

FAA – ANAC - EASA Bilateral Considerations related to FAA PMA (Parts Manufacturer Approval) & EASA EPA (European Part Approval)

Each authority handles these two certification paths with varying degrees of integration. The table below highlights the specific equivalents used by TCAA and ANAC, which often mirror FAA logic but use different regulatory nomenclature.

Comprehensive Equivalency & Identification

Authority	STC (Modification)	PMA Equivalent (Replacement)	Part Marking	Release Form
FAA	STC	PMA	FAA-PMA	8130-3
EASA	STC	EPA (via Minor Change/STC)	EPA	EASA Form 1
TCAA	STC	PDA (Part Design Approval)	PDA	TCCA Form One
ANAC	STC	CPAA (Certificado de Produto Aeronáutico Aprovado)	P/N + Ref	F-100-01

EASA EPA (European Part Approval): Often more restrictive. EASA prefers parts to be linked to a design approval (like a Minor Change or STC) rather than a standalone "generic" approval.

ANAC COP (Certificado de Organização de Produção): Brazil’s system is robust due to the Embraer ecosystem. A COP ensures the facility can replicate the design, but for a part to be exported, it must meet the **Bilateral Aviation Safety Agreement (BASA)** requirements of the destination country.

A **Part Design Approval (PDA)** is the Canadian equivalent of an FAA PMA, issued by **Transport Canada Civil Aviation (TCCA)**. It grants a manufacturer the right to produce replacement or modification parts by certifying that the design meets specific airworthiness standards. Under the **FAA-TCCA Bilateral Aviation Safety Agreement (BASA)**, a PDA is generally recognized for installation on U.S.-registered products, provided it is not for a critical component.

The Legal Framework: BASA and TIP

The acceptance of FAA Parts Manufacturer Approval (PMA) by EASA is governed by the Technical Implementation Procedures (TIP) for Airworthiness and Environmental Certification, currently at Revision 6 (with Revision 7 elements entering the ecosystem).

The foundational document is the Bilateral Aviation Safety Agreement (BASA) between the U.S. and the EU. The TIP provides the granular "how-to." Under Section 3.3.4 of TIP Revision 6, EASA directly accepts FAA PMA parts "without further showing" if specific conditions are met.

Key Concept: If a part meets the TIP acceptance criteria, it is considered to have an EASA design approval (equivalent to an EPA - European Part Approval) without EASA issuing a separate certificate.

Standards of Acceptance

The acceptance criteria are bifurcated based on whether the part is a "Critical Component" and the method of FAA approval (Identity vs. Test & Computations).

A. Non-Critical Components (Direct Acceptance)

EASA directly accepts FAA PMA for non-critical components under the following conditions:

- Approval Method: Approved via Identity (without licensing agreement) or Test Reports and Computations per 14 CFR § 21.303.
- Documentation: The part must be accompanied by an FAA Form 8130-3.
- Required Statement: The "Remarks" block (Block 12) must state: *"This PMA part is not a critical component."*

B. Licensed PMA Parts (Direct Acceptance)

If the PMA part is produced under a licensing agreement from the TC or STC holder:

- Condition: The TC or STC must have been validated by EASA.
- Required Statement: The "Remarks" block must state: *"Produced under licensing agreement from the [TC/STC] holder."*
- IPC Reference: If the part is listed in the TC holder's Illustrated Parts Catalog (IPC), this provides additional evidence for acceptance.

C. Critical Components (Validation Required)

The Authoritative Definition - According to TIP Revision 6, Section 1.7(k), a "Critical Component" is defined as follows:

"A part identified as critical by the design approval holder during the certification process or by the exporting authority during the post-certification activities. Typically, such components include parts for which a replacement time, inspection interval, or related procedure is specified in the Airworthiness Limitations section or Certification Maintenance Requirements of the manufacturer's maintenance manual or Instructions for Continued Airworthiness."

Crucially, it further specifies that for the purposes of the FAA-EASA agreement:

"A critical component is a part for which the failure of which could prevent continued safe flight and landing and/or result in a catastrophic failure condition as defined in 14 CFR 25.1309 or CS 25.1309."

Direct Reference: Acceptance Standards per TIP 3.3.4

The "Non-Critical" Requirement (TIP 3.3.4.1)

EASA accepts FAA PMA parts without further showing for non-critical components if they are:

- Identity: Based on a licensing agreement (TIP 3.3.4.1(a)).
- Test & Computations / Identity (without license): Based on FAA Part 21.303, provided the part is not a critical component (TIP 3.3.4.1(b)).

The Verification Requirement (The "Block 12" Rule)

The "Standards of Acceptance" are operationalized through the FAA Form 8130-3. For the part to be accepted by an EASA-regulated entity, the FAA PMA holder must include a specific statement in Block 12 (Remarks).

If the part is approved via Test & Computations/Identity (No license), the 8130-3 must state:

"This PMA part is not a critical component." *Source: TIP 3.3.4.1(b)(ii)*

Critical Components (TIP 3.3.4.2)

If the part meets the definition of a "Critical Component" (per Section 1.7), it is excluded from direct acceptance. The standard here is:

- The part must be approved by EASA validation (usually resulting in an EASA STC).
- The 8130-3 must reference the EASA STC number in Block 12.

Comparison of Acceptance Logic

Feature	Non-Critical PMA (T&C)	Critical PMA	Licensed PMA
EASA Status	Automatically Accepted	Requires Validation	Automatically Accepted
Regulatory Path	TIP 3.3.4.1(b)	TIP 3.3.4.2	TIP 3.3.4.1(a)
Required Data	FAA Form 8130-3	EASA STC / Validation	FAA Form 8130-3
Block 12 Text	"Not a critical component"	Reference to EASA Validation	"Produced under licensing agreement"

Criticality for Engines and APUs - EASA Part 21.A.303 and the related CM-21.A-P-001 (Certification Memo) further tighten these standards. If the PMA part is for an engine or APU and is deemed "critical" (e.g., life-limited parts or parts whose failure could lead to an uncontained failure), EASA maintains a much more rigorous "Level of Involvement" (LoI) than for standard airframe components.

- PMA via FAA STC: Accepted only if EASA has validated the underlying FAA STC.
- PMA via Identity/Computations: Does not qualify for direct acceptance. The applicant must apply to EASA for an EASA STC to validate the design.

Comparison Table: Acceptance Matrix

Part Type	Approval Path	EASA Action	Required 8130-3 Statement
Non-Critical	Test & Computations / Identity	Direct Acceptance	"This PMA part is not a critical component."

Part Type	Approval Path	EASA Action	Required 8130-3 Statement
Non-Critical	Licensed (TC/STC)	Direct Acceptance	"Produced under licensing agreement from holder of [TC/STC #]."
Critical	FAA STC	Validation Needed	EASA STC Number must be referenced.
Critical	Test & Computations	Full Validation	Requires separate EASA STC application.

"Minor" vs. "Major" Repairs

Under TIP 3.2, Minor Changes and Minor Repairs approved by the FAA (or a DER) are automatically accepted by EASA for U.S. State of Design products.

- If a PMA part is used as part of a Major Repair, the data must be substantiated by an FAA Form 8110-3 or an FAA letter.
- EASA expects that the installer (the Part 145 organization) verifies the eligibility of the PMA part for the specific tail number/engine serial number before installation.

Potential Pitfalls: Form 8130-3 "Status"

A common point of friction for SMEs is the Export Power of Attorney. While the TIP allows for direct acceptance, the physical Form 8130-3 must be marked as a "New" part in Block 14. If the form lacks the specific "Not a critical component" verbiage, EASA-regulated MROs are legally required to reject the part, regardless of its actual technical merit.

Issues & Challenges: The "Transfer" Friction

The most significant issues arise when an aircraft moves between these jurisdictions, particularly from an FAA/TCAA environment into an EASA one.

The "Critical Component" Wall

EASA's acceptance of FAA PMA parts is governed by the Technical Implementation Procedures (TIP).

- Challenge: EASA automatically accepts PMA for non-critical parts (e.g., a cabin latch). However, for Critical Components (parts whose failure could cause a catastrophic event, like engine rotating parts), EASA requires the PMA to be based on an STC that they have validated.

The Lessor "Universal Donor" Conflict

Leasing companies (GECAS, AerCap, etc.) are the primary gatekeepers against PMA usage.

- The Problem: A lessor wants an aircraft to be a "Universal Donor." An all-OEM aircraft can be placed with any airline in the world many of whom have internal "No PMA" policies.
- The Conflict: If an airline saves \$2M over five years using PMA parts, the lessor may lose \$5M in residual value because the aircraft is no longer "clean" for the next global tenant.

Benefits: Strategic Leverage & Fleet Longevity - Despite the paperwork hurdles, the existence of these non-OEM paths is vital for the health of the global fleet.

Cost and Negotiation Leverage - Price Competition: PMA/PDA/CPAA parts are typically 30% to 60% cheaper than OEM spares.

- The Gap: When an OEM stops producing parts for an older aircraft type (e.g., Boeing 727 or early 737 Classics), the supply chain would collapse without STC and PMA holders.
- The Benefit: Third-party manufacturers use Reverse Engineering (Test & Computation) to keep these fleets airworthy, preventing premature "scrapping" of viable assets.

Key Takeaways for Global Operations - TCAA (Canada) & FAA: These are the most harmonized. A Canadian PDA is treated almost identically to a US PMA due to deep-rooted bilateral trust.

- ANAC (Brazil): Highly respected for Embraer components. However, a Brazilian CPAA part for a Boeing aircraft may face more scrutiny in Europe than an FAA PMA would.

- Interiors vs. Engines: The industry is generally moving toward accepting EPA (EASA) or PMA (FAA) parts in the cabin (interiors), but the "Hard Life" engine parts remain a battleground for OEMs and Lessors.

Case Study Example - *"Can I install a Brazilian-made part on a US-registered aircraft maintained in Europe?"* we follow the **Traceability Triangle**:

Step	Requirement	The Potential Issues Explored
Design	Does the FAA recognize the ANAC design approval?	If it's a "Critical Component," the FAA may require a specific validation of the Brazilian data.
Production	Was the part made under an approved COP/PMA?	The manufacturing facility must be listed or recognized under the BASA.
Maintenance	Is the installer an EASA Part 145 or FAA Part 145?	A European shop can maintain a US aircraft, but they must issue a Dual Release (EASA Form 1 and FAA 8130-3).

"Dual Release" Issues

For a part to move seamlessly between the US and Europe, it ideally needs a **Dual Release**.

- **The Issue:** If a part is harvested from an aircraft in Brazil (ANAC) and only carries a Brazilian Form F-100-01, an EASA-regulated airline cannot legally install it without a "re-certification" process, which is often impossible for used parts.

Suspected Unapproved Parts (SUPs)

In the rush to solve supply chain gaps, "grey market" parts enter the fold.

- **The Concern:** Documentation that looks legitimate but lacks a verifiable "back-to-birth" (BTB) history. For lessors, a break in the BTB chain for a life-limited part (LLP) reduces the part's value to zero.

The "Technical Implementation Procedure" (TIP) Friction

The TIP is the "rulebook" for how the FAA and EASA talk to each other.

- **The Conflict:** Even if the TIP says a part is "accepted," a local inspector in Germany might interpret "Critical Component" differently than a technician in Florida.

EASA EPA & ANAC

Under **TIP Section 3 (Acceptance of Design Approvals)**, EASA and ANAC have established a high degree of "Reciprocal Acceptance." This means the importing authority (ANAC) acknowledges the exporting authority's (EASA) issuance as having the same validity as its own, without requiring a separate validation project.

Standards for EPA Acceptance by ANAC:

- **Minor Changes/Repairs:** ANAC automatically accepts EASA-approved minor changes and minor repairs. If the EPA part is the result of an EASA-approved minor change, no further ANAC validation is required.
- **Non-Critical Replacement Parts:** Similar to the FAA-EASA TIP, ANAC accepts EPA parts for non-critical components based on the EASA design approval (STC or Minor Change) and the production oversight of the EASA Part 21 subpart G organization.
- **Critical Components:** If the part is a **Critical Component** (defined in TIP 1.7 as having potential catastrophic failure consequences), it is excluded from "Direct Acceptance." ANAC requires a **Validation** process, which may be "Streamlined" or "Technical" depending on the complexity.

Marking and Documentation Standards

To facilitate this relationship, the documentation must be precise. An EPA part entering the Brazilian registry must be accompanied by an **EASA Form 1**.

The "EPA" Marking Requirement

Per **EASA Part 21.A.804(a)**, all parts or appliances approved under a design other than the TC holder's (except for standard parts) must be marked with the letters **"EPA"**. ANAC inspectors and Brazilian MROs (RBAC 145) look for this marking to verify that the part is not a "counterfeit" or unapproved part, but rather a part produced under a valid EASA design approval.

Form F-100-01 vs. EASA Form 1

- **Export to Brazil:** EASA-approved EPA parts must be exported with an **EASA Form 1** identifying the EASA design approval reference (e.g., STC number).

- **Export to Europe:** Conversely, ANAC's equivalent to the EPA/PMA part is often produced under a **CPAA** (Certificado de Produto Aeronáutico Aprovado). These are exported to Europe using **ANAC Form F-100-01**, which EASA accepts under the same TIP provisions.

Comparison of Regulatory Logic

Feature	EASA EPA (Imported to Brazil)	ANAC CPAA (Imported to Europe)
Governing Clause	TIP Revision 5, Section 3.3	TIP Revision 5, Section 3.3
Acceptance Level	Direct (Non-Critical) / Validated (Critical)	Direct (Non-Critical) / Validated (Critical)
Release Document	EASA Form 1	ANAC Form F-100-01
Required Marking	"EPA" + [Part Number]	[Part Number] + [Serial Number]

4. Key Nuance: The "State of Design" Rule

ANAC acceptance of an EPA part is contingent on the **Product's State of Design**.

- If the EPA part is for an **Airbus** (EASA State of Design), ANAC acceptance is highly streamlined.
- If the EPA part is for a **Boeing** (FAA State of Design), the relationship becomes a "Tripartite" issue. Technically, ANAC looks to the **FAA-ANAC IPA** for parts on U.S. products, though they generally recognize EASA's oversight of the EPA holder if the design has been validated.