1. The External Provider Handbook

1.1 Introduction

The purpose of this external Provider Manual is to improve the relationship between PDB and its external providers.

Thus, this Manual represents and documents the system used between The PDB and its external provedor aiming, in addition to safety in the project, development, production, special processes, installation and assistance of our products, to contribute to the success of the business.

We are fully aware of the importance of applying the requirements contained in this Manual and therefore we expect the total commitment of external provedores in obtaining and supplying processes, products and services that meet the levels of performance, safety, quality, reliability and costs required.

1.2 Goal

Assess the potential of the Quality Management System applied by the external provider, qualify it according to the requirements required by the PDB and develop it in order to meet the requirements of ISO 9001, *AS9100* or other standard approved by the PDB.

This system should ensure the detection of any non-conformities during the development and manufacturing process, focus on quick and effective corrective actions aimed at improving and ensuring delivery of products according to the specified requirements.

With this this Manual aims to improve the communication between the PDB and its external providers directing the same in each situation.

2. Developing external providers

External providers are approved for specific *processes, products and services*, through the completion, analysis and approval of the External Provider Evaluation Questionnaire (QAPE) - Form. 007 and included in the List *of* Approved Externos Providers - Form. 006, maintained under the responsibility of Quality.

Note 1: The QAPE is completed through visits to the provider or interview by the PDB.

It is established as a criterion for approval of an external provider, meeting at least 80% of the applicable requirements of the QAPE. If the external provider does not reach this index, and is considered strategic for the PDB, it may be conditionally approved for a maximum period of six months, which ends this period, a new evaluation must be carried out.

In order to mitigate the risks of supply in completing the EQ, issues of the quality, development, financial and commercial sectors are also analyzed.

2.1 Laboratory requirements

External calibration, metrology and testing provedores are considered suitable provided that the laboratories are certified according to ISO/IEC 17025, national equivalent as INMETRO, RBC, RBLE or that a second-party audit is evidenced that meets the requirements of ISO/IEC 17025 or national equivalent.

2.2 Validation of processes

Special procedures are critically reviewed and approved in accordance with the requirements of the applicable standards.

2.2.1 Process controls and revalidation

The control and revalidation of the process is the responsibility of the external provider and must meet the requirements of the *specific standard and drawings.*

PDB conducts special process audits annually to ensure that all requirements are being met and revalidates these processes.

2.3 Right of access

PDB, its customers and regulatory authorities shall have the right of access to the applicable areas of the facility and the applicable documented information at any level of the supply chain.

2.4 Notifications of changes

The external provider must notify the PDB of changes to products and processes, including changes from its external or manufacturing site providers, and obtain Approval from the PDB.

3. Documented **information control retained by external aerospace providers**

Documented information created to control PDB processes, products, and services should be retained by external providers to provide evidence of product compliance for a minimum of ten (10) years.

Note: For special controlled parts, software or serial parts previously declared by the PDB, the records must be kept for at least 20 years;

The external provider must determine controls required for identification, storage, protection, retrieval, retention, and arrangement of records.

They should be available for critical analysis by the PDB, by our customers, aeronautical authorities, approval agencies and/or representatives of approval agencies.

It is the responsibility of the external provider to keep the documents of external origin, that is, standards and drawings in their current reviews.

NOTE: When the standard or design is of international origin it is the responsibility of the external provider to purchase and maintain it in its current review. When the standard is the Embraer customer and the external provider does not have access to the standards portal, the external provider must notify the PDB of the need for the updated standard or design, and the PDB will provide an uncontrolled copy.

The system of control of documented information should follow the criteria of *AS 9100* or ISO 9001.

4. Performance evaluation

Monthly Quality performs an analysis of the supplies of the period, aiming to determine the performance of external providers considered qualified and update the External Provider Quality Index Chart - Form. 029.

To measure the performance of external providers, Quality calculates the Quality Index (IQ) as below:

IQ = (QP X3 + QL X 7) / 10

QP = Quality on delivery time.
QL = Quality in the supplied batch.

Quality on time

QP = 1 - (A : B)

A = Quantity of items delivered out of time.
B = Number of items delivered on time.

Quality in batch supplied

QL = 1 - (C : D)

C = Number of rejected items.
D = Number of items delivered.
The maintenance of external providers in the Approved Externo Provider List – Form. 006 can also be done from data resulting from IQ.

The judging criteria for this performance evaluation are:

IQ: > 90%: Excellent external provider
90% ≥ IQ > 80%: Good external provider
80% ≥ IQ > 60%: Regular External Provider
IQ ≤ 60%: Bad External Provider (Exclude from Approved External Provider List)

5. Non-conforming material

5.1 Detection in PDB

When non-compliant material or service in PDB Receive Inspection is detected, Quality communicates non-compliance to the external provider through the NNC Form Notification. 022. Nonconforming material is identified with nonconforming item label, the external provider must respond to NNC at the given time and forward to PDB quality.

5.2 Detection in the external provider

The external provider must submit all non-conformities for critical disposal and analysis and approval of the PDB. In case of non-compliant product analysis, only the PDB can make the state approved available or request rejobs that can change the design specifications. The external provider must send via email the record of the action taken. Every non-conforming part must be identified, protected, segregated in a restricted area and even when it is a product under concession or production on an advanced character awaiting reports, this product must be identified and sent to the PDB so that upon receipt this condition can be identified.

6. Identification and traceability

In order to maintain the traceability of the products and records used, the identification of them throughout the process carried out at the external provider must be maintained until the item is re-sent to the PDB.

7. Preservation of the product

The product must be preserved during the external provider's process, providing conditions for handling, packaging, storage, cleaning protection, prevention detection and removal of foreign objects, special handling for sensitive products and shelf stay control.

8. Products with shelf life.

Raw materials or products purchased with shelf life, will only be accepted with a useful life ≥ 80%.

9. Counterfeit parts

Counterfeit parts – An *unauthorized copy, imitation, substitute or modified part (e.g. material, part, component), which is intentionally misrepresented as a specified genuine part of an original or authorized manufacturer.*

NOTE: Examples of a false part may include, but are not limited to, false marking or labeling identification, category, serial number, bar code, documentation, or performance characteristics.

The external provider must prevent the use or purchase of counterfeit parts, through a process of purchasing products or services, checking the items received as appropriate, purchasing external provider products or services previously qualified by the organization itself, this is necessary so that pdb aerospace is not delivered products or counterfeit parts.

When PDB Receive Inspection detects material or parts suspected of counterfeiting or counterfeiting, Quality communicates non-compliance to the external provider through the NNC Form Notification. 022. Non-compliant material is identified with non-form item label. 025, the external provider must respond to NNC at the given time and forward to PDB quality.

If after the mitigation of the problem it is found that there was actually supply of material or counterfeit part the external provider will be disqualified and the appropriate procedures will be carried out, such as informing the interested parties (e.g. end customers, certifying body of the external provider, consumer protection police station, ANAC and etc).

The note of the material or product will not be paid and the counterfeit item will not be returned in order to prevent re-entry into the add-in chain.

The external provider may suffer appropriate actions as described in Art. 184 of the Penal Code - Decree Law 2848/40.

10 - Direct and secondary external provider controls

External providers should apply appropriate controls to their direct and secondary external providers to ensure that requirements are met.

When necessary, external providers must deploy to their external providers the applicable requirements, including the requirements of PDB AEROSPACE and its customers.

External providers designated or approved by PDB AEROSPACE or its customers, including process sources (e.g. special processes) should be used when required when required.

11 - Samples and tests

When needed the external provider should provide test samples for design approval and development, inspection, verification, investigation, or auditing.

12 - Human resources

The external provider must ensure that people are aware of:

- your contribution to the conformity of the product or service;

- your contribution to product safety;

- the importance of ethical behavior.

13 - Production control and service provision

13.1 Amount of manufacture.

The external provider must manufacture only the quantity indicated in the purchase order sent by PDB, leftovers of raw material must be returned along with the manufactured material.
In case the material supplied for manufacture is smaller or divergent, the external provider must report to the PDB before production begins.
Product delivered with divergent quantities of the purchase order may have the invoice refused on the PDB receipt.

13.2 - Measurement and Monitoring of PDB Product.

The external provider shall draw up an inspection report, with the results of visual and dimensional inspections of all manufactured parts. The inspection report must be archived on the external provider according to item 3 and a copy sent to PDB.

13.3 GD&T-quoted drawings:

- *The external provider shall have all appropriate means to inspect the characteristics specified in the design and standards*
- *Use three-dimensional measuring machine compatible with the dimensions and tolerances specified in the parts to be manufactured, as well as the resources necessary for the measurement of system line, geometric shape, and other design specifications.*
- *The external provider should not inspect thicknesses, souls (base) and side walls of complex parts in the three-dimensional measuring machine or using the caliper, and it is necessary to have the instrument for measuring thicknesses (e.g. ultrasound), thus allowing measurement at various points along the part.*

13.4 Inspection Report:

- *The external provider shall indicate the type and number of the instrument used in the inspection of the characteristics, also informing the tolerance.*
- *The measurement with the use of three-dimensional should be evidenced, where applicable. Three-dimensional machine reports for GD&T must be filed according to item 3 for analysis when requested, and a copy attached and sent to PDB.*
- *For lightning measurement, the external provider may use the radius gauge provided that the manufactured parts are checked at the nominal value of the specified radius and also in their tolerance field.*
- *The external provider should inspect and highlight:*
  - *100% of the dimensions indicated in the drawing;*
  - *Characteristics not indicated in the design, but indicated in the standards relevant to the manufactured PN (e.g. warping, roughness)*
  - *The basic dimensions (used for inspection of geometric tolerances) do not apply to this case, and their registration is optional.*
  - *Information indicated in the design legend as roughness.*
    - *Thread Inspection with suitable instrument.*

Note: *The external provider should not use "PASS-DO NOT PASS" calibrators in the final inspection of internal and external diameters as well as thread inspection should not be performed with the manufacturing tools.*

Modelo de Relatório

Identificação da Empresa	MODELO - RELATÓRIO DE INSPEÇÃO	Data: 1	N° 4
		Revisão: 2	
		Folha: de 3	

PN PDB nº 5	Qtde. 7	ORDEM: 8
Código PDB: 6		
Matéria Prima: 9		

REVISÃO DESENHO: 10

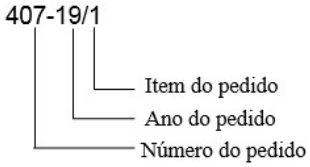
INSPEÇÃO VISUAL
11

INSPEÇÃO DIMENSIONAL						
Referência	Especificado	Tolerância	Encontrado		Instrumento utilizado	
			Mínimo	máximo	Tipo	Número
INSPEÇÃO ANTES TRATAMENTO (S)						
12	13	14	15	16	17	18

Observação: 19	
Inspetor: 20	Laudo: 21

a) Instructions for completing the Inspection Report

1) *Date of issue of the report;*
2) *Review of the report (control of external provider revisions);*
3) *Number of pages of the report;*
4) *No. of the report;*
5) *PN manufactured;*
6) *PDB code of the manufactured PN;*
7) *Qtde of approved parts;*
8) *Manufacturing order number (Order PDB) identify which order item Ex. 407-19/1; 407-19/2*



9) *Raw Material used;*
10) *Review of the design used;*
11) *Visual inspection report;*

b) Dimensional inspeção (before treatment):

12) *Reference number of the dimension in the drawing or inspection plan;*
13) *Dimension specified in the drawing or standard;*
14) *Tolerance specified in the drawing or standard;*
15) *Minimum size found in the inspected lot;*
16) *Maximum dimension found in the inspected lot;*
17) *Description of the instrument used in the measurement;*
18) *Number of the instrument used in the measurement;*
19) *Indicate the difference of approved parts x requested parts. (EX: partial lot, complementary lot, scrap parts, etc.) and all deviations related to the manufactured PN.*
20) *Signature or stamp of the inspector or responsible for Quality. NOTE: In the case of electronic signature, its use must be clearly identified together with the signature.*
21) *Final report of the inspected batch.*

Review History

Revision	Page	Change Description	Accountable
01	01,02, 03, 05, 06	Req 1.2 and 3 – revision of the standard for AS9100 / Req 2.2.1 inclusion of "specific standard and design" / inclusion of tens 9, 10, 11 and 12.	William A. Santos
2	All	Updated documented information language, human resources. Added the item production control and service provision. Changed the word vendor to external provider, included information in the footer for the current revision query.	Geruza Muniz