European Union Aviation Safety Agency

Explanatory Note to Decision 2019/010/R

CS-STAN — Issue 3

RELATED NPA: 2018-10 — RMT.0690

EXECUTIVE SUMMARY

This Decision introduces the following amendments to CS-STAN:

— it provides additional clarification in Subpart A 'General' regarding the use of CS-STAN;

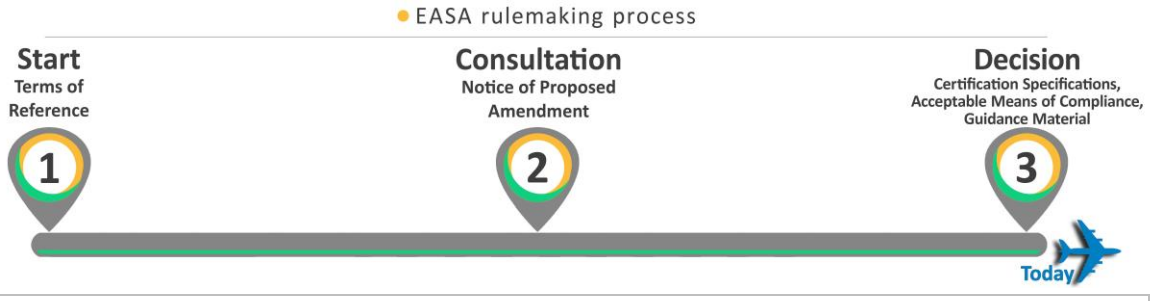
— it introduces new standard changes and updates some existing ones; and

— it introduces new standard repairs and updates some existing ones.

The amendments introduced by this Decision are based on lessons learned during the utilisation of CS-STAN, proposals submitted by stakeholders, and on technological innovations that came from the industry, which can bring safety benefits or allow the implementation of the latest technologies in a cost-efficient manner.

These amendments are expected to provide economic benefits to the general aviation (GA) community by reducing the regulatory burden for the embodiment of changes and repairs in certain aircraft when applying the acceptable methods, techniques and practices included in CS-STAN. These amendments are not expected to have any significant social or environmental impacts.

Action area:	General aviation		
Affected rules:	CS-STAN		
Affected stakeholders:	Operators other than airlines; maintenance organisations (MOs); maintenance engineers or mechanics		
Driver:	Efficiency/proportionality	**Rulemaking group:**	No
Impact assessment:	None	**Rulemaking Procedure:**	Standard



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1. About this Decision

The European Union Aviation Safety Agency (EASA) developed ED Decision 2019/010/R in line with Regulation (EU) 2018/1139[1] ('Basic Regulation') and the Rulemaking Procedure[2].

This rulemaking activity is included in the latest European Plan for Aviation Safety (EPAS)[3] under rulemaking task (RMT).0690. The scope and timescales of the task were defined in the related Terms of Reference[4].

The draft text of this Decision has been developed by EASA.

All the interested parties were consulted through Notice of Proposed Amendment (NPA) 2018-10[5].

309 comments were received from 31 stakeholders, including industry and national aviation authorities.

EASA reviewed the comments received during the public consultation. The comments received and EASA's responses to them are presented in Comment-Response Document (CRD) 2018-10[6] that is published as an appendix to this Decision.

The final text of this Decision with the certification specifications (CSs) has been developed by EASA.

The major milestones of this rulemaking activity are presented on the title page.

1 Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1535612134845&uri=CELEX:32018R1139).

2 EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the 'Rulemaking Procedure'. See MB Decision No 18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by EASA for the issuing of opinions, certification specifications and guidance material (http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure).

3 https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2467

4 https://www.easa.europa.eu/rulemaking-tasks/rmt0690

5 In accordance with Article 115 of Regulation (EU) 2018/1139, and Articles 6(3) and 7 of the Rulemaking Procedure.

6 https://www.easa.europa.eu/document-library/comment-response-documents

2. In summary — why and what

2.1. Why we need to change the CS/AMC & GM

The initial issue of CS-STAN was adopted on 8 July 2015[7], and it contained a number of standard changes and standard repairs (SCs/SRs). The number of SCs and SRs increased in 2017 with the issuing of ED Decision 2017/014/R (CS-STAN Issue 2)[8].

The development of CS-STAN, including its regular update, remains a core element of the EASA strategy to support GA.

By means of this Decision, EASA introduces several new or amended SCs and SRs, as defined in points 21.A.90B and 21.A.431B of Annex I (Part 21) to Regulation (EU) No 748/2012[9].

The ultimate goal is to support the operation of GA aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft when applying the acceptable methods, techniques, and practices of CS-STAN.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of Regulation (EU) 2018/1139. This Decision will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 2.1.

The specific objective of this Decision is to support GA in Europe by reducing the administrative burden for aircraft modifications/repairs, and to promote safety.

2.3. How we want to achieve it — overview of the amendments

The new and amended SCs/SRs introduced with this Decision contain acceptable methods, techniques, and practices for identifying and carrying out SCs and SRs in certain aircraft without a design approval.

The most significant changes introduced by this Decision are listed below:

SUBPART A

— **CS STAN.05 CS-STAN Embodiment of current SCs/SRs (new)**

Since several existing SCs/SRs are subject to amendments/improvements as part of the CS-STAN evolution process, this new paragraph has been introduced to provide further guidance regarding the validity of SCs/SRs that were embodied on the basis of superseded versions (e.g. when requirements may have been less demanding).

Additionally, it clarifies that new aircraft modifications must always be made on the basis of the latest available issue of CS-STAN.

7 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2015016r

8 https://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2017014r

9 Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1) (https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:32012R0748).

— **CS STAN.80 Definitions and abbreviations (amended)**

The definitions and abbreviations have been amended to include the new terms that have been introduced by this Decision.

SUBPART B

— **CS-SC002c — Installation of Mode S elementary surveillance equipment (amended)**

This SC has been amended to clarify that it also allows for the individual installation of an altitude encoder. Additionally, the wording of this SC has been improved to clarify that its scope is limited to elementary surveillance. The installation of ADS-B out systems is now covered by CS-SC005a.

— **CS-SC003c — Installation of audio selector panels and amplifiers (amended)**

This SC has been amended to limit its scope in order to prevent the installation of certain newly available functions that may seriously affect the pilot–machine interface.

— **CS-SC005a — Installation of an ADS-B OUT system combined with a transponder system (new)**

This new SC has been introduced to allow the installation of ADS-B OUT systems. This SC allows the installation of three different combinations of transponder and GNSS sources.

— **CS-SC034b — Exchange of an existing battery for a lithium iron phosphate ($LiFePO_4$) battery system (amended)**

This SC has been amended to update the reference to a superseded standard.

— **CS-SC035a — Installation of solar cells on sailplanes (new)**

This new SC has been introduced to allow the installation of solar cells on sailplanes, with the purpose of allowing longer operation of the on-board avionics systems.

The installation of solar cells may be a means to provide recharging of the existing batteries when flying in sunny conditions, thus extending the possible flight time.

— **CS-SC036a — Installation of visual awareness lights (new)**

This new SC has been introduced to allow the installation of visual awareness lights.

A mid-air collision is one of the most common reasons for accidents in the GA domain10. Many existing (old) airframes are only partly equipped with these lights, or not at all. This new SC is expected to incentivise the retrofitting of old GA airframes to install awareness lights in an acceptable and controlled way, thereby enhancing flight safety.

— **CS-SC037a — Exchange of a main aircraft battery (new)**

This new SC has been introduced to allow the exchange of a main aircraft battery (e.g. a starter battery, batteries for sailplanes) for another type that meets the same minimum standards.

In comparison with originally certified batteries, it is recognised that modern battery systems may feature:

- improved leakage protection;
- higher capacities, also in low outside air temperature (OAT) conditions;

10 Refer to the European Plan For Aviation Safety (EPAS) 2018-2022, point 5.5.4

- better flammability values; and
- lower weights.

All the above aspects are expected to bring positive contributions to safety.

— **CS-SC038a — Installation of DC to DC converters (new)**

This new SC has been introduced to allow the installation of direct current (DC) to DC converters to support avionics installations and equipment that require a supply from a controlled voltage, including pilot devices.

— **CS-SC051c — Installation of 'FLARM' equipment (amended)**

This SC has been amended to improve the wording and to include two FLARM requirements in paragraphs 3 and 4.

— **CS-SC052c — Installation of GNSS or equipment (amended)**

This SC has been amended to introduce some clarifications in paragraphs 3 and 4.

Additionally, the applicability has been extended to non-complex motor-powered aircraft, including any ELA2.

— **CS-SC084a — Repainting of composite aircraft structures (new)**

This new SC has been introduced to allow the repainting of the outer surfaces of composite aircraft with alternative varnishes of the acrylic or polyurethane paint types.

— **CS-SC085a — Exchange of an aircraft livery paint and decorative sticker scheme (new)**

This new SC has been introduced to allow a full or partial change of an aircraft external livery design.

— **CS-SC086a — Exchange of a balloon 'bottom-end' (new)**

As it is very common in the balloon community to use one bottom-end, comprising a basket and heater system, together with multiple envelopes, this new SC has been introduced to allow for such combinations.

— **CS-SC105a — Installation of mounting systems to hold equipment (new)**

This new SC has been introduced to allow the installation of structural provisions that are intended to hold pilot's equipment inside the cockpit or the cabin.

— **CS-SC106a — Installation of flight time recorders (new)**

This new SC has been introduced to allow the installation or exchange of flight time recorders without affecting other aircraft systems or installing new data acquisition points.

— **CS-SC107a — Installation of carbon monoxide detectors (new)**

This new SC has been introduced to allow the installation of carbon monoxide detectors, either as panel-mounted devices, or by the semi-permanent installation of 'life saver' badges by using adhesives.

These devices are expected to increase the overall level of safety.

— **CS-SC151b — Installation of headrests (amended)**

This SC has been amended to improve the wording in order to prevent any misunderstandings regarding its applicability.

— **CS-SC152b — Changes to seat cushions including the use of alternative foam materials (amended)**

This SC has been amended to provide additional clarifications and details regarding the acceptable methods, techniques, and practices to be followed in order to embody such changes.

— **CS-SC201b — Exchange of powerplant instruments (amended)**

This SC has been amended to improve the wording.

— **CS-SC206a — Exchange of fixed pitch wooden propellers (new)**

This new SC has been introduced to allow the exchange of a fixed wooden propeller for a similar fixed pitch wooden propeller on an ELA2 aeroplane.

Such an exchange is possible as an SC because a vibration test is not required according to the Certification Specification for fixed wooden propeller installations (e.g. refer to CS 23.2400 Amendment 5 or CS 23.907 Amendment 4 and CS VLA.907 — no dedicated requirements are present in CS-LSA and CS-22).

— **CS-SC207a — Exchange of fuel cylinders on hot-air balloons (new)**

This new SC has been introduced to allow the exchange of the fuel cylinders in hot-air balloons.

— **CS-SC401c — Exchange of basic flight instruments (amended)**

This SC has been amended to expand its scope to include the possibility of replacing the accurate timepiece of an aircraft (e.g. a clock). Additionally, the applicability has been amended for reasons of clarity.

SUBPART C

— **CS-SR802c — Repair of sailplanes including powered sailplanes, LSA and VLA (amended)**

This SR has been amended to expand the list of acceptable references to be used for repairs of light-aircraft structures.

2.4. What are the stakeholders' views

309 comments were submitted by 31 stakeholders during the public consultation of NPA 2018-10.

The list of stakeholders commenting on this NPA included national aviation authorities, type certificate holders, GA associations, manufacturers of parts and appliances, aircraft owners and others.

The nature of the comments received ranged from specific technical aspects, to comments that were intended to improve the wording of the proposed amendments.

Several comments were accepted or partially accepted, thus leading to substantial amendments of the proposed text, which, in certain areas, has been significantly improved.

For additional details and individual responses to comments, please refer to CRD 2018-10.

2.5. What are the benefits and drawbacks

In accordance with Article 3(5) of EASA MB Decision No 18-2015, this Decision has been prepared in the framework of the regular update of CS-STAN, therefore there is no need to develop a RIA.

EASA expects that the increased number and expanded scope of SCs/SRs will have a positive economic impact on the GA community. This expectation has already been confirmed by the decreasing number of applications that have been submitted to EASA for minor changes or repairs to GA aircraft. The number of applications has dropped by more than 60 % during the last 5 years. The use of CS-STAN for such minor changes or repairs is considered to have contributed to this.

The overall safety level is also expected to increase, since the use of CS-STAN for certain minor changes and repairs will facilitate the installation of more modern equipment on the affected aircraft.

Additionally, it is expected that the increased availability of CS-STAN will have a positive impact on the operation of the affected aircraft in Europe, and, in this way, it will promote GA.

3. How do we monitor and evaluate the rules?

The SCs/SRs concept is part of EASA's endeavours to reduce the regulatory burden for GA. It provides an alternative to the conventional process for approving a modification to the aircraft type design for cases in which EASA acknowledges that there is little added value in a conventional design approval process, and that the change or repair is performed using a well-established best practice.

Monitoring the number of applications received by EASA for the approval of minor changes and repairs in GA is expected to be a relevant indicator for the effectiveness of this CS.

Additionally, the voluntary reporting system that was introduced by CS-STAN Issue 2 is also expected to provide reliable feedback regarding the actual utilisation of the SCs/SRs.

4. References

4.1. Related regulations

N/A

4.2. Affected decisions

— Executive Director Decision 2017/014/R of 30 March 2017 adopting new and amending existing Certification Specification for Standard Changes & Standard Repairs (CS-STAN) 'CS-STAN — Issue 2'

4.3. Other reference documents

None