Government Quality Assurance
COC	Certificate of conformity	RT	“Rapport de traitement” = Non-conformance report
NAA	National Aviation Authority	QSL	Qualified Supplier List
NADCAP	National Aerospace and Defense Contractors Accreditation Program		

CHAPTER I GENERAL REQUIREMENTS

Introduction This chapter describes the basic requirements and guidance for all subcontractors used by Patria BEC.

Overview The military aviation aftermarket industry is regulated by various military customers that prescribe the necessary controls needed for overhaul and repair of aircraft engines and components.

Suppliers that perform maintenance services for the military must either be AS/EN91XX or AS9110 registered.

ISO9001 certificated and non-certificated suppliers may be allow but they may be subject to specific QMS audits by Patria BEC.

Suppliers may have distinctly different requirements beyond the basic requirements as defined in this document.

Basic Requirements Suppliers performing maintenance services on aircraft engines or components must be listed on the Patria BEC QSL.

The Supplier shall comply with Patria BEC Supplier Quality Assurance System Requirements.

The Supplier shall commit to be compliant with the requirements of the applicable norm of their sector or type as presented in the table hereunder and, with the additional Patria BEC requirements of this document.

Suppliers must comply with the following:

- Registered to ISO or AS requirements
- Only work to ATD supplied by the contracting organization
- Allow inspection and/or audit of their system or processes by the contracting organization
- Always issue a Certificate of Conformance (CoC) for the work performed
- Issue a CoC to the approved technical data provided by the contracting organization
- May not subcontract work without permission from the contracting organization
- May not disposition nonconforming product without permission from the contracting organization
- Provided a first article inspection on repairs performed when applicable

Sub tiers suppliers If subcontracting allowed, suppliers shall ensure that the requirements describes in the following chapters are flowed down, as applicable, to any sub-tiers suppliers used.

The supplier shall use customer-designated or approved external providers, when required in the purchase order or the Approved Technical Data

CHAPTER II SUPPLIER QUALIFICATION REQUIREMENTS & SURVEILLANCE

Introduction	Prior to performing work for Patria BEC a supplier must be granted approval and be placed on the Qualified Supplier List. Once added, a supplier must maintain an "Approved" status. This chapter describe this process.
QSL Qualification process	<p>The supplier qualification process consist in:</p> <ul style="list-style-type: none">• Completing an initial questionnaire that characterizes the supplier organization (00eq0506)• Successfully pass a full system audit compliant with regulations and/or standards• If applicable, providing a copy of all CAA certificates, ISO/AS registration, and applicable operations specification and capability lists. <p>Patria Belgium Engine Center S.R.L will perform a desktop audit base on the elements provided to ensure that an organization meets the requirements of the Patria BEC Supplier Quality Assurance Program.</p> <p>If needed, a physical QMS audits by Patria BEC may be schedule to finalize the qualification process.</p>
QSL Statuses	<ul style="list-style-type: none">• Added – This means a supplier has applied for addition to the QSL. With this status may not perform work unit all qualification requirements have been met• Approved – This status means that the supplier has met all qualification requirements and has been granted approval to perform work. The supplier may be approved as certificated, non-certificated, or registered• Suspended – This status means that a decision has been made to temporarily suspend a supplier's approval• Removed / Do not use – This status means the supplier has been removed from QSL and is not approved to perform work. Restoration to the QSL will require a full qualification process
Maintaining QSL Approval Status	<p>Upon qualification, suppliers listed on the QSL must ensure that:</p> <ul style="list-style-type: none">• Report any events that may affect quality or performance of product, or potential impact to the purchase order, to the Patria BEC Quality; includes changes in ratings/certifications, QMS ownership, location, or management.• Provide updates of certifications, capability lists and operations specifications (if applicable)• Complete the survey that characterizes the current state of the supplier organization when requested. If the Survey is not completed in a timely manner, a physical audit will be scheduled.• Maintain performance expectations with respect to Supplier Escapes, On-time delivery, etc. A full list of current measured characterizations can be supplied upon request• Retain quality records for as required.• Must comply with all stated terms and conditions listed on the PO or Contract, as applicable.
Removal from the QSL	<p>A supplier may be removed from the QSL if one of the following happens:</p> <ul style="list-style-type: none">○ Refusal to submit to an audit when requested○ Lack of action to address quality performance issues○ Violations of the terms and conditions○ Violations of the local and US export laws○ Falsification of data○ Failure to provide updated Certificates (if applicable)
Performance Surveillance	Patria BEC will regularly evaluate the supplier's performance and risks. If the evaluation results do not met the expectations, appropriate actions will be taken (close follow up, on site audit, ...)

CHAPTER III PRODUCT REQUIREMENTS

Provided product/service The purchase order will contain the requirements regarding the product or service to be provide including the identification of relevant technical data applicable.

Release to service document For EMAR accredited organization, an Authorized Release Certificate (EMAR Form 1) shall be provided in accordance with the regulation.

For all other organization, a Certificate of Conformance (CoC) shall always be issued for the work performed to release the product.

The Certificate of conformity (CoC) must contain the following:

- The supplier name and address
- The unique CoC number or identifier
- The number of page of the CoC *if higher than one*
- The customer name
- The purchase order number
- The contract number *if applicable*
- The quantity
- The reference to any non-conformance / deviation***
- The item designation, reference and serial or batch number (when applicable)
- For repaired item, the detail of work performed and the reference to the approved technical data used to perform this work including the TO paragraph and the work package. Revision of the technical data shall also be mentioned.
- The name, date, signature and/or stamp and function of the CoC approver
- The conformity statement specifying the status :
 - ✓ **Serviceable or overhauled** : The item was overhauled or repaired and is compliant with all applicable technical data and can return to service with a full or partial life.
 - ✓ **Inspected**: The item is inspected per technical data
 - ✓ **Repaired**: The item is repaired per technical data **but** additional work is necessary to get the part serviceable.

*** A copy of the approved waiver shall always be provided to PBEC.

Note:

If your organization performed an overhaul for Patria BEC the statement must clearly state the status "*Serviceable/overhauled*" and not just *Inspected and repaired*"

A statement could be something like: "*Part inspected and repaired per technical data xxx; WP xxx and declared serviceable*" or "*Part overhauled per technical data xx; WP xxx and declared serviceable*"

If only the status "*Repaired*" is mention it means, additional work is necessary to get the part serviceable.

Non-conforming product The supplier shall segregate and clearly identify serviceable for unserviceable product at all time. Unless otherwise specified in the purchase order, all unserviceable parts must be returned back to Patria BEC against proper purchase order and shall be appropriately identified / tagged. This unserviceable material cannot be inter-mixed with serviceable material and accompanying report must indicate the condition and the applicable technical data section to which the product cannot be repair.

Escape	<p><u>Supplier Escapes</u></p> <p>Escapes from the Supplier Quality System found at a Patria BEC facility are considered Supplier Escapes.</p> <p>These get measured as one characteristic to determine Quality performance of a supplier.</p> <p>A Supplier Discrepancy Report (PVRF) will be issued to the supplier along with a Contractor Corrective Action Request form for the determination of Root Cause and Corrective and Preventative Action(s).</p>
	<p><u>Customer Escapes</u></p> <p>There are times that Patria BEC does not and cannot determine the acceptability of the Maintenance, Preventative Maintenance or Alterations contracted to the Supplier. In this case an escape from the Suppliers Quality System would be detected at Patria BEC's Customer. These are reported as Customer Escapes. As per supplier escape, a Supplier Discrepancy Report along with a Contractor Corrective Action Request form for the determination of Root Cause and Corrective and Preventative Action(s).</p> <p>Feedback to the Contractor Corrective Action Request shall be provided according to the deadline defined in the request.</p>
FOD prevention	<p>Suppliers shall provide services with the highest degree of safety and shall identify hazards in its operating environment and manage the associated risks.</p> <p>Suppliers shall guarantee the appropriate level of training to the relevant persons regarding product safety</p> <p>Product safety issue (FOD) on Patria BEC items shall be reported to Patria BEC Quality.</p>
Counterfeit and Suspected Unapproved Parts prevention	<p>Supplier shall implement an appropriate process to prevent the use of counterfeit or unapproved parts.</p> <p>Supplier shall train the appropriate persons in the awareness and identification of suspects' parts.</p>
Personal qualification	<p>The personnel performing the work must be qualified.</p> <p>Nondestructive testing operators shall be qualified in accordance with standard NAS410 or standard EN41079.</p> <p>✓ Eye examination</p> <p>Eye exams shall be conducted on a regular basis by medically qualified personnel for all inspectors conducting visual inspection and welders, as applicable. (Typically Jaeger #1 @12", Jaeger #2 @ 16", Snellen 20/25 @ 16", and Ortho-Rater 8)</p>
Personnel awareness	<p>The supplier shall ensure than the personnel performing the work is aware of:</p> <ul style="list-style-type: none"> • their contribution to product or service conformity; • their contribution to product safety; • the importance of ethical behavior;
Occurrence reporting	<p>The supplier shall have an occurrence reporting system to enhance the safety through the collection of reports on actual or potential safety deficiencies.</p> <p>The occurrence reporting system shall includes;</p> <ul style="list-style-type: none"> ▪ Immediate action ('recall' procedure) for errors, near misses or hazards affecting the safety of a component that has already been released / delivered; ▪ A commitment to cooperate with all appropriate organizations for the purpose of occurrence investigations.

CHAPTER IV FIRST ARTICLE INSPECTION REQUIREMENTS

Introduction Supplier must submit a First Article Inspection (FAI) to demonstrate the ability to perform the requested work per the Approved Technical Data.

Applicability This 1st article package will be performed if the supplier is performing a repair or production (Work Package Paragraph, TCTO, drawing, etc.) under any of the following conditions:

- 1- The vendor/fabricator is performing a first time orders for Patria BEC
- 2- The vendor/fabricator has not performed the repair / production within the previous two years,
- 3- There has been a change that affects form, fit or function, or
- 4- There has been a significant change to any of the processes performed by the vendor / fabricator or subcontractor (i.e., revision to tech data, new equipment, equipment relocated, new subcontractor, etc.).

FAI Package The supplier 1st article must contain :

- The Router Sheets showing feature inspected, acceptance/rejection criteria used, and results.
- NDI results presented in the router with acceptance/rejection criteria used and results.
- Critical process operation sheets
- Training records personnel performing the critical & NDT processes
- All dimensional inspection sheets (CMM data, etc.) which are clear to read and easily linked to the router.
- produced and any feature and dimension affected by the work performed.
- Surface finish measurements required by the repair, including when surface is later covered by a coating or surface treatment.
- Reference of the applicable approved/acceptable technical data including acceptable methods and practices i.e. SPOP, SPS, etc.
- Documentation of dimensional data prior to peening unless technical data specifies dimension after process.
- Any/All sub-vendor process sheets and Certificates of Conformances
- If source demo, the USAF letter of approval

The 1st article package must be send by email to the quality department at following address: quality@bec.eu.com.

If the package contains technical data it has to be marked on the concerned documents.

In addition to completing and submitting the supplier FAI documentation, the package must be addressed to the Quality Department and be marked "1st article Review Required".

Notes: A FAI is required for every repair paragraph applicable in the repair work packages called in the purchase order. If not all applicable paragraphs are performed on the 1st part, an additional partial FAI should be provided as soon as the missing repair paragraphs are applied.

This partial FAI should contain the elements to cover the additional paragraphs as per requirements describe above.

Family FAI FAI requirements may be satisfied by a previously approved FAI performed on identical characteristics of similar parts produced by identical means:

- Unique subcontractor for the all family
- Same materials, repair processes, means,
- Identical sources and subcontractor if any

Selection of the family should be done in accordance with Patria BEC quality

CHAPTER V SPECIAL PROCESSES REQUIREMENTS

Introduction As required in AS/EN91XX series, for processes where the resulting output cannot be verified by subsequent monitoring or measurement, (i.e special processes) arrangements shall be established including, as applicable:

- definition of criteria for the review and approval of the processes;
- determination of conditions to maintain the approval;
- approval of facilities and equipment;
- qualification of persons;
- use of specific methods and procedures for implementation and monitoring the processes;
- requirements for documented information to be retained

Supplier shall comply with these requirements.

Example of special processes (list not exhaustive): Coating, chemical cleaning / stripping, peening, blasting, paint, dye film coating, non-conventional machining, NDT, welding, riveting, heat treat, rubber, plasma, ...

Special process qualification requirements The supplier shall qualify the special process before implementing it on product.

The qualification shall demonstrate the capability and repeatability of the process.
Records of the qualification shall be kept by the supplier and be available for review by Patria BEC.

The supplier is free to set up its own qualification process as per AS/EN91XX series requirements.
[Appendix 1](#) provide guidance about special process qualification and can be use if needed. It give a list of typical topics usually reviewed during a qualification process and the typical content of the qualification record package.

Note: A Nadcap accreditation covers the qualification requirements.

Monitoring Once a special process is qualified, the supplier shall monitor the following points:

- Changes to the documentation,
- Maintenance and calibration of equipment subject to qualification
- Operators' qualification and certification,
- Compliance to the requirements of consumable,
- Continuous compliance of the process (per probe, ...)

Any deviation must be managed and recorded.

Modifications Any change to the requirements or the process shall trigger the requalification of the process.

CHAPTER VI RECORD RETENTION REQUIREMENTS

Introduction	Patria BEC suppliers shall comply with the following requirements unless more stringent requirements are required by contract:
Maintenance records	Fifteen (15) years minimum <ul style="list-style-type: none">• Completed and stamped routers proving the work performed
Other Maintenance and Quality System records including Significant Escape Events information	Ten (10) years minimum <ul style="list-style-type: none">• Supplier documentation including purchase orders, COC's and shipping documentation• All production paper work instructions, charts, furnace charts and/or product documentation/worksheets.• Operation buy-off, data collections, work instructions, redlines, over-inspections, operator symbols and record.• Detailed work instructions which may be in another electronic media and/or paper format and are not stored permanently.• Scrap disposition summary• X-rays or other product inspection results (paper, media and/or electronic format)• Production software and/or software revisions• Purchase or Sales Orders (internal and customer)• Investigations (regulatory, customer, internal, etc.)• Significant Escapes investigation packages including DIVE's and final customer communication• High Impact events investigation packages
Audits, general escapes, Corrective & Preventative Action, general documentation	Five (5) years minimum <ul style="list-style-type: none">• External Audit results including Regulatory and Quality System Audits (internal/external, 3rd party)• DIVE's and Corrective Action Requests (CAR's)• Non-significant escapes and related information including the investigation and final customer communications
Records recovery	If required by Patria BEC, records shall be provided in a 2 working days period.
Records destruction	The Supplier is authorized to destroy records regarding Patria BEC orders but it shall guarantee that: <ul style="list-style-type: none">○ records are destroyed in accordance with pre-determined conservation periods,○ destruction of records is traced, irreversible, confidential and secured

Appendix 1 – Guidance for Special process qualification process

❖ Qualification Process

The elements listed below represent the typical topics usually reviewed during a qualification process

a) Documentation

Keep the necessary documentation available and up to date.

The documentation shall identify the operating steps, the equipment, the consumables, the parameters which have an impact on compliance, the measurement to record and archiving requirements.

b) Operators

The operators shall have the appropriate skills and capacities. The operators shall be formally qualified to the corresponding specification.

Nondestructive testing inspectors shall be qualified in accordance with NAS410 or EN4179.

c) Consumables

The consumables shall comply with the requirements (including the purchase, incorporation, identification, storage, conservation and usage).

d) Equipment

The equipment shall be Identified, calibrated and maintained.

The calibration standards shall be compliant with specifications and traceable to national calibration masters.

The calibration shall be performed by certified organizations to the appropriate standard.

e) Demonstration of results

The required characteristics shall be validated on parts or probes, under conditions representative of the production processing conditions.

Laboratory tests shall be carried out by of certified/qualified laboratories.

f) Environment

The specific environmental characteristics (like temperature, humidity, pressure,...) needed to ensure the compliance to the requirements needs to defined, monitored and ensured.

❖ Qualification package:

The qualification package shall contain, as applicable, all the elements listed above.
