# FAA & EASA TSO & ETSO Considerations

Sofema Online (SOL) Considers the key differences between FAA TSO & EASA ETSO

## Basic Understanding TSO – ETSO

### FAA: TSO Authorization (TSOA)

- **FAA - TSOA** is A stand-alone approval. It is a combined design and production approval to manufacture an article that meets a specific TSO minimum performance standard (MPS). It does not grant installation approval on any aircraft.

- **EASA:** The equivalent is an ETSO Authorisation (ETSOA) issued under Part 21, Subpart O
    - EASA couples ETSO with organisational design capability shown via DOA (Part 21 Subpart J) or Alternative Procedures to DOA (ADOA/APDOA), and production is under POA (Subpart G) or Subpart F as applicable. So ETSO is not “covered under DOA”, but interlocks with DOA/ADOA and POA.

### The Role of TSO & ETSO Parts

- TSO/ETSO are minimum performance standards for defined article types (avionics, seats, ELTs, etc.). A TSOA/ETSOA means the article’s design meets the applicable standard and the manufacturer has an approved system to consistently produce conforming articles.
- Neither TSOA nor ETSOA is an installation approval. To use the article on a specific aircraft/engine/propeller you still need TC/STC/minor-change approval against that product’s certification basis. (FAA says this explicitly; EASA/TIP materials say the same.)

### Marking

- FAA requires TSO articles to be permanently marked with TSO number, holder ID and P/N;
- EASA requires ETSO marking with holder name/address, P/N/model, SN/DOM, and the applicable ETSO number.

### FAA vs EASA—how the approvals work

**FAA - TSOA = design + production approval.** The holder controls design, quality, and suppliers; FAA can inspect quality systems, facilities, data and tests. A quality manual is required. Minor changes may be made by the TSOA holder; major changes require a new authorization.

- **Installation is separate.** You still need TC/STC/minor-change approval to install on a product.
- **Delegation:** FAA uses ODA (Organization Designation Authorization), including TSOA ODA, allowing qualified organizations to perform certain approval functions on the FAA's behalf.

**EASA (Part 21, Subparts O, J & G)**

- **ETSOA (Subpart O).** The ETSOA holder is responsible for manufacturing (Through Part 21 G Approval) ETSO articles and must meet obligations including DDP (Declaration of Design & Performance), change control (21.A.611), manuals availability, and ETSO marking. Minor changes may be made by the holder; major changes need new authorization.
- **Design capability:** Shown via DOA (Subpart J)—or ADOA/APDOA for specific projects. DOA holders have privileges) to classify and approve certain minor changes/repairs under approved procedures.
- OA interfaces are formalized.
- **Special case (APUs):** EASA materials highlight additional DOA requirements for APU ETSO authorizations.

**Design authority**

- **FAA "design authority" model:** For TSO articles, the TSOA holder is the design approval holder for the article (combined design/production). For aircraft/engine/propeller products and major mods, the TC/STC holder is the DAH. FAA can delegate findings/approvals to ODA organizations (e.g., a TSOA ODA).
- **EASA "design authority" model:** EASA recognizes organizational design capability via DOA. The DOA holder (with named CVEs and a design assurance system) exercises privileges to classify/approve certain minor changes/repairs; for ETSO projects, applicants can use DOA or ADOA procedures. The ETSOA holder is responsible for the article and its documentation, while POA controls production and release.

**Capability**

- **FAA:** A TSOA manufacturer may make minor design changes without prior FAA approval (must keep the original model designation and provide revised data); major changes require a new authorization.
- **EASA:** an ETSOA holder may make minor design changes without further EASA authorisation (subject to data transmittal and traceability); major changes require a new ETSOA application.

**Cross-Acceptance**

- Under the FAA–EASA framework, reciprocal acceptance of TSOA/ETSOA is established: FAA accepts EASA ETSOA and vice-versa without issuing a duplicative LODA/ETSOA, streamlining transatlantic approvals. Technical Implementation Procedures (TIP) emphasizes that TSO/ETSO does not imply installation approval.

**Practical Differences**

- **Approval type:** FAA's TSOA inherently covers design + production; EASA's ETSOA is an article authorization that is integrated with DOA/ADOA (design capability) and POA for production.
- **Delegation model:** FAA uses **ODA**; EASA uses **DOA** (no ODA).
- **Change control:** Both allow minor changes by the authorization holder; changes need a new authorization.
- **Installation:** Always separate (TC/STC/minor change).
- **Special cases:** EASA imposes additional DOA conditions for APU ETSOs.

**Additional Considerations**

- FAA TSOA demands a robust quality system & manual; EASA requires demonstration of capability and POA controls.
- Whilst TSO/ETSO isn't installation approval, creating installation instructions & limitations with the product-level certification provides a basis including - wiring, cooling, EMI/EMC DO-160, HMI, safety analyses

**Next Steps**

Sofema Aviation Services (SAS) Provides EASA & UAE GCAA Regulatory Training including the following Logistics Course - https://sassofia.com/course/logistics-stores-inspection-procedures-easagcaa-2-days/ Please see our online website www.sofemaonline.com or email Team@sassofia.com