



Comment-Response Document 2014-24

Certification Specifications for Standard Changes and Standard Repairs (CS-STAN) – Phase 1

CRD TO NPA 2014-24 — RMT.0245 (MDM.048) — 8.7.2015

Related Decision 2015/016/R

EXECUTIVE SUMMARY

This rulemaking activity addresses a proportionality issue: it will allow a simpler process for the design and embodiment of some changes and repairs when applicable to certain aircraft (aeroplanes up to 5 700 kg MTOM, rotorcraft up to 3 175 kg MTOM, most sailplanes, balloons and airships) and when in compliance with CS-STAN.

The concept of Standard Changes and Standard Repairs was introduced with Regulation (EU) No 748/2012 (paragraphs 21A.90B and 21A.431B). In order to use these concepts, the Agency had to publish the related Certification Specifications (CS-STAN). The package now released is the first phase of this rulemaking activity (see ToR RMT.0245 (MDM.048) Issue 2) and contains a first Decision for the initial issue of CS-STAN with additional AMCs, mainly to Part-M.

In the future, CS-STAN will be further supplemented (Phase 2).based on experience and with new proposals provided by the affected stakeholders.

The proposed changes are expected to reduce the regulatory burden for the embodiment of simple changes and repairs in certain aircraft when fulfilling the acceptable methods, techniques and practices included in CS-STAN. It is expected that this will have a positive impact on the operation of the affected aircraft in Europe, thus promoting general aviation. Additionally, a simplified procedure for the embodiment of Standard Changes and Standard Repairs could limit the illegal practices of some owners who have not followed the applicable rules when modifying the aircraft and may encourage the installation of safety equipment.

This CRD contains the comments received on NPA 2014-24 (published on 6 October 2014) and the responses provided thereto by the Agency.

Based on the comments and responses, Decision 2015/016/R was developed.

Applicability		Process map	
Affected regulations and decisions:	Commission Regulations: (EU) No 748/2012, (EU) No 1321/2014 and Decision 2003/19/RM and Decision 2012/020/R	Concept Paper:	No
Affected stakeholders:	Light aircraft owners, design organisations, maintenance organisations and individuals involved in maintenance, CAMOs, NAAs.	Terms of Reference (Issue 2):	16.12.2014
Driver/origin:	Proportionality	Rulemaking group:	No
Reference:	N/A	RIA type:	Light
		Technical consultation during NPA drafting:	No
		Publication date of the NPA:	6.10.2014
		Duration of NPA consultation:	3 months
		Review group:	No
		Focussed consultation:	No
		Publication date of the Opinion:	N/A
		Publication date of the Decision:	in parallel with this CRD



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1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this Comment-Response Document (CRD) in line with Regulation (EC) No 216/2008¹ (hereinafter referred to as the 'Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the Agency's [4-year Rulemaking Programme](#), under RMT.0245 (MDM.048). The scope and timescale of the task were defined in the related Terms of Reference (see process map on the title page).

The draft Certification Specifications (CSs)/Acceptable Means of Compliance (AMC)/Guidance Material (GM) has been developed by the Agency. All interested parties were consulted through NPA 2014-24³, which was published on 6 October 2014. Around 380 comments were received from interested parties, including industry and National Aviation Authorities (NAAs).

The process map on the title page contains the major milestones of this rulemaking activity.

1.2. The structure of this CRD and related documents

This CRD provides a summary of comments and responses as well as the full set of individual comments and responses thereto received to NPA 2014-24. The resulting rule text is provided in the relevant Decision.

1.3. The next steps in the procedure

The Agency has published this CRD in parallel with Decision 2015/016/R, which contains the new Certification Specifications for Standard Changes and Standard Repairs (CS-STAN), and amendments to the related AMC and GM.

The Decision also contains the entry-into-force information of the applicable rule.

¹ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

² The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'. See Management Board Decision concerning the procedure to be applied by the Agency for the issuing of Opinions, Certification Specifications and Guidance Material (Rulemaking Procedure), EASA MB Decision No 01-2012 of 13 March 2012.

³ See: <http://easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2014-24>



2. Summary of comments and responses

The consultation of the NPA 2014-24 has gathered around 380 comments from individuals, industry and NAAs.

The majority of stakeholders commenting on the NPA have welcomed the publication of the NPA and have requested the Agency for an urgent adoption of the related Decision, making possible the use of the concept of Standard Changes/Repairs. Few commentators had the opposite view and some pointed out about the impact the Decision could have on the US Bilateral Agreement.

The next paragraphs of this Chapter contain a summary of the comments received and the responses thereto provided by the Agency. All individual comments received on the NPA and the responses thereto are copied in Chapter 3.

- As each individual Standard Changes/Repairs contain applicability requirements, many stakeholders have requested its full expansion to the applicability set defined in Part-21, paragraphs 21.A.90B and 21.A.431B. The Agency has reviewed applicability for each Standard Change/Repair and often the proposed applicability has been extended based on the comments received. Compared to the NPA, several Standard Changes are now also applicable to some rotorcraft. However, in those cases where the Agency had reservations, the assessment for the extension of applicability has been postponed to a later phase (Phase 2) of this rulemaking activity.
- Where applicability was proposed for ELA2 aircraft, many stakeholders requested to include also ELA1 aircraft. The Agency confirms that sailplanes, aeroplanes and rotorcraft classified as ELA1 aircraft also fulfil the ELA2 definition and, therefore, by quoting ELA2 aircraft, related ELA1 aircraft are by definition included. This is in line with the approach followed for the coming amendments to Part-M. Under a new paragraph 'Definitions' in the 'Subpart A – General' of CS-STAN, this is clarified. Also, upon stakeholders' requests, some other definitions are added in the 'Subpart A – General'.
- In order to comply with current rules (Part-21, Part-M), some stakeholders commented on the need for an independent Aircraft Flight Manual (AFM) approval, Aircraft Maintenance Program (AMP) approval or an approved Permit to Fly (PtF) when embodying Standard Changes/Repairs. The Agency considers that AFM changes are changes to the type design which can be considered part of the Standard Change, and, therefore, they do not need an independent approval. The AMP, if needed to be amended in accordance with new Instructions for Continuing Airworthiness issued with the Standard Change/Repair, may require an approval. In some cases it is possible to obtain the AMP approval without the involvement of the NAA, by means of an indirect approval and soon it will be possible for the aircraft owner to self-declare the Maintenance Program for certain aircraft. A PtF is required when the aircraft does not meet applicable airworthiness requirements. This is not the case when equipment is being installed through a Standard Change on a 'no hazard no credit basis'.
- Many commentators have requested a clearer definition of the persons entitled to carry out the release to service after the embodiment of each Standard Change/Repair. The Agency has considered that being too prescriptive about the license categories required for the release to service of each Standard Change/Repair would unavoidably introduce unintended constraints for



certain license holders. The Agency believes that each person (natural or legal) would first need to assess if they are competent and if they hold the required license/approval privileges for the embodiment of the Standard Change/Repair. A posteriori, NAAs may still assess the competence of the responsible person to use CS-STAN and embodiment of the Standard Change/Repair by checking their details on the Form 123. With regard to aircraft for which there is no Part-66 license (e.g. gliders, balloons), it has been clarified in the new AMC to M.A801 that there is no automatic mutual recognition of national licenses.

- There were also comments requesting further clarification with regard to the use of articles not being ETSO authorised. The new AMC to M.A.801 contains more clarification with respect to the use of parts in a Standard Change/Repair and a definition to the equivalent ETSO article is provided in the new paragraph CS.STAN 80 in the 'Subpart A – General' of CS-STAN.
- Some commentators have also requested that some of the Standard Changes proposed as 'replacement' be changed to 'installation'. The Agency used a distinction between these two terms in the NPA in order to differentiate among the cases where, prior to carrying out the Standard Change, there was (or there was not) an equipment/system in the aircraft already providing the function subject to the Standard Change. After reviewing these comments, the Agency has changed the Standard Changes SC003 and SC053 from 'replacements' to 'installations', and has reviewed the consistency on the use of these terms in the final rule and providing a clarification in CS.STAN 80 of the 'Subpart A – General'. Finally, in the final rule, the term 'replacement' has been substituted with the term 'exchange', since in Regulation EU No 1321/2015 the term 'replacement' is used when a part is substituted with an identical part (i.e. same part number).
- Finally, various commentators, including the FAA, have identified a potential impact on the use of CS-STAN in parallel with the US Bilateral Agreement, namely with regard to the export of individual aircraft with Standard Changes/Repairs embodied to the US. The Agency acknowledges this potential impact but considers that, with the number of aircraft affected, this is a minor side effect that should be treated in the Bilateral Agreement dedicated fora.



3. Individual comments (and responses)

In responding to comments, a standard terminology has been applied to attest the Agency's position. This terminology is as follows:

- (a) **Accepted** — The Agency agrees with the comment and any proposed amendment is wholly transferred to the revised text.
- (b) **Partially accepted** — The Agency either agrees partially with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.
- (c) **Noted** — The Agency acknowledges the comment but no change to the existing text is considered necessary.
- (d) **Not accepted** — The comment or proposed amendment is not shared by the Agency.



(General Comments) -

comment 4 comment by: *Samionics / General Aviation Avionics*

We are very positive to this long requested NPA concerning avionics and electrical systems in non complex aircraft and hope that the CS-STAN will become valid as soon as possible without any further delays.

response Noted.

comment 5 comment by: *FFAé*

Although it is the phase 1 comment, I'd like to add some standard changes for hot air balloons (standard shapes) in the list :

a) exchange of traditional certified wickerwork baskets under enveloppes. Any data about limitations are available on each manufacturer's flight manual and any pilot-owner may compare the limitations of the envelope and of the basket and define the most restrictive of them. The CS-31 requirements may be analyzed by the workshop or the pilot-owner and they can choose components compliant to the design of their envelope. An inflation then may show the physical mount of the basket with loadframe and envelope.

b) exchange of fuel cylinders filled with propane. The fuel cylinders are certified under the approval of a hot air balloon and they are strapped inside the basket with manufacturer straps. The main point is the hose connector : some are Rego type, other are Tema type or 'Quick-off' type. If the fuel cylinder connector suits the hose connector, it should be possible for the pilot-owner to change the definition though CS-STAN change instead of requiring an EASA major change from the manufacturer of the envelope.

c) Exchange of burner(s) and load frame. This point is more technical because the size of the load frame designs the flying cables from the mouth of the envelope to the load frame. But if data is provided by the manufacturer of the envelope and the manufacturer of the load frame and burners, a pilot owner may analyse and show compliance with an inflation.

response Noted. See the response to comment 228

comment 22 comment by: *The Norwegian Air Sports Federation*

The Norwegian Air Sports Federation (NLF – Norges Luftsportforbund) would like to thank the Agency for the CS-STAN proposal. In our view, the principles applied will greatly benefit the safety of general aviation and air sports in Europe, since technological improvements with a proven safety benefit will be more accessible, less expensive and less burdensome to implement in the general aviation fleet.

For those assuming that removing the requirement of an equipment and installation specific Agency approval prior to a change or repair would mean a *decrease* in the level of safety, we would like emphasise that similar principles have been applied in the US for years, and that there is no indication that the level of GA safety in the US is lower than in Europe (rather the contrary).



	<p>We sincerely hope that the outcome of the commenting process won't be a change of the core of the proposal in such a manner that the regulatory burden ends up being higher than proposed in CS-STAN.</p>
response	<p>Noted.</p>
comment	<p>64 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>The LBA appreciates the basic approach of this NPA introducing alleviations in certification procedures for general aviation, especially in the field of sport aviation.</p> <p>The standard should either be limited to a one by one box change or FAA AC 43-13-2B Chapter 1 (Structures) should also be mentioned.</p> <p>Concerning general working principles there should also be a reference to FAA AC 43.13-1B CHG1, Chapters 11 and 12.</p> <p>Effects on POA: Can parts for Standard Changes and Repairs be produced in a POA? If Yes, - Who is signing a DO/PO arrangement? - By which statement is the design to be considered "approved" or to be eligible for an EASA Form 1? - Can parts according to Standards Changes be installed during production?</p> <p>Situation in the General Aviation's world: CS-STAN and the FAA AC will be published in English language only. This might cause some misunderstanding in practical application of the CS and especially of the FAA AC because English is usually not the "mother language" used in GA. This might also be a problem in other EU Member states?</p> <p>3.2.2 Decision No 2003/19RM; Page 8ff: Any requirements concerning Part-M and Part-145 are published as GM only. Even the EASA Form 123 is only recommended in point 9 of GM M.A.801, but however plays an important role in the GM and is also referenced in CS-STAN.20 and CS-STAN.30. At least some essential requirements concerning the CRS and the documentation of CS / CR should be incorporated into AMC material. In addition M.A.801 is not applicable to Part-145. The AMC/ GM of Part-145 should contain at least a cross-link to the Part-M-AMC/GM.</p> <p>3.2.2 Decision No 2003/19RM; Page 8ff: Nowhere in the GM, but also nowhere in the CS is it pointed out that CS-STAN can only be applied if not being in conflict with TCH data. Only by indirect cross-reference to 21.A.90B and by applying the FAA AC itself this requirement becomes effective. We recommend including such requirement more clearly in the GM/AMC and/or the CS.</p>
response	<p>Noted. Specific chapters of AC 43-13 1 & 2 have been added to the NPA text as considered necessary.</p> <p>The concept of Standard changes/repairs was developed assuming that the target products would be 'used aircraft' and the changes/repairs would be embodied as a</p>



maintenance activity. It is however not forbidden its implementation by a POA in case in agreement with the TC holder, but the Agency does not see its advantage (typically a modification could be approved as a minor change directly by the TC holder, also holding a DOA approval). Therefore Acceptable means of compliance developed with this Decision only contains AMC for Part-M/145.

Most of the standard changes or repairs assume that parts are either ETSO, or produced by a POA for another approved design, or can be fabricated by the installer (e.g. brackets). So there are normally not specifically designed parts that should be produced by a POA. However in the case that the standard change or repair would contain such a specifically designed part it can be produced by a POA. Obviously there is no need to have a DO-PO arrangement. Clarification is added in the 'Subpart A – General' of CS-STAN.

Some CS-SCxxx changes require the parts/appliances to be ETSO approved. In this case, its production needs to follow Part 21 principles. The person signing the form 123 is responsible, among other things, for the eligibility of the parts being installed. Parts without an EASA form 1 can be installed when permitted in Part M or Part 21, as already explained in the text GM M.A.801 of the NPA.

EASA cannot provide translation services into other languages. English is the common languages used for the communications of the Agency. NAAs may provide translating support of these and other Standards to their industry/community.

Text defined as GM M.A.801 in the NPA has been classified as AMC in the Opinion. AMC to 145.A.50 has been added to refer to AMC M.A.801 AMC.

In addition to the CS-STAN and AMC/GM relevant paragraphs, the users of the Standard Change/Repairs process should know the relevant rule paragraphs, e.g. 21.A.90B. Their content should not be repeated into AMC/GM.

comment 97

comment by: *Austro Control*

Austro Control GmbH avionics members appreciate the efforts to reduce the burden for the General Aviation and we would like to thank all involved persons making this CS-STAN possible.

We would have the following comments:

General: The wording "additionally the following considerations apply" might be misleading and might raise the question whether the "consideration" need to be incorporated or not. Thus, we would propose to change the wording in "additionally the following items apply and shall be met"

Reference: **CS-SC001a**, 3-Acceptable methods, techniques and practices, 4 "For different installations (cable length, connectors) the required output power needs to be assessed by additional analysis:

- The equipment is qualified for environmental conditions expected during normal operation
- Instructions and tests defined by teh equipment manufacturer have to be followed

Comment: The wording might leave the impression that ETSO Equipment need not to be installed within its dedicated limits (Environmental conditions) and that equipment without ETSO approval might be installed as well. Such an approach would require equipment qualification on aircraft level, which might be out of the scope of a "Standard". It is my understanding that the equipment must be approved in accordance with the applicable ETSO to ensure proper function in the airspace.

Proposal: Move "The equipment is qualified for the environmental conditions to be expected during normal operation." as new item between items 3. and 4.

Move "instructions and tests defined by the equipment manufacturer have to be followed"



between items 3. and 4.

Add: "The installation instructions and specifications of the equipment manufacturer have to be followed" after new item 5.

Add: "The antenna cable fits to the equipment (is of a type and kind defined by the equipment manufacturer)

Replace "For different installations (cable length, connectors) the required output power needs to be assessed by additional analysis" with "When the cable length exceeds 4m or when the antenna cable is interrupted by a connector, additional analysis is required which have to ensure that the output levels equal to those above are achieved."

Reference: **CS-SC002a** 3-Acceptable methods, techniques and practices: The reported pressure altitude is obtained from an approved source connected to the static pressure system providing pressure to the instrument used to control the aircraft.

Comment: Although the wording is very descriptive and is more clear than that from CS-ACNS, we made the experience that "approved source" is interpreted in different ways.

Proposal: If "As example, an altitude digitizer connected to the static pressure system would be adequate" could be added, the intent is obvious.

Reference: **CS-SC051a** "FLARM"

Comment: The word "FLARM" is a trademark. Mentioning only this device would result in the inability of other comparable equipment installation. It is felt that this is in contrary to the Spirit of Europa because it would create a monopole for one single item and one single manufacturer.

Proposal: Replace "FLARM" either with already mentioned "Anti-Collision Awareness System" or with a different term describing the intended function. As example: "Sailplane detection assisting device"

Reference: **CS-SC051a**, 3-acceptable methods, techniques and practices "Additionally, the following considerations apply": "- FLARM(R) and TR-DV(R) installation Policy..."

Comment: Pursuant to previous comment, the technical specifications should also account for other than FLARM equipment.

Proposal: Add the following: "FLARM(R) ad TR-DV(R) Installation Policy for Aircraft, TMG, Helicopters, (Gliders); Swiss Federal Office of Civil Aviation FOCA 42-00.02_FLARM Installation FOCA Policy is applicable in principle for all installations"

Reference: **CS-SC051a**, 4-Limitations

Comment: It should be stated that this system would not allow any beneficial operation.

Proposal: Add the following or similar wording to Limitations: "Manoeuvres must not be based on (refer above for wording issues) device"

Reference: CS-SC052a, 3 - Acceptable methods, techniques and practices, "-FAA Advisory Circular AC 43-13-2B Chapter 2"

Comment: Chapter 2 of mentioned FAA AC describes "communication, navigation, and emergency locator transmitter system installations". As a moving map is non-required equipment, it would not be part of either of the categories. The intent of the reference is not known, but we assume that the installation criteria of these equipment shall apply for the display as well. This point should be made more clear in the CS-STAN

Reference: **CS-SC101a**, 3-Acceptable methods, techniques and practices, reference to RTCA DO-182/ED-62A

Comment: Both referenced documents are chargeable and would therefore require to purchase either of them. This might lead to decisions owners/operators to not install fixed ELTs but to use "PLBs" instead (where possible according .IDE) The disadvantage of the PLB is that this would not transmit automatically in the event of an accident/crash landing and when



the person(s) on board are unconscious, no one will switch the PLB on resulting in delays of Search and Rescue. To encourage owners/operators to install automatic ELTs, we would suggest to include the technical aspects of ED-62A/DO-182 (EMI testing etc.) directly into the CS.

Reference: **CS-SC101a**, 4-Limitations or Applicability/Eligibility

Comment: Although obvious already due to OPS rules, a limitation to install 406 MHz ELTs should be added to avoid installations of 121.5 MHz ELTs.

Proposal: Only ELTs transmitting on 121.5 MHz, 243 MHz and 406 MHz might be installed.

Reference: **CS-SC251a**, 3-Acceptable Methods, techniques and practices "The system is not used as an input source to any other system such as an autopilot or stick pusher, unless certified separately"

Comment: Avionics manufacturers of Highly Integrated Avionics Systems offer "envelope protection" functions with their equipment. I am not aware of stick pushers in this category of aircraft, but these "envelope protection" could be compared with stick-pushers.

Proposal: Replace "...such as an autopilot or stick pusher, unless..." with "...such as an autopilot, stick pusher, envelope protection system or comparable function, unless...."

Reference: **CS-SC401a**, 1-Purpose, "This Standard Change does not entitle the instalment of digital multifunction displays."

Comment: The wording would allow that conventional equipment is replaced with EFIS equipment.

Proposal: Add the following statement: "This Standard Change also does not entitle the replacement of conventional, mechanical and/or analogue instruments with integrated Electronic Flight Instruments Systems (EFIS). A replacement of such a single instrument with one having a display as means of indication might be acceptable when the intended function is not extended, reduced or otherwise altered (1:1 replacement) and conforms to 3."

Reference: **CS-SC401a**, 3-Acceptable methods, techniques and practices, reference to FAA AC 43-13-2B Chapter 2

Comment: Could you please verify if the reference to Chapter 2 is correct or if a reference to Chapter 11 would possibly more suitable?

Any wording change, which would make the CS-STAN easier to understand, is highly appreciated by us.

response

General: Partially accepted. The text has been amended, although using a different wording.
 CS-SC001a 'Radio': Not accepted. It is sufficiently defined that the equipment needs to be qualified against one of the listed standards and is qualified for the environmental conditions.
 CS-SC002a: 'Transponder': Accepted, a reference to altitude encoder standard has been added.
 CS-SC051a 'FLARM': Accepted. The text has been modified accordingly.
 CS-SC101a. Not accepted. EASA holds no proprietary rights to reproduce the documents quoted. Comment about the ELT frequencies is noted. A new paragraph 7. has been added
 CS-SC251a 'AoA': Accepted. The text has been modified accordingly.
 CS-SC401a: Partially accepted. The proposed text in the NPA already stated that the installation of digital multifunction displays is not permitted. Paragraph 3 applies for exchange 1:1 with a new single electronic instrument.

comment

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comment by: *Swedish Transport Agency*

Swedish Transport Agency comments to NPA 2014-24 CS-STAN



response	<p>The general impression is that we agree to the possibility of implementing Certification Specifications for Standard Changes & Standard Repairs (CS-STAN) - Phase 1.</p> <p>Noted.</p>
comment	<p>108 comment by: UK CAA</p> <p>Page No: General</p> <p>Paragraph No: N/A</p> <p>Comment: The UK CAA recommends there should be a way of assessing or auditing how such modifications/repairs have actually been carried out, once they have been embodied.</p> <p>Justification: Clarification would be useful regarding how compliance with the appropriate standards has been achieved, and how standardisation across an organisation doing modifications/repairs is assured.</p>
response	<p>Accepted. Clarification follows. This comment does not lead to changes</p> <p>The assessment of the Standard changes & repairs can be done at the time of the airworthiness review (as per M.A.710 a) 6. and 8.</p> <p>Data required to identify the organisation's/individual person's responsible for embodying the Standard change/repair should be contained in the form 123, and a copy of it should be retained by the aircraft owner.</p> <p>In addition, approved maintenance organisations performing standards changes/repairs can be audited on this process during the oversight by the NAA of their activity.</p>
comment	<p>146 comment by: Helicopter Club of Great Britain</p> <p>The Helicopter Club of Great Britian welcomes these proposals and urges their urgent adoption.</p> <p>The proposed implementation date of Q1 2016 is too long, and these proposals should be implimented as soon as possible - we suggest Q2 2015.</p>
response	<p>Noted.</p>
comment	<p>168 comment by: Piaggio Aero Industries</p> <p>Before installing a standard change, or a standard repair, I suggest adding a recommendation to check if any special condition / Certification Review Item exists, applicable to that specific airplane, and related to the standard change/repair (EASA or TCH may provide such information on request, if not clearly available on the TCDS). E.g., a special condition requiring compliance to more stringent requirements could require a more extensive evaluation to install the modification</p>
response	<p>By definition of Standard Change/Repair, they cannot be in conflict with the TC Holders' data. A new paragraph has been added to the 'Supbart A – General' of CS-STAN to provide clarification.</p>



comment	169	comment by: <i>Piaggio Aero Industries</i>
	Some SC may allow replacement of basic airplane installations (torso restraint, basic flight instrument, powerplant instruments). Basically, it is requested to verify that the new equipment is suitable for environmental conditions to be expected during normal operation. I suggest adding a recommendation to check that new equipment used for critical functions is such to perform its intended function under any foreseeable operating condition (ref CS23.1309). See also specific comment on SC401	
response	Not agreed. It is not assumed that compliance with CS 23.1309 has to be demonstrated. As a mitigating measure, the standard changes contain required conditions and limitations.	
comment	173	comment by: <i>Piaggio Aero Industries</i>
	Several changes are not allowed for complex motor powered airplanes. Since standard changes/repair can be used on airplanes with MTOW < 5700 kg, actually this requirement states that standard repair/changes can not be used on twin-turboprop, single turbojet or two-pilots aircraft, even if apparently there is no relation between the number/type of engines and the content of the modification. I suggest adding an additional requirement (better: restriction) only when related to the content of the change. As an example, why SC153 (replacement of safety belts/torso restrain system) should require EASA (or DOA) approval if performed on a twin turboprop, and not if performed on a single turboprop?	
response	Noted. See the response to comment 172.	
comment	178	comment by: <i>Piaggio Aero Industries</i>
	Will the SC/SR be addressed in a future revision of bilateral agreement?	
response	EASA has started a discussion with the FAA about potential implications of this new concept on the Bilateral agreement with the US. The outcome of these discussions is not known at this time.	
comment	185	comment by: <i>European Sailplane Manufacturers</i>
	The European sailplane manufacturers definitely and sincerely appreciate and applaud EASA for introducing a procedure allowing a light and fast approval of standard changes and repairs. In fact for quite a long time the gliding community and other parts of the sport and recreational aviation scene have asked for such a system. Also it was repeatedly asked to get a document or CS which would be at least equivalent to the FAA AC43.13 documents. Therefore the sailplane manufacturers are full in favour of NPA 2014-24 and certainly support the proposed principles and repair / modification topics. Some other general comments from the European sailplane manufacturers may be found in the following comments – in all cases they are certainly not meant to slow down or	



	dissuade from introduction of CS-STAN but to improve this system which hopefully will become a very useful tool for operators and maintenance people all over Europe.
response	Noted.
comment	<p>186</p> <p style="text-align: right;">comment by: <i>René Meier, Europe Air Sports</i></p> <p>Europe Air Sports thanks the Agency for the preparation of NPA 2014-24. It starts to fill the time gap between the time before EASA was established and the possible application of the CS once it will be in force.</p> <p>The comments of Europe Air Sports reflect inputs from member organisations and consider the comments of the European Powered Flying Union, the European Gliding Union, the Aero-Club of Switzerland, the Fédération Française Aéronautique, the Finnish Aeronautical Association, and the Norwegian Air Sports Federation.</p> <p>Europe Air Sports and its member organisationshe organisations mentioned strongly support the principle of Standard Changes and Standard Repairs. These are adequate to the operations, consider complexity and risks.</p> <p>We expect the Agency to adopt and further develop the concept of Standard Changes and Standard Repairs in future as well when it will come to integrate new material, new technologies and new measures/possibilités to demonstrate the safety of the work executed on aircraft by the members.</p> <p>Today already we ask the Agency for broadening the scope of these Standard Changes and Standard Repairs to a maximum. This will have positive inputs to the lower end of General Aviation, i.e. sports and recreational activities while maintaining an adequate level of safety of flight.</p> <p>In addition, we propose to the Agency to involve us as stakeholders as early as possible in "Phase 2" activities: This "Phase 2" is a "must", not a "could" topic for us. We offer our assistance to the Agency, we have hundreds of competent persons well knowing what is important and what adds to safety.</p> <p>In the case of this CS package it is essential that the Certification Specification decision will be available -like all EU regulations- in the official EU languages, otherwise much of the effort developing this system will be wasted. EAS urges the Agency to follow this recommendation as an exception to the rule.</p> <p>A very general remark after completion of all the "Standard Changes" and "Standard Repairs" pages: What we found under "2-Applicability/Eligibility" was sometimes confusion. We proposed several changes. May we kindly ask the Agency to eventually prepare clearer, simpler, more precise text considering the very high percentage of non-native readers and of volunteer aviators?</p>
response	<p>Noted.</p> <p>With regards to the extension of scope, see the response to comment 24. Refer also to the response to comment 227.</p>
comment	<p>192</p> <p style="text-align: right;">comment by: <i>BGA</i></p>



General comment by the British Gliding Association

The British Gliding Association strongly supports the principle and measures set out in NPA2014-24 (CS-STAN). We are pleased to find that EASA is finally making some progress towards addressing the needs of our sport with proportionate regulation. This measure will restore **some** of the freedoms we had safely enjoyed during the pre-EASA era, and will be of economic benefit to clubs, participants and maintenance companies.

While we have provided further detailed comments later in this response, the leaflets, and basic terms and paragraphs are fundamentally acceptable. The identification of the qualified person as the responsible signatory to the change/repair does rely on this engineer understanding his own limitation in respect of the possible complexity of the change. This may raise concerns with some, as in glider maintenance any change is usually made at the specific instruction of the owner, who logically should carry some responsibility. However, we feel that the wording carries sufficiently specific terms to be acceptable. For example, the changes (or repairs) identified are typically required to meet the requirements specified in the associated references rather than demanding them to be unequivocally and demonstrably safe. This is a key feature of this regulation and one which we welcome.

The 'living' nature of a Certification Standard should enable sensible, proportionate and hopefully, timely, adoption of new technology equipment, without having outdated regulation obstructing progress, as has been found in the past. We particularly welcome the Annex material dealing with FLARM, Transponders, Shock Absorbent cushions and 'sporting' instrumentation. We hope that future emerging technologies will be addressed in the same practical manner.

As a general practice, this CS should go further to cover a broader range of 'installations' rather than just 'replacements'. We support the views, of IAOPA for example, and seek a broadening of this CS to cover a wider range of installations and equipments. We fully support the expressed purpose of enabling best practice in pilot awareness through advanced instrumentation. There is no more direct contribution to safety than this, and regulation should not stand in its way.

For the past 40 years, UK gliding had been allowed these freedoms by our national regulator. In recent years, our community was been able to offer statistics to demonstrate that our historical approach to these matters was acceptable and safe. Nevertheless these freedoms have been removed in the name of 'regulating to the highest common standard' across Europe. We feel our experience supports a wider interpretation of the measure in this NPA

response Noted.

comment 196 comment by: *European Private Helicopter Alliance*

The headline of this NPA is that it is to be applied to aeroplanes and rotorcraft. However the text of the document refers only to aeroplanes, with no mention of rotorcraft.



	<p>Therefore throughout the whole document the word aeroplanes should change to aircraft, which would then include rotorcraft.</p> <p>The NPA wording excludes rotorcraft as it is currently written</p>
response	<p>Partially agreed. Where comments have been received, the applicability of each Standard Change/Repair has been reconsidered for an extension to rotorcraft. Depending on each case, the applicability has been modified (or not) to extent it to rotorcraft, in some cases with limitations.</p>
comment	<p>218 comment by: <i>European Private Helicopter Alliance</i></p> <p>The planned implimentation date of Q1 2016 is far too distant.</p> <p>These changes are needed urgently by the General Aviation community.</p> <p>The publication date of the decision and the implimentation of it should be brought forward urgently to Q2 2015.</p>
response	<p>Noted.</p>
comment	<p>225 comment by: <i>European Sailplane Manufacturers</i></p> <p>Persons to release to service a standard change / repair:</p> <p>It is understood by the European sailplane manufacturers that standard changes and repairs need only a release to service in order to implement such a change / repair and to allow further operation of the affected aircraft.</p> <p>It is also understood that this release to service will be done by different persons, depending upon the technical impact of this change / repair.</p> <p>Therefore it makes sense to have some changes / repairs where the pilot-owner is allowed to release it and others, where higher qualification is required.</p> <p>The European sailplane manufacturers also have been informed that with the future L-license as defined in Part-66 there will be a certain rating or privilege introduced, which will allow the holder of such a licence to release a standard change / repair of the type, where higher qualification is needed.</p> <p>Nevertheless this leaves open the case what has to be done as long as national licences apply, which is the case today for sailplanes.</p> <p>The fear of the European sailplane manufacturers is, that NAA will be rather unsure if they should allow holders of national licences equivalent to certifying staff as defined in Part-M / Part-66 to release such standard changes / repairs.</p> <p>This uneasiness on the side of the NAA might be reinforced by (perhaps only perceived) fear that allowing holders of national licences to do such releases will trigger regarding findings during EASA standardisation reviews.</p> <p>Therefore the European sailplane manufacturers propose that EASA should issue some</p>



documents – perhaps in the form of AMC material to the CS-STAN or even better as AMC material to Parts M / 145 / 66 which contains minimum requirements regarding qualification for such certifying staff.
(Possible locations for such AMC could be M.A.801 or the subpart-B for authorities within Part-M.)

Ideally the result would be that persons having the required minimum qualification could issue regarding releases to service immediately after publication of the CS-STAN.

Second best would be that NAA / member states have immediately the tools in hand to define which persons could issue such releases to service.

The worst case scenario would be an existing CS-STAN without persons being allowed to issue the releases to service.

response Noted. Clarification on the eligible persons for the release to service of aircraft with no Part-66 license is added in paragraph 1 of new AMC M.A.801.

comment 226 comment by: *European Sailplane Manufacturers*

Abbreviation “AFMS”:

The European sailplane manufacturers suppose that the often used abbreviation AFMS stands for “aircraft flight manual supplement”.

First question: are we correct?

Second question: could the definition of this abbreviation be included into CS-STAN to eliminate the need for such guesses?

response See comment 344 and the response thereto.

comment 227 comment by: *European Sailplane Manufacturers*

Language of the CS-STAN:

Whereas it is fully understood that EASA is responsible to issue the CS-STAN (as also every other CS), it has to be noted here that CS-STAN is somewhat different than all the other CSs.

All other CSs are typically directed to aviation professionals working at organisations where an “English only” document is acceptable or where it could be expected that this person / organisation will find a possibility to work with the CS even if English language is not been understood without assistance.

The CS-STAN is more or less directed at all affected aircraft owners and regarding certifying staff. Here it is to be expected to have a huge number of persons which could not be expected to understand a document (the CS-STAN) which is available in English language only.

Therefore the European sailplane manufacturers propose that EASA will issue the CS-STAN in some other languages beside English.

It is known by the manufacturers, that European practise would then require a translation



	<p>into ALL languages of Europe and that this will not be feasible by EASA. Nevertheless it is also known that EASA itself has employees of most European member states and that it should be therefore possible to offer versions of the CS-STAN at least in the 5 to 10 most useful languages used in Europe.</p> <p>If EASA feels unable to do such a translation, then at least via EASA or the European Commission some (rather small) budget should be made available to produce translation in cooperation with affected associations and to cross-read them then at EASA in order to produce “EASA recognized translations” which will then additionally carry a wording like “this is an EASA recognized, but still unofficial translation. In case of doubt or in case of contradiction between this translation and the English original of CS-STAN, the English original version shall remain valid and overrule this translation”.</p> <p>The European sailplane manufacturers would support such a translation effort and offer help in producing such translation into certain languages. Several sporting organisations like Europe Air Sports and AOPA have also often signalled that they would support translation of such documents.</p>
response	<p>EASA is lacking the necessary resources to produce official translations in other European languages. For non-official translations there is no need for EASA involvement, but instead, industry associations can perform the activity. Take also into consideration that producing such translations would have an impact in the time required for their delivery, will increase the effort for subsequent revisions of CS-STAN and will create a precedent for EASA published documents.</p> <p>Also consider that CS-STAN refers to documents which are only available in one language, typically English, e.g. AC 43.13.</p>
comment	<p>228 comment by: <i>European Sailplane Manufacturers</i></p> <p>Proposed further standard changes / repairs:</p> <p>The European sailplane manufacturers and other persons and organisations within the gliding community and especially maintenance related people have proposed further standard changes and repairs.</p> <p>This is certainly a non-complete list and the European sailplane manufacturers herewith offer assistance in the drafting of regarding amendments to the CS-STAN.</p> <p>repainting of composite aircraft acrylic canopy cracks – drilling a hole at the end of a crack replacement of tyres (inner tubes / outer tyre) replacement of control handles (installation of t-shaped handles) installation of camera mountings on the external surfaces installation / replacement of flexible (rubber) wing/tail skids installation / replacement of flexible seals at the control surfaces definition of the seat position of the “pilot in command” definition regarding the application of registration markings / national markings</p>
response	<p>Noted. The list of Standard Changes will be extended with more Standard Changes in a second phase of this rulemaking activity. Your proposal for new additions/amendments to CS-STAN list will be considered then. Thank you for your support.</p>
comment	<p>232 comment by: <i>CAA CZ</i></p>



The present NPA 2014-24 has a very questionable content. Basically, it denies the fundamental principle of certification, which should especially follow the primary objective - safety. For the approval of "Standard Changes/Repairs" clear and unambiguous rules are needed, which this regulation does not represent.

Presented requirements for each specified type of "Standard Changes/Repairs" are not comprehensive. For this reason, they should not be accepted in this form and should be reworked.

The text does not clearly identify the boundaries between "Standard Changes/Repairs" and changes of the type design (major or minor) – this document should state evaluation classification enabling to clearly and unambiguously determine a case of a "Standard Change/Repair" or a change of the type design. Most of mentioned "Standard Changes/Repairs" are not by its nature a mere "formal design approval" as stated in Regulatory Impact Assessment, which does not correspond to the current situation and therefore the proposal should be revised accordingly.

The document does not mention the need to develop necessary documentation. The text can be concluded that for a "Standard change/repair" approval only EASA Form 123 is necessary, which is inadequate. In case of adoption of these CS-STAN specifications without significant modifications, we propose to lay down an obligation to work out a basic documentation containing basic information (brief description, installed equipment qualification, environmental and energy analysis, ground tests (based on the recommendations of the manufacturer's manual or even a flight test)) about a Standard Change. A list of these documents would be part of every change, signed by an authorized person responsible for the installation and release of the aircraft to service.

Additional questions and comments associated with the proposal in question:

- How will the relevant change be checked?
- Who will check it (if at all)?
- How will the professional qualification of the entity which performs checks be assessed, and who will carry out it?
- How many standard changes may represent a change much more serious?
- Generally, the link to the AFM is not clarified. AFM has parts approved by EASA/Authority and it is absolutely unacceptable that these parts could be changed without approval, moreover by an organisation unapproved to change the data obtained during the certification process.
- The text mentions a number of terms that are not further explained in any way (e.g. the term of "complexity" (paragraph 4 of GM M.A.801) is not explained).

Requirements for approval of "Standard Changes/Repairs" should be specified in more detail. Otherwise there is a real possibility that the practical implementation of such rules will allow different interpretations or their simplifications by users, which will certainly mean that the product will be modified almost by anyone (there is no specification who exactly can make the changes) without anyone (including a TC holder) knowing. It may therefore be the case that despite previously approved specific type design of the product, there will exist a number of different "originals" which are in accordance with these rules. Such situation will certainly lead to a reduction of the level of safety, which is unacceptable. Furthermore, it will have significant impact on the holder of type documentation, DOA organisations and also to the NAA in terms of defining their responsibility for the product in question in the event that it will be subject to a change on which they have no information. This situation is not covered by the present document, as well as any relation to continuing airworthiness.

response

Not agreed: The concept of standard changes and repairs was introduced in EU Regulation (EU) 748/2012 and the proposed CS-STAN contains the acceptable methods, techniques



and practices.

A standard change does not need to be classified as major or minor change to the type design. The required documentation including changes to AFM and ICA and the process of identification and documentation in the aircraft logs are defined in the standard change. The standard changes and repairs contain also the required qualification for staff that can release the aircraft after embodiment of the change/repair.

comment

247

comment by: ECOGAS/SVFB/SAMA

2014-24 NPA ECOGAS 150106-2358

ECOGAS representing mainly but not exclusively SME's and is commending EASA for this NPA.

It is a very good start and goes into the right direction.

The increasing consideration of a risk based, proportionate and performance based regulation and oversight would allow that many limitations within the present NPA could be reconsidered in favour of

-> **division between Masstransport** e.g. aircraft >18 Pax where the potential damage is getting extremely high and those not involved in mass transport

->This needs **significant changes within the BR** and as long as those are not established, each and every NPA (unless dedicated to the lower potential damage of non mass transport) will have negative and unnecessary side effects on the wellbeing of SME's, which are in danger of extinction.

The question arises if not most or all ongoing proposals in PRE RIA and NPA's should get a **moratorium** unless the result of **NPA 2014-12 concerning Basic Regulation** can be seen and the effects estimated, with exception of those who will definitely bring relief, those should be sped up and treated with priority.

Under a continuous recession within most EU members economical consideration must be weighted much stronger as up to now, the more as smaller a potential accident damage could be. (as enabled by principles of risk based, proportionate and performance based)

However, any progress is welcome and therefore the NPA as a first step has the support of ECOGAS.

response

Noted. See also the response to comment 24.

comment

249

comment by: General Aviation Manufacturers Association (GAMA)

Attachment [#1](#)

The proposed CS-STAN appears to directly address the immediate safety and sustainability needs of the existing general aviation (GA) fleet in Europe. The proposed NPA 2014-24 will dramatically improve the maintenance and modification environment for the lighter end of the European GA fleet in a very significant manner. GAMA believes this proposal



addresses a number of critical recommendations of the GA Roadmap and will be widely embraced by the general aviation community.

EASA has done a good job of assuring that the program includes future flexibility by placing the changes and repairs standards in appendices. Over time it will be critical for EASA to continue to update these appendices as new methods and technology become accepted and beneficial. GAMA believes this approach allows for the European maintenance providers to focus more time and resources on aeroplanes and less time on paperwork and non-safety added process. CS-STAN represents a process that is superior to the current system for the maintenance and modification of light GA aircraft in Europe today and in fact, the proposal is ground-breaking on a global level. EASA is leading the world's aviation regulators in creating sensible and beneficial aviation policy in the area of maintenance and modification with this proposal.

response Noted. After revision, some Standard Changes have been extended to incorporate some rotorcrafts in the applicability list. See also the response provided to comment 250.

comment 255 comment by: *Ralf Keil*

German Aero Club appreciate this NPA. We asked for a long time for an easy way to eliminate the need for minor changes in the approval of standard changes and repairs. We looked forward, getting a document similar to FAA AC43.13, as the basis for impementation and relese of typical tasks.

EASA has gone a different way.
The idea of a list of permitted activities, particularly in the area of changes, means that this list will never be complete because other similar activities are not covered.

In this sense the following comments are not intended to relay the process of CS-STAN, they should help to install a system that is as simple and useful as possible for the maintenance of easier aircraft.

response Noted.

comment 256 comment by: *Ralf Keil*

Publication date of the Decision

EASA expect the publication of the decision on 1st Quater 2016.
That is more than one year after closing the consultation to this NPA.

It is expected that EASA receives a lot of amendments and proposals to complement this NPA during the consultation.
In the interest of the intended simplifications EASA should finish the decision as soon as practicable.

The German Aero Club offers any assistance in this way.

response Noted. Thank you for your support.

comment 257 comment by: *DGAC France*



response	<p>DGAC France is highly in favour of the introduction of these Certification Specifications, the provisions of which have been introduced in regulation (EU) n°748/2012 (21.A.90B for standard changes and 21.A.431B for standard repairs). It should be introduced as soon as possible in order to reduce the burden of approving individually simple changes and repairs for certain GA aircraft, both for EASA and GA stakeholders. This would also reduce costs and therefore increase the introduction of specific safety changes for these GA aircraft.</p> <p>Noted.</p>
comment	<p>258 comment by: DGAC France</p> <p>This CS has been developed mostly for aeroplanes up to ELA2 and sailplanes and powered sailplanes. Nevertheless, considering most of the developed standard changes, DGAC France consider that the applicability/eligibility could be extended in many cases to the whole scope of products to which standard changes and repairs apply: aeroplanes of 5700kg MTOM or less and rotorcraft of 3175KG MTOM or less. DGAC France will define in the detailed comments for each Standard Change this proposal.</p>
response	<p>Noted.</p>
comment	<p>259 comment by: DGAC France</p> <p>It is essential that this first step be issued quickly. Nevertheless, it seems also very important to keep on developing in the future other certification specifications for other standard changes and repairs.</p>
response	<p>Noted. See the response to comment 347.</p>
comment	<p>260 comment by: DGAC France</p> <p>In most of the standard changes and repairs, the following wording is used: “The following standards contain acceptable data: FAA Advisory Circular AC 43.13-xx [Note: only one item]”.</p> <p>This wording could be interpreted as providing non-binding guidance to the installer. However, in the scope of CS-STAN, whether one applies strictly AC 43.13-xx, and it is covered by the standard change / repair or one deviates from this AC and then this alternative method shall be approved under Part 21 through a specific change/repair approbation. In order to avoid any misunderstanding, DGAC France suggests another wording as follows: “the data contained in FAA Advisory Circular AC 43.13-xx must be applied”.</p>
response	<p>Not agreed. In the NPA, the ‘Subpart A – General’ of CS-STAN paragraph CS.STAN.30 explains that the referenced documents (and any limitation or restriction there imposed) are applicable.</p>
comment	<p>292 comment by: FNAM (French Aviation Industry Federation)</p> <p>FNAM (Fédération Nationale de l’Aviation Marchande) is the French National Professional Union / Trade Association for Air Transport, grouping as full-members:</p> <ul style="list-style-type: none"> • CSTA: French Airlines Professional Union (incl. Air France)



- **GIPAG: French General Aviation Operators Professional Union**
- SNEH: French Helicopters Operators Professional Union
- CSAE: French Handling Operators Professional Union
- GPMA: French Ground Operations Operators Professional Union
- EBAA France: French Business Airlines Professional Union

And as associated member:

- UAF: French Airports Professional Union

Introduction

The NPA 2014-24 introduces changes in comparison with:

- The Commission Regulation (EC) No 748/2012;
- The Decision No 2003/19/M;

The comments hereafter SHALL BE considered as an identification of some of the major issues the FNAM & GIPAG France ask EASA to discuss with third-parties before any publication of the proposed regulation, consistently with the works led by the General Aviation Task force.

In consequence, the comments hereafter SHALL NOT BE considered:

- As a recognition of the third-parties consultation process carried out by EASA
- As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it;
- As exhaustive: the fact that some articles (or any part of them) are not commented does not mean the FNAM & GIPAG France have (or may have) comments about them, neither the FNAM & GIPAG France accept or acknowledge them All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation, including with the Basic Regulation 216/2008, giving mandate from the Commission and Parliament to EASA.

FNAM General Comments

The FNAM & GIPAG are highly in favour of the introduction of these Certification Specifications, the provisions of which have been introduced in regulation (EU) n°748/2012 (21.A.90B for standard changes and 21.A.431B for standard repairs).

The FNAM & GIPAG are considering the following axes to enhance the project of regulation of the Commission:

- 1- All the points of the CS-STAN, whether modifications or repairs should be allowed only for approved maintenance organisations and CAMOs (eg: excluding Part-66 mechanics not working within an agreed framework);
- 2- This CS-STAN proposal should be open to all aeroplane up to 5 700kg;
- 3- The part "CS SC001a Installation of VHF voice communication equipment" should be extend to IFR operation.

Response

1. Not agreed. Each license holder or organisation approval holder will have to decide if, based on the privileges granted by the license/approval and the rule, he/she is entitled to carry out the release to service of each Standard Change/Repair. See the response to comment 2.

2. See the response to comment 24.



3. Noted. Only a new installation of VHF communication equipment is limited to VFR, which seems to be adequate in the first step. The limitation might be re-considered after experience with CS-STAN.

comment

321 comment by: *The Finnish Aeronautical Association*

Comments by Finnish Aeronautical Association:

General level comments

1.
We are very happy to see this NPA which is a tangible step towards both more proportional regulation and the support of the future of GA in Europe.

2.
The “Applicability/Eligibility” section of most Standard Changes (SCs) proposed in the NPA includes, in our view, confusing text. Our expectation is that these SCs would be applicable mainly in “the light end” of GA aircraft, i.e. including ELA1. However, in many SCs the text suggests that the SC is applicable for e.g. sailplanes and ELA2 aircraft while not applicable for powered ELA1 aircraft? Does “applicable for ELA2” also include “applicable to ELA1” ? We welcome more clarity on this point.

3.
In order to further promote aviation safety and promote uptake of safety enhancing technology, in addition to the SCs included in the NPA, we propose that SCs be defined also for the following installations:

- GPS receiver for aircraft operated in VFR
- ADS-B In/Out for aircraft operated in VFR
- Weather radar or other weather warning functionality (excluding the antenna part of weather radar) for aircraft operated in VFR
- Change from wheel landing gear to skis and vice versa

4.
In addition to these comments, we support the comments to NPA 2014-24 by the Europe Air Sports federation.

response

1. Noted.

2. ELA2 aircraft includes by definition airplanes also encompassed by ELA1 definition. ELA2 is already defined in Part-21.

3. Thank you for your input. Refer to the response to comment 347

4. Noted.

comment

337 comment by: *LAMA EUROPE*

LAMA EUROPE members appreciate EASA for introduction of CS-STAN - Certification Specifications for Standard Changes & Standard Repairs. We were requiring this for many years.



We support the proposed principles and we just hope that for future development of this important topic the principle of keep it simple will be kept.
 But to the certain extent we are surprised that EASA is not making use of the new possibilities, it is relying on their own resources to identify the methods, instead of utilizing the wealth of experience available, and coordinated through industry standards bodies. This will not result in fast filling with methods, this will result again in a kind of static system.
 The ASTM committee F39 has been asked to generate standards for modifications of aircraft to install newer equipment, also for use in the USA. What F39 plans to do directly matches up with the intent of CS-STAN.
 It would be good if EASA can coordinate with the FAA so we have one global standard.
 We also noticed that the NPA draft is referring to AC43-13B when it comes to installation practice. When it comes to the electric installation, F39 did carry over some of the content into new standards. AC43 is static, standards can evolve. So EASA is referring to the static information, instead of using the alive information. This is kind of surprising, as EASA is also on the roster of F39.
 Regarding standard repairs – it is nice to see that the standard books from decades ago seem to be acceptable. Again, these are static. And they are in German language. Why does EASA not follow the line of thinking we started in the other areas, and is instead “tasking” the relevant ASTM committee to transfer this into international standard?
 Could go very well in the two steps we know from F44:
 First is transcript to standard with only minor bug fixes.
 Step two can be updating to today's technology, or implementation of newer strategies.
 This way the “dead” document would become alive again, international, and we are open for the future.
 LAMA EUROPE offers cooperation on further expansion of CS-STAN procedures.

response Noted. The Agency has used references developed by the industry or other regulatory authorities which exist today.

comment 369 comment by: *European Sailplane Manufacturers*

Another general comment is the consequence of a standard change or repair upon the aircraft maintenance program (AMP).

It is true that some of the proposed SC or SR might affect the AMP.

But if the spirit of CS-STAN is to make such changes and repairs much less complicated, then incorporation into the AMP must not nullify such an effect.

Today all AMP need approval of the NAA (the competent authorities of the member states).
 This has proven to be rather slow and costly – at least in some member states.

EASA has proposed to add the option for ELA 1 aircraft not involved in commercial operations to issue a declaration for the AMP by the aircraft owner instead of approval by the competent authority. This is fine if it will become part of the Part-M regulation but only for these aircraft.

Therefore the European sailplane manufacturers propose to add such an option for self-



declaration by the owner also for all other aircraft where standard changes or repairs are being used, when the regarding changes to the AMP need to be implemented. Otherwise the very positive effects of the proposed standard changes and repairs might be fruitless due to impossibility to include them into the AMP in an efficient and feasible way.

response Not agreed. For many Standard Changes there will be no need to amend the AMP. This, together with the alleviation you mentioned for the ELA1, and the possibility of indirect approval of the AMP by CAMO (if used), reduces the cases where there is a need for NAA approval of the AMP. In addition, the current Part-M Light (L), currently under development, is expected to include the self-declaration for all ELA2 aircraft plus certain helicopters, for all type of operations.

comment 376 comment by: FAA

Item 1 (Commentator #1):
Page and Paragraph No: Section 3.2.2, Paragraph 2
Comment: may conflict with our CFR 21.9 which deals with certification of replacement and modification articles
Reason: 21.9 has led to conflict between installations and AFS inspectors stating that non-compliance with 21.9
Recommendation: 21.9 needs to reviewed and revised to allow other methods acceptable to the Administrator

Item 2 (Commentator #2):
Page and Paragraph No: Section 3.2.2, Paragraph 3
Comment: is unclear on how the installer is supposed to mark parts installed using the CS-STAN process
Reason: With no provisions on how to accomplish this there will be lack of consistency
Recommendation: Provide a process or guidelines for marking of parts including what information should be included for parts other than PMA or TSO parts

Item 3 (Commentator #3):
Page and Paragraph No: Section 3.2.2, Paragraph 4
Comment: Suggests the installer is responsible for a separate form to document data and compliance statement other than a simple logbook entry. This will require some education to the maintenance community who is only use to this requirement in a major change or repair scenario.
Reason: Over documentation for a minor alteration
Recommendation: It would seem that a simple logbook entry should suffice as these are minor alterations by definition.

Item 4 (Commentator #4):
Page and Paragraph No: Section 3.2.2, Paragraph 7
Comment: States those changes to the Airplane Flight Manual (AFM) can be made via the CS-STAN process. It would seem that most changes requiring an AFM revision would more than likely be considered a major alteration versus a minor.
Reason: Minor alteration requiring changes to performance numbers, procedures, etc. of



a Airplane Flight Manual would not be minor

Recommendation: This should be limited to only adding information data describing the description and operation of the installed alteration.

Item 5 (Commentator #5):

Page and Paragraph No: Section 3.2.2, paragraph 9

Comment: Requires a form in addition to the logbook entry.

Reason: Over documentation for a minor alteration

Recommendation: The CS-STAN alteration should be simple enough that only a logbook entry would be required

Item 6 (Commentator #6):

Page and Paragraph No: Appendix 1

Comment: Appendix 1 states in each Certification Standard (CS) in section 6 whether the pilot-owner may return to service. This seems redundant and confusing in that section 3.2.2, paragraph 1 states that only properly certificated personnel that are qualified to return to service may do so.

Reason: Conflicts with other sections of the document

Recommendation: Suggest removing this section all together.

Item 7 (Commentator #7):

Page and Paragraph No: General comment

Comment: Overall, the document suggests a very good attempt at defining those types of installations that should be considered minor. Fully support this effort and would like to see the appendix 1 standard changes become a living document and expanded as installations are reviewed.

Reason:

Recommendation:

Item 8 (Commentator #8):

Page and Paragraph No: General comment

Comment: The document does not seem to contain a process to add to Appendix 1 standard changes for additional tasks considered to be minor.

Reason: It would seem to be important to have a consistent method to do so that would encourage the appendix to expand to more items.

Recommendation: Add a process to the document to include how to add future installations considered minor to the appendix

Item 9 (Commentator #9):

Page and Paragraph No: p. 16 Paragraph CS STAN.30 Referenced Documents

Comment: The last sentence in this paragraph is confusing considering references to FAA documents are sprinkled throughout the CS's.

Reason: References to FAA documents in support of accomplishment means is used throughout the document and this paragraph appears to attempt to highlight what part of the FAA would be acceptable to use.

Recommendation: Recommend additional clarification in the example that states the



practices can be used, but specific regulation requirements should be based on European regulations.

Item 10 (Commentator #10):

Page and Paragraph No: Page 9 of 58, 3.2.2.2 and throughout document

Comment: ELA1 and ELA2 are undefined.

Reason: It is preferable that the FAA understand ELA1 and ELA2 in relation to our Light Sport aircraft rules and policy.

Recommendation: Make reference to definition in Regulation (EC) No 1702/2003 at the first occurrence of ELA1 and ELA2.

Item 11 (Commentator #11):

Page and Paragraph No: General, Appendix I

Comment: Have adequately detailed installation criteria to assure the appropriate certification basis continues to be met for all proposed and new Standard Change specifications. If this criteria are insufficient, the responsibility lies with the installer during maintenance.

Reason: EASA policy of not requiring authority approval for certain changes may adverse effect on the importation of these aircraft into the U.S. Our approval systems should be compatible.

Recommendation: Assure these and future specifications have adequate installation criteria.

Item 12 (Commentator #12):

Page and Paragraph No:

Comment: I have no legal comments with regard to the EASA NPA.

Reason:

Recommendation: My only comment is that prior to the changes becoming effective the FAA and EASA may wish to revise the Technical Implementation Procedures for Airworthiness and Environmental Certification of the US/EU Aviation Safety Agreement to reflect the changes set forth in GM 21.A.90B, GM21.A.431B, GM M.A.801 and C-STAN.

Item 13 (Commentator #13):

Page and Paragraph No: General Comment

Comment: Has EASA identified specific changes that will be needed to the FAA-EASA Technical Implementation Procedures (TIP) once the NPA becomes a final rule?

Reason: For example, currently per TIP paragraph 3.3.2.1(a)(iii), the FAA can only accept an EASA repair design approval in the form of a letter from EASA or a DOA. The NPA explains a new EASA form will exist and EASA will no longer approve certain repairs.

Recommendation: Any required changes to the TIP due to this NPA should be coordinated through the Certification Oversight Board to ensure the TIP can be revised in a timely manner and in coordination with the effective date of the final rule.

Item 14 (Commentator #14):

Page and Paragraph No: General Comment

Comment: Based on our telecom on 1-7-15 with EASA, it is prudent to concentrate our



response

efforts on mutual acceptance of Non-Required Safety Enhancing Equipment due to following reasons

1. FAA can implement a policy statement under 21.8(d) "Any other manner acceptable to the FAA" and allow non-required equipment be installed in GA (primary, Utility, Acrobatic) excluding Commuter category.
2. Most current GA installations are focused on aftermarket non-required equipment.
3. This path does not require rule making process which allows the GA community to begin installing Safety Enhancing equipment right away.

Reason:

Recommendation:

Response to item 1: Noted. EASA understands that this is a change in the European rules that may impact the conditions of the bilateral agreement with the US.

Response to item 2: Requirements for the marking of parts is the same as in Part-21, Subpart Q.

Response to item 3: The proposed list of documents to be developed for a Standard change/repair are 'as necessary based on its complexity'. This means that simpler changes/repairs will not require over documentation.

Response to item 4: Not accepted: Most of the current and future Standard Changes do not attract changes to approved sections of the AFM (they would be classified as 'Minor Change', if not treated as a Standard Change), since the AFM changes might only have limitations for the installed equipment itself, not affecting the functionality of the aircraft. However, it is anticipated to cover also changes equivalent to Major Changes within CS-STAN. Currently only the Standard Changes handling the fuel type do require a change to the approved sections of the AFM for adding the new fuel type, but some more might come (safety belt with airbags, etc.) in future amendments to CS-STAN.

Limiting CS-STAN as proposed would heavily decrease the effect of CS-STAN

Response to item 5: The proposed list of documents to be developed for a Standard change/repair are 'as necessary based on its complexity'. This means simpler changes/repairs will not require over documentation.

Response to item 6: According to European rules, under certain conditions established in Part-M M.A.801 (b)3, M.A.803 and Appendix VIII, the Pilot-owner may issue certificates to release to service after maintenance. Under CS-STAN, the changes that the Agency considers that the pilot-owner is suitable to release to service are very limited. In order to be clear, the Agency has indicated which of the Standard changes are suitable for Pilot-owner release.

Response to item 7: This is planned for the near future in a second issue of CS-STAN. This second issue will permit to analyse proposals for inclusion made by the GA stakeholders.

Response to item 8: This is planned for the near future in a second issue of CS-STAN. This second issue will permit to analyse proposals for inclusion made by the GA stakeholders.

The structure of CS-STAN is suitable for adding new Standard Changes.

Response to item 9: While making use of the engineering methods described in AC 43.13, the formal process of approving the change cannot follow the FAA process, but the European system, where Part-66 license holders or approved maintenance organisations have the privilege to approve the Standard change by completing the Form 123 and releasing the aircraft to service.

Response to item 10: Accepted. ELA2 and ELA1 are defined in CS-STAN, 'Subpart A — General' (CS STAN.80 Definitions).

Response to item 11: Under the Standard Changes process it is not necessarily intended to maintain the certification basis. Based on the limitations introduced and the methods



required to be followed with the Standard changes, it is assumed that the airworthiness level is not compromised while the installation of modern safety equipment is encouraged.

EASA understands that this is a change in the European rules which may impact the conditions of the bilateral agreement with the US.

Response to item 12: Noted. EASA understands that this is a change in the European rules which may impact the conditions of the bilateral agreement with the US.

Response to item 13: Noted. EASA understands that this is a change in the European rules which may impact the conditions of the bilateral agreement with the US.

Response to item 14: Noted. Although not only devoted to the installation of non-required safety enhancing equipment, the Standard Changes process will allow the installation of such equipment in European registered aircraft.

Notice of Proposed Amendment 2014-24 p. 1

comment

307 comment by: *Ralf Keil*

Publication language of CS-STAN

CS-STAN is - different to other - CS more or less directed to the owner of simple aircraft (mostly not commercial used) and the affected certifying staff. That means, the biggest part of this staff (not only in Germany, but all over in Europe) will not be able to understand the CS-STAN in English only.

German Aero Club understood, that EASA is not able to translate all documents in all European languages.

German Aero Club asks - based on the importance of this document - EASA therefore, finding a way to translate the CS-STAN into national languages. We know that a official translation often fail by the budget.

Nevertheless, we see the need and suggest two alternative ways:

- using EASAs staff for a "inofficial EASA-translation". That can also be done by cooperation with other companies and organisations and at least crossreading by EASA-staff.
- finding a way to instruct the NAAs in the decision, providing the CS-STAN in the national language.

German Aero Club, as many other organisations offers assistance as possible, if needed.

response

Refer to the response to comment 227.

EXECUTIVE SUMMARY p. 1

comment

187 comment by: *René Meier, Europe Air Sports*

Please adjust the eligibility criteria in the Executive Summary already.

Rationale:



The formula chosen is not clear enough, it leaves room for interpretations and will not create the level playing field have been looking for for years now. To "certain aircraft", to "most sailplanes" is not sufficiently precise in our technical domain.

We therefore would like to add the comment that in general the rationale for the eligibility criteria are not set out. If there is significant complexity associated with the type where individually approved design data would mitigate the risk, there may be a justification for exclusion. By default, all other-than-complex-motor-powered-aircraft should be eligible for CS-STAN's Standard Changes and Standard Repairs. This would reduce the regulatory burden. What the Agency proposes in NPA 2014-24 is, in our view, not sufficient.

Why is there a discrepancy in the span of aircraft included between the Executive Summary and 2.2 "Objectives" on page 5/58?

Furthermore, in 2.3 "Summary of the Regulatory Impact Assessment" (RIA) we find a third version of such a text, slightly different in the wording. This confuses readers.

response See the response to comment 24.

comment

230 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

AOPA agrees with the Agency on the applicability of this NPA. It is a reasonable approach with a proportionate risk. We are glad to see that the Agency is open to expand this in the future as experience is gained.

response Noted.

comment

318 comment by: *Royal Netherlands Aeronautical Association*

We see this NPA as a welcome first step towards a substantial reduction of administrative burden. It should be noted however this NPA doesn't bring much change for the Netherlands, as the proposals are in line with the current situation. In our view, a second phase should bring further reduction of red tape.

Where up to now for activities had to be applied for a 'minor change', this won't be always necessary anymore. This is a great advantage as it saves paperwork. This NPA addresses also some activities which now already take place by maintenance organisations without a Minor Change Process. This is for instance the case when an EASA STC or SB has been issued, or situations the activity isn't a Minor Change.

Also, some of the (sub) activities, e.g electrical wiring of systems, at the moment can't be performed by some companies and has to be outsourced. This NPA doesn't change this, as it addresses mainly what activity can be done, but not by whom. The latter is denoted by Part M. We would like to note that the GA sector would like to see a change on this part as well as this would bring a substantial cost reduction.

Additionally, in line with the current situation, AC43.13 will be used as a guideline. Thus, this won't result into a large change. Yet, the application of AC43.13 will be more formalised, which is a good thing.



We wonder however why a distinction is made between VFR and IFR, weight classes and complex vs. non-complex aircraft. From our point of view there is no distinction between the activities involved in the installation, repair or change of these aircraft. When maintenance organisations are certified for a certain aircraft, they should be able to perform these activities not only for VFR but also IFR. For example CS.STAN.20 should be sufficient.

As the system of EASA STC/ SB's was already in use, we wonder why this won't be extended to FAA STC's. This would benefit the GA significantly, taken into account the origin of many aircraft and equipment. There is a bilateral agreement between the US and EU (*Agreement between the USA and the EU on cooperation in the regulation of civil aviation safety*). It seems to us that this arranges what needs to be mutually recognized before something is allowed, instead of a direct mutual recognition. Thus, it seems that still an EASA STC is still required even when there is an FAA STC. A direct mutual recognition would

An additional explanation of the definition of 'exchange/ replacement' and 'installation' would be desirable. For instance, is it allowed to replace a 25 kHz radio with a 8.33 kHz radio, or would this be categorised as 'installation'?

Does this NPA allow the use of alternative (not OEM, but approved) equipment, whereas this is not possible at the moment ? An explanation is preferred.

The implementation process of the NPA takes much time, while for instance the exchange/ installation of 8.33 kHz radio's is required. Does EASA provide in a fast implementation or work around?

response

Noted.

With regard to your comment on the release to service, please refer to the response to comment 2.

A phase 2 of this rulemaking activity will allow expanding further the list of Standard Changes and might also increase the applicability of some of the changes already proposed in the NPA.

The recognition of the design approvals approved under another system (FAA STCs) is a matter of formulation of a Bilateral Agreement, which is being under consideration due to the GA roadmap.

A replacement of a 25 khz radio with a 8 khz radio is an exchange or replacement. A new installation is the first installation of a radio or the installation of an additional one.

Some of the equipment is required to be ETSO (or similarly) approved. This provides assurance for compliance of design and manufacturing standards.

1. Procedural information p. 3-4

comment

179

comment by: *Howard Torode*

General comment by the European Gliding Union

The European Gliding Union, on behalf of more than 20 national associations, strongly supports the principle and measures set out in NPA2014-24 (CS-STAN). This represents the strongest indication yet that EASA is finally making some progress towards an



ideological understanding of Sport and General Aviation. This measure will be economically beneficial to the GA movement and we look forward to further, better regulations in this vein.

While we will raise further detailed comments to specific points in the leaflets, the basic terms and paragraphs are fundamentally acceptable. The identification of the qualified person as the responsible signatory to the change/repair may raise concerns with some, given that in sport aviation any change is usually made at the specific instruction of the owner, but we feel that the wording carries sufficiently specific terms to be acceptable. For example, the changes and repairs identified are typically required to meet the specified requirements of the associated references rather than demanding them to be unequivocally and demonstrably safe. This is a key feature of this regulation and one which we welcome.

We also note the general mission and purpose of this CS as a developing document. The 'living' nature of the document should enable sensible, proportionate and hopefully, timely, adoption of new technology equipment, without having outdated regulation standing in the way of progress as has been so often in the past. Thus, the Annex material dealing with FLARM, Transponders, Shock Absorbant cushions and 'sporting' instrumentation are particularly welcomed by the soaring community. We are further expectant that future emerging technologies will be addressed in the same practical manner.

response Noted. See also the response to comment 347.

2. Explanatory Note p. 5-6

comment **11** comment by: *J. Soyka BBA*

The NPA should also include GM to Part-145. Standard changes / repairs affect as well maintenance organizations as they may perform and release standard changes / repairs. The current proposal developed GM to M.A.801(a). M.A.801(a) states that it applies to aircraft, except for aircraft released to service by a Part-145 maintenance organization. Therefore a Part-145 maintenance organization normally would not consider GM to Subpart H of Part M.

response Agreed. A new paragraph AMC 145.A.50 has been introduced.

comment **63** comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

The objectives of this NPA is well received in the GA Community and we really appreciate the good gesture by the Agency. Many good things will come out of this amendment, especially if some corrections are made. AOPA are looking forward to work together with the Agency to achieve a high safety standard combined with a user-friendly environment where the regulations are proportional to the risk.

On many of these subjects you open up for a positive effect but then you add a limitation that immediately closes it again which is very unfortunate. By not allowing any of these installations to raise the operational capability of the(eg VFR to IFR) you will not get the



response	<p>positive effect sought after and the community will not get rid of the unproportionally high regulatory burden that rest upon it today. You will not be able to reduce the amount of illegal practices, that you mention in this section, if you hold on to these limitations. By not allowing any new capabilities the same practices will persist. We are prepared to assist the Agency to make the best possible outcome of this.</p> <p>Noted. See the response to comment 24.</p>
comment	<p>109 comment by: UK CAA</p> <p>Page No: 5, and 41 & 43</p> <p>Paragraph No: 2.2 Objectives, and CS-SC 202a/203a for unleaded Avgas fuels</p> <p>Comment: The UK CAA notes that there is a difference in the definitions of what types/classes of aircraft are applicable to these new SC:</p> <p>In the main section, paragraph 2.2. Objectives states:</p> <p><i>“The overall objectives of the EASA system are defined in Article 2 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 2 of this NPA.</i></p> <p><i>The specific objective of this proposal is to create safe and cost-efficient Certification Specifications defining detailed acceptable methods, techniques and practices, including requirements for parts marking and instructions for continued airworthiness to serve as maintenance data for implementing standard changes and repairs to:</i></p> <ul style="list-style-type: none"> — aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; — rotorcraft of 3 175 kg MTOM or less; and — sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.” <p>However, in the CS-SC202a/203a, it states-</p> <p>“2 – Applicability/Eligibility Aeroplanes other than complex motor-powered aircraft and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas.</p> <p>3 – Acceptable methods, techniques and practices To enable the use of unleaded Avgas UL 91 with this Standard Change the following conditions are to be met:</p> <ul style="list-style-type: none"> — the engine installed on the aeroplane is approved for use of unleaded Avgas UL 91 and the aeroplane is already approved for operation with conventional Avgas (according to ASTM D910, Def Stan 91-90, Mil- G-5572, GOST1012-72 or equivalent) or Mogas; or — the engine as well as the aeroplane are approved for operation with Mogas RON 95 (MON 85) in accordance with standard EN 228; — the installed engine has not been modified and meets the specifications of the original engine type certificate; and



— placards are installed/amended as needed to allow the use of the approved fuels.”

This seems to suggest that these SCs do not apply to rotorcraft (or airships) but given what was stated in paragraph 2.2 Objectives, we do not believe that this is intended. It should be entirely possible to operate a piston helicopter, or an airship, on UL 91 if the engine is approved for this fuel.

Justification: Correctness.

Proposed Text: “2 – Applicability/Eligibility

~~Aeroplanes other than complex motor powered aircraft and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas.~~
Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less, rotorcraft of 3 175 kg MTOM or less; and sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2 using Avgas or Mogas.”

response The applicability of each Standard Change/Repair with regard to rotorcraft has been reassessed, and, in many cases, amended to include some rotorcraft..

comment 110 comment by: UK CAA

Page No: 5

Paragraph No: 2.3, Summary of the Regulatory Impact Assessment (RIA)

Comment: UK CAA believes that Option 1 should not state that “The design approval process by a DOA or EASA is no longer required”.

Justification: This implies that there are no implications for design.

Proposed Text: Rather than imply that these standard changes and repairs do not require a design approval issued by the Agency or a DOA, it would be better and more correct to amend paragraph 2.3 to read:

“Option 1: The adoption of the rules proposed in this NPA on Certification Specifications for Standard Changes and Standard Repairs will simplify the process of embodiment of changes/repairs for a number of cases in certain aircraft. The design approval process ~~by a DOA or EASA is no longer~~ European Aviation Safety Agency NPA 2014-24 required. **has been carried out in the consideration of the published standard, so further involvement by DOA or EASA is unnecessary**”. The level of safety is believed to be maintained considering that the design will follow acceptable methods proven by experience.”

response Partially agreed. The NPA text mentions that the design approval process by a DOA or EASA is no longer required, since this is the intended meaning of paragraph 21A.90A when excluding these changes from being subject to Subpart D. The potential safety impact of the Standard Changes/Repairs has been considered in the Certification Specifications and Limitations added as needed for each Standard Change/Repair.

comment 182 comment by: Howard Torode



Comment by European Gliding Union.

Several 'user groups' in Sport/GA have formally expressed the view that, as a general practice, this CS should go further to cover a broader range of 'installations' rather than just 'replacements'. EGU wishes to support this view, with the expressed intent of enabling best practice in pilot awareness through advanced instrumentation. There is no more direct contribution to safety than this and regulation should not stand in its way. Historically, in gliding in particular, many national regulators allowed these freedoms. The gliding community was always able to offer statistics to demonstrate that our historical approach to these matters was acceptable and safe. Such freedoms have recently been driven out in the name of 'regulating to the highest common standard' across Europe. We would like to see the approach of this NPA broadened in accordance with this experience.

We therefore support the views, of IAOPA for example, and seek a broadening of this CS to cover a wider range of installations and equipments.

response Refer to the response to comment 347

comment 188 comment by: René Meier, Europe Air Sports

What is written in 2.2 "Objectives" and in 2.3 "Summary of the Regulatory Impact Assessment is not clear to us.

Rationale
 On the one hand, in 2.2 the statement you make about eligibility is straightforward and clear, on the other what we find in 2.3, Option 1, 2nd paragraph, the words "only", "most", "certain conditions" leaves room for interpretation.

As regards paragraph 3: Whose definition of "well-established best practice" will be used?

And as regards paragraph 4 we think it is now time for a leap, not for cautious step as in our communities we are responsible for our safety, a third party risk stemming from our operations does nearly not exist. Before EASA was established the previous FAA AC 43-13 1A was approved in 1977 and translated by many European States without limiting the application of Standard Changes and Standard Repairs. EAS would appreciate to be informed about the number of and receive evidence of "illegal practises", a very strong term, applied by owners, which certainly is not recommended by EAS.

In our view, your proposals would at best reduce the regulatory burden on our members to a very very limited extent.

To what aircraft the provisions will apply? The picture is different when we read 2.2. Objectives here on page 5 and when we work on the individual CS-SCXXX pages. This must be clarified, page by page, we propose.

response Within the limits of 21A.90B, the applicability of each Standard Change is defined in paragraph 2. of each Standard Change, as also explained in the 'Subpart A – General' of CS-STAN (CS STAN.10).

comment 189 comment by: René Meier, Europe Air Sports



response	<p>Concerning the framed text at the end of 2.3 "RIA": Nasty question: Should these data not have been integrated in your "RIA"? Is it not a bit late to ask for such data now?</p> <p>Rationale: If such new data generate a new "RIA" all of us have to do the work twice.</p> <p>Noted. The data requested helps the Agency to better assess the impact of this rule change and would be beneficial for future amendments of CS-STAN. No additional detailed RIA is planned to be published with the Decision.</p>
comment	<p>239 comment by: ECOGAS</p> <p>General</p> <p>This CS is to be welcomed, it offers the possibility of minor changes / repairs without having to carry out a 21J design organization of aircrafts up to 5700 kg.</p> <p>The intent of the EASA to achieve an improvement / relief to the general aviation is commendable and is going in the right direction.</p> <p>A major disadvantage is the fact that the use of this CS is only possible if the EASA approved the modification / repair as CS standard in advance.</p> <p>In Section 1.4 you can read that the EASA indicates that another NPA will be issued in which the procedures will be described as to who can and how to apply for a new CS -SC or CS -SR which can then be approved by the EASA. There is a risk of further bureaucratisation of procedures and an imponderable delay (not even mentioning the costs).</p> <p>If the national authorities are to be involved in this process, considerable delays and a non-standard implementation in individual EU countries can be expected.</p> <p>The existing CS-SC's can be seen as an introduction, but it is not defined in detail how these CS-SC's can be implemented. The specification of the EASA Form-123 does not show the depth of the documentation (this could be from a simple two-liner to a detailed design documentation, like drawings etc.), which is required for the detection of individual CS-SC or CS-SR's.</p> <p>This raises the question as to who verifies this documentation (Form-123, etc.). The Certifying Staff creates the documentation and announces the release to service for the aircraft. The CAMO has then to inspect these installations / repairs following Form -123 documentation relating to the inspection for continued airworthiness (see GM MA801 and point 4.4.2. of the NPA). Again, the depth of the inspection is open, it can go from the presence of the Form-123 to the detailed inspection of individual documents.</p>
response	<p>Refer to the response to the comment 347.</p> <p>The documentation to be developed with the change would vary, but should be adequate to show compliance with the requirements of CS-STAN. Being more prescriptive with regard to defining the detail of the required documentation will derive to cases for which the required documentation would not be suitable. The Agency considers that some flexibility in the wording of the CS is desirable.</p>
comment	<p>244 comment by: new European Helicopter Association (EHA)</p> <p>2.2 Objectives:</p> <p>This paragraph quotes that this proposal is aimed at;</p> <p>“standard changes and repairs to;</p> <ul style="list-style-type: none"> · Aeroplanes of 5700kg MTOM or less;



- Rotorcraft of 3175kg or less;
- Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

These groups of aircraft are repeated in paragraph **2.3, Summary of the RIA.**

EHA agrees with the NPA’s proposal “to create safe and cost-efficient Certification Specifications” etc, for aeroplanes of 5700kg MTOW or less, rotorcraft of 3175 MTOM or less, and sailplanes, balloons and airships as defined in ELA1 or ELA2.

However, all of the Standard Change or Repair leaflets in Appendix 1 exclude rotorcraft completely, with the exception on those rotorcraft included in ELA2 (VLR).
As the Terms of Reference for this NPA have been changed since the NPA was issued, it would also appear that there is no possibility for rotorcraft to be included in any future issue of the NPA or subsequent rule change.

EHA strongly disagrees that rotorcraft (with the exception of those included in ELA2) are excluded from the applicability of all the Standard Changes or Standard Repairs. We believe that excluding rotorcraft and, in fact, larger non CMPA fixed wings, is not justified, not proportional and negatively impacts the owners/operators of these aircraft. We feel that these alleviations should be available to all groups of aircraft as stated in paragraph 2.2 and 2.3 of the NPA.

response Partially agreed. Where comments have been received, the applicability of each Standard Change/Repair for an extension to rotorcraft has been reconsidered. Depending on each case, the applicability has been modified (or not) to extent it to rotorcraft, in some cases with limitations.

comment 248 comment by: ECOGAS/SVFB/SAMA

A major disadvantage is the fact that the use of this CS is only possible for those modification / repair as CS standard as specified in this NPA 2014-24.

In Section 1.4 EASA indicates that another NPA will be issued in which the procedures will be described as to
>who can and
>how to apply for a new CS -SC or CS -SR **which can then be approved by the EASA.**

There is a risk of further bureaucratisation of procedures and an imponderable delay (not even mentioning the costs).

If the national authorities are to be involved in this process, considerable delays and a non-standard implementation in individual EU countries can be expected.

The FAA world allows the MRO and his staff to work within the limits of AC 43 without further administrative process and within EASA SME's should get the same possibilities as long as the respective aircraft is not active in Mass Transport.
If this goal is not reached it is a considerable economical disadvantage of MRO's within EASA as compared to others.

As an example of the restrictions of what is possible within the limits of this NPA versus



FAA consider this:

The existing CS-SC's can be seen as an introduction, but as it is not defined in detail how the CS-SC's can be implemented it leaves a wide field of different implementations open:

The specification of the EASA Form-123 does not show the depth of the documentation.

-> if a simple statement: repair performed according AC43 chapter X , para x to y then it's welcome.

-> if volume of documentation is required, there is not much progress as from the present system.

-> if the verification to the documentation is kept within the MRO (Form-123, etc.) and can be created by Certifying Staff the administrative process remains simple.

-> If CAMO needs to be involved, it has to verify that installations / repairs following Form -123 documentation satisfy the (eventually) changed requirements for continued airworthiness (see GM MA801 and point 4.4.2. of the NPA).

-> As depth of the verification is open it could range between Form-123 to the detailed verification to an unlimited number of individual documents and this would not mean any progress.

response

See the response to comment 347.
See also the response comment 239.

comment

251 comment by: *General Aviation Manufacturers Association (GAMA)*

GAMA believes that EASA should review the applicability of the current and future standards in the change and repair appendices to rotorcraft. Just as in the fixed wing community, the light European rotorcraft community can see tremendous benefit from many of the proposed modification and maintenance permissions included. For the safety and vitality of the European rotorcraft community, EASA should work with this segment of aviation to assure they can see the same benefits as aeroplanes will.

response

Partially agreed. Where comments have been received, the applicability of each Standard Change/Repair for an extension to rotorcraft has been reconsidered. Depending on each case, the applicability has been modified (or not) to extent it to rotorcraft, in some cases with limitations

comment

319 comment by: *Ralf Keil*

Release to service of standard changes/repairs:

German Aero Club agrees, that the CS-STAN can reduce the regulatory burden for general aviation in this segment.

It is understood, that standard changes/repairs are in general not pilot-owner-tasks. On the other side this tasks are not "witchcraft" and need to be released by qualified staff. The purposed L-License will be the affected Part-66-license in future. As we know, the rights for this kind of license will be experience based.

The current regulation is, that only certifying staff with a national license (issued by NAA)



is allowed to release such tasks. This regulation restricts significantly national aeroclubs, holding self-educated and trained maintenance staff with a lot of experience in maintenance.

Therefor German Aero Club propose the issue of "minimum requirements" for release of standard changes/repairs, instead of the wording "... is not suitable for release to service by the Pilot-owner"

These requirements could be issued as a AMC-Material (adressed to CS-STAN, better Part-M or 66) and shoud describe the qualifications needed by this certifying staff. Ideally these requirements enter into force with the publication of the CS-STAN.

response Refer to the responses to comments 2 and 225.

comment 340 comment by: LAMA EUROPE

Applicability/Eligibility – some of the formulation using ELA2 definitions are confusing:
 At 2.2. Objectives defines for what kind of aircraft CS/STAN apply:
 – aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;
 – rotorcraft of 3 175 kg MTOM or less; and
 – sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.
 And then for example at CS-SC051a FLARM
 Applicability: Sailplanes, powered sailplanes and aeroplanes considered as ELA2 aircraft.

BUT ELA 2 already includes Sailplanes and powered sailplanes...
 This is also related to comment 342.

Please consider better definition of applicability, so people can easily understand it! Also consider new thinking of aircraft definitions considered in GA Roadmap effort.

response See the response to comment 188.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.1. Decision 2012/020/R p. 8

comment 13 comment by: Isavia ltd.

response Comment is missing.

comment 349 comment by: René Meier, Europe Air Sports

GM M.A.801 Aircraft certificate of release to service after embodiment of a Standard Change or Standard Repair.

In our view what is proposed is not proportionate to the operations within the sports and recreational aviation community.

Rationale:
 Much simpler rules with regards to releases to service (pt. 1) and particularly to documenting (pt.4) Standard Changes and Standard Repairs have to be put in place.The



same applies to Record keeping (under pt. 5). What we find might be suited for operating and maintaining top-end GA aircraft, but not for sports and recreational aircraft and volunteer aviators. Too much emphasis is put on "paperwork", too much money has to be invested in it, money not being available for flying, reducing the flight hours, to the detriment of flight safety.

response Not agreed. The 'release to service' process is described in Part-M and Part-145. Since the Standard Change/Repair process does not encompass the approval of a detailed design by the Agency or a DOA, the installer is identified as the responsible person for guaranteeing compliance with the CS. With regard to documenting and record keeping, it is important that the changes are documented. This will allow a better traceability of the aircraft history and the determination of responsibilities.

comment 371 comment by: *European Sailplane Manufacturers*

In this NPA, the amendments into Part-21 and Part-M are in both cases made as GM (guidance material).

The European sailplane manufacturers consider this as being too weak.

We have already experienced, that NAA / competent authorities have already said, that AMC and GM are only "soft law" and therefore are not necessarily relevant. Furthermore there is the issue of this type of material being only available in English language (see our general comment about the language issue).

Of course we understand, that change in the regulations itself need to be implemented by the European Commission which would take much longer than an EASA decision with the GM and the CS-STAN.

But we feel that it should be not "only GM" but also / or "AMC accepted means of compliance". Our understanding is that AMC must be acceptable to a NAA, whereas GM is just some guidance, which is too weak.

response Agreed. The text GM to M.A.801 in the NPA has been converted into AMC M.A.801 in the relevant Annex to the Decision.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.2. Decision No 2003/19/RM p. 8-12

comment 2 comment by: *Samionics / General Aviation Avionics*

"Depending on its nature, for certain Standard Changes and Standard Repairs, the Certification Specification CS-STAN might restrict the eligibility for the issuance of the release to service to certain persons."

The term "Pilot-Owner" is seen many times, actually in all? CS-STAN paragraphs. Performing standard changes should not be mixed with pilot-owner maintenance and hence the term "pilot-owner" should not be used. It should be clarified that an eligible person is a person holding a valid AML for the particular aircraft type/modell in question. As most standard changes adress electrical systems it should be important to note if B2 is



	required or if B1 is enough for that particular task.
response	<p>The release to service of the Standard Change/Standard Repair will have to be carried out by the natural person or legal person (maintenance organisation) entitled to do so in accordance with their maintenance release privileges. These privileges are defined in the corresponding rules (currently Part-M, Part-145, and Part-66), and it is their responsibility to carry them out as allowed by the correspondent license and rating (for natural persons) /approval certificates (legal persons) taking into account existing limitations and the legal framework defined by the rules.</p> <p>In particular for the release to service by M.A.801 b2 certifying staff (case of natural persons), paragraph 66.A.20 and the person's license should be the basis for determining the person's eligibility for the release to service.</p> <p>For most Standard Repairs, the Agency considers that the Pilot-owner does not have the adequate knowledge to guarantee the implementation of the Standard Changes/Standard Repairs, and, for clarity, this has been expressed in CS-STAN.</p> <p>When the provisions for embodiment of a Standard Change/Standard Repairs are fulfilled, Part-66 Category B (and in the future L) license holders, are entitled to carry out the-release to service if done in accordance with the applicable (sub)category, rating and license limitations.</p>
comment	<p>12 comment by: J. Soyka BBA</p>
	<p>The GM concerning standard changes / repairs should better be given in line with M.A. 304 Data for modifications and repairs. To my mind it fits better to the paragraph concerning appropriate maintenance data as it is already mentioned as possible data.</p>
response	<p>Noted. This comment will not lead to a change in the proposed rule, since in M.A.304 (c) it is already mentioned that the data contained in these certification specifications shall be used to carry out modifications and repairs.</p>
comment	<p>41 comment by: CAA-NL</p>
	<p>GM M.A.801 item 6, Instructions for the Continuous Airworthiness.</p> <p>Due to the Standard Change/Standard Repair being embodied, the aircraft instructions for continuing airworthiness may need to be updated. <u>This update is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.</u> As stipulated in paragraph M.A.302, the aircraft owner or CAMO need to assess if the changes in the instructions for continuing airworthiness of the aircraft require <u>to amend the Aircraft Maintenance programme and obtain its approval.</u></p> <p>The 2 underlined sentences seems to be contradicting each other, to avoid confusion it would be advisable to explain why approved data need another approval when incorporated in the AMP.</p>
response	<p>Not agreed. The instructions for continuing airworthiness (ICA) do not need a dedicated approval. Due to the new ICA, the aircraft maintenance programme (AMP) may need to be revised, and the approval of the AMP has to be done in accordance with Part-M M.A.302. See also the response to comment 369</p>
comment	<p>42 comment by: CAA-NL</p>



	<p>GM M.A.801 item 9, EASA Form 123 — Standard Change/Standard Repair (SC/SR) embodiment record. For completeness and clarity please add some words to the Notes under the Form itself: Notes: ... The aircraft owner should be provided with copies of the documents referenced in box 5, box 6 marked with an asterisk '*' and box 7.</p> <p>GM M.A.801 item 9, EASA Form 123 — Standard Change/Standard Repair (SC/SR) embodiment record. We wonder whether it was useful to include for clarity also the aircraft registration marks in the completion instructions for box 3.</p>
response	Agreed. Text in Form 123 is changed according to the two proposals.
comment	<p>93 comment by: Avionitec Ltd</p> <p>"This includes responsibility in respect of an adequate design, the selection/manufacturing of suitable parts and their identification, documenting the change or repair, generation of amendment of repair manuals and instructions as needed, embodiment of the change/repair, releasing the aircraft to service and record keeping."</p> <p>Delete Generation AFMS or ICA. Basically Equipment Manufacturer should provide this Informations otherwise the installers try to issue this documents and the result is that we get AFMS and ICA's with different content which makes no sense and there gives no standarisazion of the content.</p>
response	Not agreed. The installer must take the responsibility for the documents that need to be amended. The installer can refer to documentation provided by others if this is considered the best option.
comment	<p>104 comment by: Swedish Transport Agency</p> <p>(3.2.2, p8 item 1) GM M.A.801 Extract from item1: "Only natural or legal persons entitled to release to service an aircraft after maintenance in accordance with Part-M or Part-145 are considered as an eligible installer responsible for the embodiment of a Standard Change or Standard Repair when in compliance with applicable requirements."</p> <p>- It should be stated (highlighted) in the regulation or at least in the AMC, that the certifying staff has the privilege to perform the standard changes and repairs according to CS-STAN.</p>
response	Independent certifying staff is entitled, in accordance with Part-M, to release the aircraft to service based on the scope of the privileges of their license and the nature of the change. The text proposed in the NPA already specifies this. No changes are introduced due to this comment. Refer also the response to comment 2.
comment	<p>105 comment by: Swedish Transport Agency</p>



(3.2.2, p8) GM M.A.801
 When a maintenance organisation want to use the possibility to perform standard changes and repair according to CS-STAN, they need to have procedures. An organisation may use different personnel for the development and for the performance of the CRS.

Therefore the MOE/MOM (*AMC to 145.A.70(a) and Appendix IV to M.A.604*) should contain a chapter to cover this.

response Partially agreed. The approved maintenance organisations should describe in their Maintenance Organisation Exposition (MOE) the process to be followed to embody a change/repair in accordance with CS-STAN. However, this can be developed under existing MOE headings listed in Appendix IV to AMC.A.604 or in AMC 145.A.70.

comment 106 comment by: *Swedish Transport Agency*

(3.2.2, p8-12) GM M.A.801

- It would be a help for the users, if the guidance text item 1 to 8 in a way coincides with the field numbers in the EASA 123. In that case the “Completion instructions” may be removed.
- The use of word “chapter” in EASA 123. (Field 9a, 9b and “Completion instructions:” number 2)
 Is the intension to refer to the “Group system number” for example “CS-SC001a” or “CS-SR801a” of the
 standard change or repair?
- EASA 123 field 5.
 Content unclear when compared with the “Completion instructions:”
 Is it only the AFM that is affected?
- It should be stated that it must be only one EASA 123 used for each aircraft, even though if it is the same standard change performed on several aircrafts.
- EASA 123 field 11.
 Should include the identity of the organisation and/or person responsible for the embodiment. (AML licence No or approval reference number MF/145).

response Partially accepted. Text in the form has been changed taking into account some of these comments.

comment 111 comment by: *UK CAA*

Page No: 8

Paragraph No: 3.2.2, GM M.A.801, paragraph 1 Release to service and eligible persons

Comment: The 2nd sub-paragraph states:

“Since the design of the Standard Change or Standard Repair does not require specific approval, the natural or legal person releasing the aircraft to service after the embodiment



	<p><i>of the change or repair is taking the responsibility that the Certification Specifications are fulfilled.”,</i></p> <p>It is unclear whether this means that the CS-STAN has been complied with. The installer will presumably not be expected to take responsibility for compliance with basic design codes compiled with as part of initial certification.</p> <p>Justification: Clarity is required regarding responsibilities.</p>
response	Accepted. Indeed, it is meant to state that CS-STAN has to be complied with.. The text has been amended to avoid misunderstanding.
comment	<p>112 comment by: UK CAA</p> <p>Page No: 8/9.</p> <p>Paragraph No: 3.2.2, GM M.A.801, paragraph 2 Parts and appliances to be installed as part of Standard Change/Standard Repair</p> <p>Comment: It is unclear whether this paragraph intends that it is not possible to modify ETSO parts/appliances under this approval.</p> <p>Justification: Clarity is required.</p>
response	Noted. The intention of the paragraph is that articles authorised as ETSO cannot be altered as part of the Standard Change. Also clarity has been provided with regards to the use of articles equivalent to articles authorised as ETSO.
comment	<p>113 comment by: UK CAA</p> <p>Page No: 10</p> <p>Paragraph No: 8, Embodiment of more than one Standard Change</p> <p>Comment: It is unclear what is intended by “related Standard Changes”? Would it be for example a radio installation and associated antenna installation? Also, are two Standard Changes from the systems grouping allowed e.g. VHF Com and ADF?</p> <p>Justification: Clarity is required.</p>
response	In both cases the changes can be considered related. In some cases it may be interesting to consider two different standard changes in case the change is released by different persons. Under the same person’s responsibility it may be convenient to group related standard changes to simplify the management of associated manuals/ instructions and other related documents.
comment	<p>114 comment by: UK CAA</p> <p>Page No: . 11, and 19 onwards for each Standard Change</p>



Paragraph No: Form 123, and paragraph 5 Manuals for each Standard Change

Comment: The terminology for instructions for continued/continuing airworthiness should be standardised to either ‘continued’ (to be consistent with Part 21) or as ‘continuing’ (as used in Part M).

Justification: The use of different terminology may be interpreted to mean that there is a different intent in their respective use.

Proposed Text: Standardise on the use of ‘continued’ as used in other initial airworthiness documents (i.e. CS and Part 21).

response Agreed. Both Part-M and Part-21 use both terms. The term retained in the Decision is ‘continuing’ (as quoted in 21A.90B and 21A.431B).

comment 147 comment by: *Federal Office of Civil Aviation FOCA*

p. 8: GM M.A.801 Aircraft certificate of release to service after embodiment of a Standard Change or Standard Repair; Section 1. It is not clear which Part-M or Part-145 licences are the baseline. In the definitions of the Standard changes it is also not stated if e.g. a B1/B2 licence is required.

3.2.2.1. should more clearly describe the envisaged eligibility for possible pilot-owner release to service.

response ‘In accordance with Part-M’ means here that M.A.801 (b) 2. also applies. Therefore, the related privileges for each license as defined in Part-66 have to be considered in order to determine, depending on the Standard Change, each license holder’s eligibility for the change. Defining in a more prescriptive manner the license privileges required for the embodiment of each Standard Change could be an exercise doomed to failure. Refer also the response to comment 2.
In the proposed text, M.A.801 (b)3. Pilot-owner has been excluded as eligible person for the standard change.

comment 229 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

It can be expected that the equipment which will be installed as a standard change is provided by a manufacturer including all necessary material like installation instructions, part lists and other documentation like drawings and more. If the person who is entitled to release the aircraft for service has to take the full responsibility for more than the correct installation process and the testing of the installed equipment, it seems possible that nobody wants to take the responsibility, especially the responsibility **in respect of an adequate design, the selection/manufacturing of suitable parts**. As long as the person releasing the aircraft is not able to control the process of manufacturing or selecting of parts, it cannot be expected that he will take the responsibility for it.
The responsibility should be splitted in several parts where the persons or companies who



response	<p>control the particular process have to take the responsibility for.</p> <p>For some of the equipment installed in accordance with the Standard Change, the requirement for an ETSO article allocates the responsibility of proper manufacturing of the equipment to the ETSO approval holder.</p> <p>For other parts, the situation is described in Paragraph 2 of AMC M.A.801.</p>
comment	<p>243 comment by: ECOGAS</p> <p>3.2.2 GM M.A.801 Release to Service</p> <p>1. The Certifying Staff is responsible for the compliance of the CS specifications including possible changes and additions to the Aircraft Manuals.</p> <p>2. The material used in this area, must have an ETSO authorization. Therefore, the modifications are reduced to only a few components.</p> <p>What about parts that have only have a TSO authorization (FAA approval)?</p> <p>Although, this issue is referred to in EASA Form 1, there is no clear statement as to whether it is mandatory to use only parts with EASA Form 1.</p> <p>According to definition EASA Form 1, an ETSO component can always be issued if the manufacturer is authorized under 21G.</p> <p>What status do components which are additionally required for the installation have?</p> <p>3. The EPA Marking of all built or modified components is required due to 21Q. It will be difficult for the individual Certifying Staff when creating a new CS-SC / CS-SR in its entirety, applying to the EASA and then having to implement it.</p> <p>4. In Chapter 4 the EASA explains which, sometimes, complex documents are required to prove the airworthiness of a CS modification or a CS repair. It is pointed out by EASA that it sometimes requires engineering activities to manage the complex verification.</p> <p>The procedures to manage the CS-modification or CS-repair should be so simple as possible, an indication of FAA AC 43-13-1B or -2B should be sufficient.</p> <p>If not, it is to be feared, a CS-SC or CS-SR can only be applied and implemented by a suitably structured design or maintenance organisation. The demand for e.g. the design and revision of the documentation require a high background knowledge in the design area.</p> <p>Only when the exact requirements are established for the implementation of a CS -SC or CS-SR (installation instructions), the "normal" Certifying Staff will be able to carry out the installation and documentation.</p> <p>5. The Certifying Staff is responsible for creating the documentation (Form-123, all changes to the manuals etc.) and handing it over to the owner. The owner is, as part of his responsibility for the continued airworthiness of his aircraft, obliged to provide these documents for all maintenance work or inspections carried out on his aircraft.</p> <p>The experience, in general aviation, shows, that when an aircraft changes ownership documents remain on the track. In other words, it is foreseeable that a complex documentation will be faulty within a short time.</p> <p>EASA Form-123 with simple description in accordance to FAA 43-13-1B or -2B could reduce the risks of misunderstanding of CS-modification / CS-repair documentation.</p> <p>6. The EASA refers to the "Instructions for Continuing Airworthiness", unfortunately it is not yet specified as to which documents are required. Therefore, a non-calculable demand of requirements for those involved exists.</p> <p>7. The possible change in the Aircraft Flight Manual shows a complex procedure. The necessary changes are to be described in accordance to the CS-SC or CS-SR in detail or narrowing them down. In the existing CS examples, indications are given, but no clear guidelines. The change of e.g. a navigation system should as a result have a detailed</p>



reference in the AFM. To have simple AFM Supplements it could be helpful for the Certifying Staff to use manufacturer operating instructions direct as supplement without additional documentation.

8. The installation of multiple CS-SC's will only then be a problem if they occur in the same aircraft systems and the overlap of the modification is not considered during the EASA approval or installation. An adaptation of multiple CS-SC's could then lead to a possible change of a CS-SC's, which would result in a new approval.

9. Form-123 is simple and clear, but the devil is in the detail. The Certifying Staff must first of all have the availability of the, in the various areas, referenced data. In the current structure of the NPA it cannot be concluded as to how detailed the information of each CS-SC's is. The verification for a CS-SC, which the EASA holds, should be forwarded to each Certifying Staff, who would like to install this CS-SC at some point.

This raises the question as to who pays for the creation of a CS-SC, their approval by the EASA as CS-SC-XXX and who is at that moment the owner of this approval. The specified CS-SC or CS-SR's are generally held, which means that for a "specific component" special installation requirements have to be proofed.

response

1. Noted.
2. Parts can only be installed when it is done in compliance with Part-M/-145 and -21. Refer also to the response to comment 250.
3. Not agreed. To comply with Subpart Q of Part-21 there is no need to request approval from EASA.
4. Natural persons holding a Part-66 license may not be suitable for implementing an SC or SR. They should assess if they are entitled to do so and if they are knowledgeable to embody a particular change/repair.
5. New owners should request from the previous owner any necessary documentation when the aircraft ownership changes.
6. The need for such instructions will be determined by the change/repair. The installer should be able to produce this material or otherwise refrain from installing the change/repair. Depending on the change/repair, the instructions for continuing airworthiness may be very simple.
7. The person responsible for the embodiment of the Standard Change/Repair may refer, as needed, to documentation generated by others. However, responsibility for the change/repair and adequacy of the related documentation is not transferred.
8. Noted. Please note that there is no EASA approval on the process.
9. The certifying staff should fill the Form 123 for record keeping purposes, for traceability and as evidence that the requirements for the CS-STAN have been complied with.

comment

250

comment by: *General Aviation Manufacturers Association (GAMA)*

To assure that the proposal realises the full benefit for the light GA fleet in Europe, GAMA recommends that EASA assures that section 3.2.2 be slightly modified to allow for items that meet ETSO or equivalent. Currently, EASA has a bilateral agreement with Canada and Brazil which includes recognition of these articles however these articles may not include an ETSO-A. For the policy to be fully effective, these articles should be able to be easily incorporated into the CS-STAN program without further paperwork and



approval. Further, there are articles which contain FAA TSO which should be considered for applicability into the program as well. As EASA works in a more global manner with global NAAs, GAMA believes it will be important to include language that allows for the acceptance of these articles which clearly meet the technological needs of the program but which may not carry the ETSO-A.

response Partially agreed. Bilateral agreements overrule Regulations (EU) No 1321/2014 and (EU) No 748/2012; therefore, the articles considered equivalent to ETSO articles under the bilateral agreements are acceptable for installation in the aircraft. Grandfathered articles in accordance with Regulation (EU) No 748/2012 are also considered equivalent. The text has been clarified.

Standard Change could potentially refer to articles fulfilling FAA TSO in case that no ETSO would exist, though this is not the case in this edition of CS-STAN.

comment 252 comment by: *ECOGAS/SVFB/SAMA*

3.2.2 GM M.A.801 Release to Service

1. Certifying Staff is responsible for the compliance of the CS specifications including possible changes and additions to the Aircraft Manuals.

2. Now, as the material used in this area, must have an ETSO authorization the possible modifications are reduced to only a few components.
If parts that have only a TSO authorization (FAA approval) they should be accepted without any further administrative process for aircraft not in mass transport.
This is referred to in EASA Form 1 but there is no statement as to whether it is mandatory to use only parts with EASA Form 1.
According to definition EASA Form 1, an ETSO component can always be issued if the manufacturer is authorized under 21G.
What status do components which are additionally required for the installation have?

3. The EPA Marking of all built or modified components is required due to 21Q. It will be difficult for the individual Certifying Staff when creating a new CS-SC / CS-SR in its entirety, applying to the EASA and then having to implement it.

4. In Chapter 4 EASA explains which documents, (complexity should be avoided) are required to prove the airworthiness of a CS modification or a CS repair. EASA states that sometimes this requires engineering activities to manage complex verification.
Only if procedures to manage CS-modification or CS-repair are kept simple, like detailed specific reference to FAA AC 43-13-1B or -2B this NPA will create the positive effect on SME's. .

With exact requirements established for the implementation of a CS -SC or CS-SR (installation instructions) Certifying Staff will be able to carry out the installation and documentation.

5. Certifying Staff is responsible for creating the documentation (Form-123) including all changes to the manuals etc.) and hand- over to the owner. The owner is responsible for continued airworthiness of his aircraft.
EASA Form-123 with simple description in accordance to FAA 43-13-1B or -2B will reduce risks of misunderstanding CS-modification / CS-repair documentation and assure that documentation remains updated at an handover of the aircraft from one owner to the



other.

6. The EASA refers to the "Instructions for Continuing Airworthiness", unfortunately it is not yet specified as to which documents are required. Therefore, a non-calculable demand of requirements exists.

7. The possible change in the Aircraft Flight Manual shows a complex procedure. The necessary changes are to be described in accordance to the CS-SC or CS-SR in detail or narrowing them down. In the existing CS examples, indications are given, but no clear guidelines. The change of e.g. a navigation system should as a result have a detailed reference in the AFM. Direct use of manufacturer operating instructions as supplement without additional documentation will keep AFM Supplements simple.

8. Form-123 is simple and clear but the devil is in the detail. The Certifying Staff must first of all have the availability of the in the various areas referenced data. The current structure of the NPA is not conclusive as to how detailed the information of each CS-SC's is. The verification for a CS-SC held by EASA should be forwarded to each Certifying Staff, who would like to install this CS-SC at some point.

response See the response to comment 243.

comment 261

comment by: DGAC France

As concerns paragraphs 6 Instructions for continuing airworthiness and 7. Aircraft Flight manual supplement, these considerations seem more linked to Part 21 and the certification specifications of the corresponding aircraft (CS-VLA, CS-23, CS-VLR, CS-27, etc.). If kept in this GM, it could be in contradiction to these certification technical requirements.

It is therefore proposed to withdraw these paragraphs from this GM and to create specific CS-STAN paragraphs in its preamble, as follows:

“CS STAN.40 - Instructions for the continuing airworthiness
 Due to the Standard Change/Standard Repair being embodied, the aircraft instructions for continuing airworthiness may need to be updated. This update is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.

CS STAN.50 - Aircraft Flight Manual supplement
 Due to the Standard Change/Standard Repair being embodied, the Aircraft Flight Manual may need to be updated. This manual supplement is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.

CS STAN.60 – Guidance Material [...]”

And as concerns GM M.A.801, it should be read as follows:

“6. Instructions for the continuing airworthiness
~~Due to the Standard Change/Standard Repair being embodied, the aircraft instructions for continuing airworthiness may need to be updated. This update is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.~~ As stipulated in paragraph M.A.302, the aircraft owner or CAMO need to assess if the changes in the instructions for continuing airworthiness of the aircraft require to amend the Aircraft Maintenance programme and obtain its approval.

7. Aircraft Flight Manual supplement
~~Due to the Standard Change/Standard Repair being embodied, the Aircraft Flight Manual may need to be updated. This manual supplement is considered part of the Standard~~



	<p>Change/Standard Repair, and, therefore, requires no specific approval. 8-Embodiment of more than one Standard Change”</p>
response	<p>See the response to comment 300.</p>
comment	<p>300 comment by: <i>FNAM (French Aviation Industry Federation)</i></p> <p>As concerns paragraphs 6 Instructions for continuing airworthiness and 7. Aircraft Flight manual supplement, these considerations seem more linked to Part 21 and the certification specifications of the corresponding aircraft (CS-VLA, CS-23, CS-VLR, CS-27, etc.). If kept in this GM, it could be in contradiction to these certification technical requirements.</p> <p>It is therefore proposed to withdraw these paragraphs from this GM and to create specific CS-STAN paragraphs in its preamble, as follows:</p> <p>“CS STAN.40 - Instructions for the continuing airworthiness Due to the Standard Change/Standard Repair being embodied, the aircraft instructions for continuing airworthiness may need to be updated. This update is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.</p> <p>CS STAN.50 - Aircraft Flight Manual supplement Due to the Standard Change/Standard Repair being embodied, the Aircraft Flight Manual may need to be updated. This manual supplement is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.</p> <p>CS STAN.60 – Guidance Material [...]”</p> <p>And as concerns GM M.A.801, it should be read as follows:</p> <p>“6. Instructions for the continuing airworthiness Due to the Standard Change/Standard Repair being embodied, the aircraft instructions for continuing airworthiness may need to be updated. This update is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval. As stipulated in paragraph M.A.302, the aircraft owner or CAMO need to assess if the changes in the instructions for continuing airworthiness of the aircraft require to amend the Aircraft Maintenance programme and obtain its approval.</p> <p>7. Aircraft Flight Manual supplement Due to the Standard Change/Standard Repair being embodied, the Aircraft Flight Manual may need to be updated. This manual supplement is considered part of the Standard Change/Standard Repair, and, therefore, requires no specific approval.</p> <p>8-Embodiment of more than one Standard Change”</p>
response	<p>Agreed. The text has been amended as proposed.</p>
comment	<p>303 comment by: <i>FNAM (French Aviation Industry Federation)</i></p> <p>It is mentioned in §4 that “and both EASA Form 123 and the release to service required after the embodiment of the Standard Change or Standard Repair, should be signed by the same person” and in form 123 completion instruction #11 “Give full name details and certificate reference used for issuing the aircraft release to service.” Although it is obvious that it should be the same person when applying directly AC. 43-13, whenever a design conception is required, it is more obvious that the person who will develop the design will not be the one to release the aircraft.</p>



	<p>Therefore, the following is proposed: In §4: “and both EASA Form 123 and the release to service required after the embodiment of the Standard Change or Standard Repair, could should be signed by the same person” In form 123 completion instruction #11 “Give full name details of the person responsible for the design of the SC/SR and certificate reference used for issuing the aircraft release to service.”</p>
response	<p>Not agreed. The system as proposed is relying that the installer holds a license that grants him/her with the privilege to embody the change. With this action he/she also attests compliance with the CS-STAN. In the case where the conceptual design is required, this probably may not fall under the Standard Change process and, therefore, a DOA or the approval of the Agency would be required (in this case the Part-21 design approval process should be followed).</p>
comment	<p>317 comment by: <i>DGAC France</i></p>
	<p>As concerns §5 Record keeping and Form 123, M.A.305 applies to the person responsible for the management of continuing airworthiness (owner or CAMO). It is therefore proposed to modify it as follows: 1. In the 2nd and 3rd paragraph of §5 Record keeping : “[...] In addition, paragraph M.A.305 requires that the aircraft owner the person responsible for the aircraft management of continuing airworthiness keeps the status of the changes/repairs embodied on the aircraft in order to control the aircraft configuration and manage its continuing airworthiness. With regard to Standard Changes and Standard Repairs, the information provided to the owner the person responsible for the aircraft management of continuing airworthiness may be listed in Form 123 and should include, as required, a copy of any modified aircraft manual and/or instructions for continuing airworthiness. [...]” 2. In Case 12 of Form 123, replace “owner” by “the person responsible for the aircraft management of continuing airworthiness”. 3. In the completion instructions; add “12. the person responsible for the aircraft management of continuing airworthiness is the owner or the CAMO”.</p>
response	<p>Agreed. The text has been amended accordingly.</p>
comment	<p>372 comment by: <i>European Sailplane Manufacturers</i></p>
	<p>In this NPA, the amendments into Part-21 and Part-M are in both cases made as GM (guidance material). The European sailplane manufacturers consider this as being too weak. We have already experienced, that NAA / competent authorities have already said, that AMC and GM are only “soft law” and therefore are not necessarily relevant. Furthermore thee is the issue of this type of material being only available in English language (see our general comment about the language issue). Of course we understand, that change in the regulations itself need to be implemented by the European Commission which would take much longer than an EASA decision with the GM and the CS-STAN. But we feel that it should be not “only GM” but also / or “AMC accepted means of</p>



	<p>compliance”. Our understanding is that AMC must be acceptable to a NAA, whereas GM is just some guidance, which is too weak.</p>
response	<p>See the response to comment 371.</p>
comment	<p>373 comment by: <i>ECOGAS/SVFB/SAMA</i></p> <p>The need for an EASA Form 1 is addressed in Part-21 and Part-M, while less restrictive rules may, for instance, apply for ELA1 and ELA2 aircraft parts (e.g. 21.A.307) and sailplanes parts (e.g. AMC 21A.303). Also, Part-M Subpart F and Part-145 contain provisions (i.e. M.A.603 (c) and 145.A.42 (c)) allowing maintenance organisations to fabricate certain parts to be installed on the aircraft as part of their maintenance activities.</p> <p>This is not progressive enough insofar, as they are only allowed to produce parts used on their own aircraft.</p>
response	<p>Not agreed. 21.A.307(c) provides enough flexibility for installing parts in ELA 1 and ELA2 aircraft without an EASA Form 1. This can be of advantage when using the Standard Changes process. For larger aircraft the existing rule only allows fabrication of parts by the maintenance organisations when they are intended for their own use.</p>

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comment	<p>347 comment by: <i>Ralf Keil</i></p> <p>German Aero Club completely is missing any standard changes/repairs for balloons (hot air and gas). Is that category been forgotten?</p> <p>We ask EASA adding typical standard changes/repairs on ballons, as envelope, burner and basket.</p> <p>To complete the list of approved tasks German Aero Club further suggest futher CS for:</p> <ul style="list-style-type: none"> - installation of modern battery-equipment in sailplans, including replacement of existing conventional batteries - installation/replacement of switches and handles - installation of outside camera mountings - installation of seals at controls
response	<p>Expanding the list could lead to delays in the process for the adoption of the first phase of CS-STAN. A second NPA is already foreseen to compile further Standard Changes (or Standard Repairs). Your proposal will be considered then.</p>

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN —	p. 14
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comment	92	comment by: <i>Michael GREINER</i>
	<p>Proposal for an additional Standard Change: If the towing cable release control of a (powered) sailplane does not have a T-shaped handle, the handle may be replaced by a yellow T-shaped handle. If the the T-shaped handle used for this purpose, is a servicable part for a different CS22/JAR22 sailplane type, and is attached according to good maintenance techniques, no further demonstration of suitability is necessary</p> <p>Reason: AMC 22.781 gives a clear indication of the shape to be used for the towing cable release: "The control should take the form of a T-shaped handle." Sailplanes and powered sailplanes, certified to older airworthiness standards often have handles of different shape (e.g. balls). But nobody would take the expenses to make a minor change to retrofit a T-shaped handle.</p> <p>This proposed Standard Change does not seem to be such a big deal. The question simply happened to arise during the commenting phase. Surely there are waiting many more such minor topics.</p>	
response	See the response to comment 347.	
comment	101	comment by: <i>Michael GREINER</i>
	<p>There may be interest to have such a Standard Change introduced. Clubs often want to demonstrate flights in sailplanes, offering the pilot's perspective and feeling. Experienced pilots doing these demonstration flights usually have more hours on the teacher's seat of the club double seater, than on the student's seat, which is the seat of the pilot in command.</p> <p>Purpose: Seat of the pilot in command in two seaters</p> <p>Applicability: Two seated sailplanes and powered sailplanes</p> <p>Acceptable methods, techniques and practices: Introducing a definition of the seat for the pilot in command, see section 'Manuals'</p> <p>Limitations: All controls and instruments are available in both seats. There is not already an unambiguous definition of the seat of the pilot in command with two persons on bord in the manufacturer's AFM.</p> <p>Manuals: Amend the AFM in section 2.10 Flight crew, (or in the corresponding section of the AFM, if it is not structured according to CS22 Book 2), where XX is the position of the pilot in command according to the hitherto regulation.</p> <p>"Solo flights may only be conducted from the XX seat.</p>	



With a crew of two, the pilot in command sits in the XX seat – unless the occupants agree prior to the flight that the pilot in command sits in the other seat. For the latter it is necessary, that all controls and instruments are available in the other seat, and that the pilot is familiar with the operation of the aircraft from this position."

Release to service: This Standard Change is suitable for release to service by the Pilot-owner.

response

See the response to comment 347.

comment

102 comment by: *Michael GREINER*

In some member states applying nationality and registration marks involves a very bureaucratic procedure. The following proposed standard change could simplify this procedure and strengthen the position of certifying staff.

Purpose: Applying nationality and registration marks

Applicability: ELA 1 and ELA 2

Acceptable methods, techniques and practices:

The nationality and registration marks are applied upon the aircraft according to ICAO Annex 7.

Limitations:
None

Manuals:
None

Release to service: This Standard Change is released to service by certifying staff.

response

Not accepted. Granting registration marks is not addressed in the European rules but prescribed under national law.

comment

231 comment by: *Peter A. Gutzeit, ib-rec GmbH*

The new rules of standardization of parts should include a rule for lithium batteries. These batteries are much more powerful and are reduced by weight of approximately 70 %.

Also these batteries are dangerous goods. For this goods the UNITED NATIONS office of transport



developed rules for a safe transport. These rules include following tests of the battery:
 High pressure
 Low pressure
 Shaking test
 Shock test (200 g for batteries < 12 kg)
 Short circuit test
 Overcharge test
 Deep discharge test

The information is published under UN 38.3. http://www.phmsa.dot.gov/pv_obj_cache/pv_obj_id_D4B2D17039E706213B36C1B309D41DCF8B4A0200/filename/UN_Test_Manual_Lithium_Battery_Requirements.pdf

All batteries worldwide must have this UN 38.3. certificate.

So it makes sense, to ask this certificate for all lithium batteries, used in aircrafts for
 Starting (Starter batteries)
 Operating avionic and radio equipment
 Operating an electric engine for starting and flying the aircraft

Without an UN 38.3 certificate the commercial transport and sales of the above mentioned batteries is forbidden or only with special transport boxes under special transport conditions allowed.

For an easy replacing of lead acid batteries with lithium batteries this transport safety test should be requested. The test is worldwide accepted and a must for safe transportation.

For more questions please don't hesitate to contact me under p.gutzeit@ib-rec.de

Best regards

Peter A. Gutzeit

response See the response to comment 347.

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PREAMBLE

comment 10 comment by: *INAER*

In somewhere it should be stated that if flight testing is required (e.g. installation of antennas where a range demonstration is required), Part 21 Subpart P - "Permit to Fly" will apply.

response See the response to comment 84

comment 24 comment by: *The Norwegian Air Sports Federation*

As a general comment to all suggested changes, we note that the applicability is typically more limited in the draft certification specifications than is the case in the US, according to FAA Advisory Circular AC No. 43.13-2B. (In the US the limit is based on non-pressurised



	<p>aircraft with a gross weight of 12,500 lbs or lower.) We would like to question why EASA has typically chosen a more strict standard with regard to applicability. Does the Agency have any data to support a different conclusion, or has a risk analysis been performed indicating the need for these limits?</p>
response	<p>Applicability has been defined on a case by case basis. The concept of Standard Changes is a new approach to deal with design changes under EU Regulations. Compared to the FAA AC (which was accepted as a reference by some European NAAs before the existence of EASA), CS-STAN provides less stringent requirements with regard to the authority control of the changes embodied. Based on lessons learned, in the future, the applicability of Standard Changes could be individually extended further to the limit established in 21.A.90B or 21.A.423B. The administrative processes to be followed for the FAA AC and for the EASA CS are different, therefore, the applicability does not necessarily need to be the same.</p>
comment	<p>43 comment by: CAA-NL</p> <p>CS STAN.10 Applicability In the various CS's different applicability's are used without further explanation. We suggest to include the explanation why there are differences and what the criteria used are to choose one or the other.</p>
response	<p>See the response to comment 24.</p>
comment	<p>45 comment by: J.Bedriňana</p> <p>The reference to FAA AC 43.13-2B, is very general and there are lot of considerations regarding for instance with Static Loads Test, Electrical Load Analysis, FHA, EMC Analysis and Testing. Some reminders should be added for highlighting these considerations in the Preamble of CS-STAN.</p> <p>A reference to FAA AC 43.13-1B Chapter 11 should be added to a new section in the Preamble, because is really important for a safe electrical wiring installation.</p> <p>Regarding the structural integrity of the equipment installation Chapter 1 in FAA AC 43.13-2B should also mentioned, maybe in a dedicated section in the Preamble when the equipment installation is going to require cutouts in the instrument panel, or requiring new structural mounting provisions in the aircraft.</p>
response	<p>Partially agreed. Some of the references to AC 43.13 have been made more clear (references to the applicable chapters). The new CS STAN.40 addresses reference documents and guidance material and their conditions of use.</p> <p>When no reference is made to a particular chapter of a referenced document, the installer should determine which chapters of the reference document are applicable to that particular change/repair. In relation to FAA AC 43.13-2B, this guidance material is specifically referenced throughout CS-STAN, which includes all its chapters and in particular Chapter 1 of AC 43.13-1B in relation with the Structure.</p>
comment	<p>49 comment by: Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</p>



CS STAN.20:
 The equipment installed must be allowed to be used as a primary navigation aid. Many owners are looking forward to affordable installation of new avionics, especially moving map systems. The purpose of this rule amendment is to reduce the regulatory burden on the General Aviation community and this is possible, but by adding this "brick wall"-limitation to such proven components mean that it will have little positive effect.

The Agency must trust the skill and competence at the approved maintenance facilities, they are more than capable of doing these kind of installations to the highest standard. The viability to delegate the necessary responsibilities for a broader scope of standard installations to the approved maintenance facilities is perhaps best demonstrated by the fact that they have previously had these privileges. Probably the majority of installations that EASA aircraft are equipped with today were performed in those days.

Considering the required amount of documentation in 3.2.2.4 and that all this is done at an approved maintenance facility, there is no reason to believe that this would be a sub standard installation. The Agency must take a risk based approach. The risk of installing modern and thoroughly tested equipment is extremely low, especially when carried out by approved personnel.

We all want to promote avionic upgrades to make airspace and airports more accessible, to be able to fly IFR above clouds is often a lot less hazardous than flying VFR in marginal meteorological conditions at low altitude. The Agency can help to eliminate this risk by allowing upgrade to IFR standard so that this equipment can be used as primary navigational means.

The Agency has not clearly specified why they think that these installation must not be approved for primary navigation. If any further guidance or specifications to be considered is deemed necessary, the Agency should expediently make said information available to all maintenance facilities.

response Not accepted. The comment is understood and will be further discussed in the future development of CS-STAN. For the time being new installations of primary means for navigation cannot be accepted as Standard Change.

comment 115 comment by: UK CAA

Page No: 16

Paragraph No: CS STAN.40 – Guidance Material

Comment: It should be clear that where there is a difference between the CRS guidance in CS-STAN with M.A.801 and M.A.803, that the certification requirements of CS-STAN should be complied with.

Justification: For example, Standard Change CS-SC153a – Replacement of safety belts/torso restraint systems, states that the task is not suitable for release to service by the Pilot-owner, where as the replacement of safety belts is a pilot-owner task as listed in Appendix VIII of Part M. Clarity is needed within the CS to ensure there is no confusion over the issuance of the CRS.

Proposed Text: Add the following text to CS STAN.40:



	<u>“The eligibility for the issuance of the release to service is detailed in the Standards. Depending on its nature, for certain Standard Changes and Standard Repairs, the issuance may be restricted to certain persons.”</u>	
response	Partially agreed. Appendix VIII (Pilot-owner maintenance) to Part-M allows for replacement of certain equipment which is part of the approved design of the aircraft. The Standard Change process allows for incorporation of design changes. The Agency considers that the current text is clear since the release to service applicability, when restricted, is already mentioned for each SC/SR.	
comment	262	comment by: <i>DGAC France</i>
	<p><u>CS STAN.20 Operational limitations or restrictions</u></p> <p>DGAC France understands that the following wording: “As a consequence, a Standard Change might introduce limitations for the use of the installed equipment (e.g. a navigation equipment may be installed following a Standard Change, but this installation may not permit that the equipment is used as primary navigation means)” concerns only the installation of an additional equipment.</p> <p>Nevertheless, when an equipment is replaced by an equivalent/similar one, there will be no impact on the aircraft existing operational limitations.</p> <p>To avoid any misunderstanding with the example into brackets, it should also be stated that “when a navigation equipment is replaced following a Standard Change, this installation does not change the aircraft operational capability (if the previous equipment was used as primary navigation means, the new one installed accordingly to the standard change can also be used as primary navigation means)”.</p>	
response	Agreed. CS STAN.20 has been amended.	
comment	306	comment by: <i>FNAM (French Aviation Industry Federation)</i>
	<p><u>CS STAN.20 Operational limitations or restrictions</u></p> <p>FNAM & GIPAG understand that the following wording: “As a consequence, a Standard Change might introduce limitations for the use of the installed equipment (e.g. a navigation equipment may be installed following a Standard Change, but this installation may not permit that the equipment is used as primary navigation means)” concerns only the installation of an additional equipment.</p> <p>Nevertheless, when an equipment is replaced by an equivalent/similar one, there will be no impact on the aircraft existing operational limitations.</p> <p>To avoid any misunderstanding with the example into brackets, it should also be stated that “when a navigation equipment is replaced following a Standard Change, this installation does not change the aircraft operational capability (if the previous equipment was used as primary navigation means, the new one installed accordingly to the standard change can also be used as primary navigation means)”.</p>	
response	See the response to comment 262.	
comment	331	comment by: <i>Ralf Keil</i>



	<p>EASA should clarify in the preamble, that any installation means the installation as well as the replacement/exchange of the affected parts.</p> <p>While reading the headlines of each CS, that it is not clear and could cause misunderstandings.</p>
response	<p>Accepted. Some titles of the Standard Changes and their purpose have been clarified and an explanation as per your comment has been provided in the 'Subpart A – General' of CS-STAN.</p>

<p>3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES</p>	<p>p. 17-18</p>
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comment	<p>1</p> <p style="text-align: right;">comment by: <i>Samionics / General Aviation Avionics</i></p> <p>Group Systems – Electrical</p> <p>We would like to see a more "generic" subgroup that assess minor changes such as modification of instrument lights, installation of low voltage indicators, engine analyzers (EGT/CHT/FF), map holders (lighted), replacement of fuses/circuit breakers, installation of avionics master switch (safety aspect dual switches), other non required equipment. We understand that many of the above noted changes already are considered to be included in other system groups i.e. CS-SC001a installation of a VHF COM would also include the replacement of a fuse/circuitbreaker to a suitable type/amperage. However we believe that it might be a good idea to have this clarified in a subgroup.</p>
response	<p>Partially agreed.</p> <p>The proposals to include new Standard Changes are recorded and will be considered for phase 2 of this rulemaking activity.</p>

comment	<p>6</p> <p style="text-align: right;">comment by: <i>FFAé</i></p> <p>In Group Miscellaneous :</p> <p>a) add a CS-SC40xx - installation of 'balloon (gas and hot air) portable equipment'. Justification : most of radio, transponders, PLB, navigation display used in a balloon are portable. The reality shows that these equipments, padded in a fabric suitcase, are installed with karabiners, strap or plastic locking collars. These installations are mainly well-done but out of some interpretation of EASA rules (if installed, you may need an approval). The CS-STAN should define standard practises for such installation on traditional wickerwork baskets according the mass of installed items and available space.</p> <p>b) add a CS-SC40xx - installation of an inside wall creating a partition in hot air balloon basket. Justification : the national operational rules and later the EASA OPS rules requires a limited number of passengers per compartments. The CS-31 HB requires a minimum space available for each passengers AND limits the number of people per compartment to six. Some operators flying with some old designed wickerwork baskets are not compliant because the space available in the passenger's compartment is wide enough for 8 people. Some of them have divided the passengers compartment in two with an inside wall made with straps, support rods and fabric. Then they are compliant with OPS rules. Do them comply with Certification ? CS-STAN should provide guidance to such modification.</p>
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response Your request will be considered during phase 2 of this rulemaking activity. Refer to the response provided to comment 347.

comment 17 comment by: *Mark Rumizen*

CS-SC203a (Use of Avgas Hjelmcø 91/96 UL and 91/98 UL) should not be included in this document as "Standard Changes". This is because neither one of these fuels is defined by a specification. Specifications are necessary to provide consistent compositional and fuel property control. Unknown chemical components in the fuel may damage aircraft fuel system materials. A materials evaluation of aircraft materials needs to be conducted for each type and model of aircraft to enable use of these fuels to ensure there are no material compatibility issues. Please see related comments to Standard Change section on page 43.

response Not accepted. Hjelmcø 91/96 UL and 91/98 UL are meeting ASTM D7547 and Def Stan 91-90. Due to the higher octane level a dedicated Standard Change has been issued.

comment 23 comment by: *The Norwegian Air Sports Federation*

We would like to suggest the following standard changes added to the list:

1) **Replacement a wooden fixed-pitch propeller** for a propeller manufactured by another company under a different type certificate, on the condition that the propeller is so similar in its properties as was required by German authorities according to NfL II 12-09. Suggested limitation should ideally be ELA-2 (obviously including ELA-1 as well), although most relevant applications known to us will be within the ELA-1 category. Rationale: The system has been applied in Germany for years without any known negative safety impacts.

NfL II 12-09 can be found here:

http://www.lba.de/SharedDocs/Downloads/DE/NfLs/Technik/NfL_II_12_09.pdf?__blob=publicationFile&v=1

2) **Replacement of a main aircraft battery** with another type meeting the same minimum standards as the original battery. Please refer to FAA AC No 43-13-2B chapter 10 for details and conditions. Rationale: This change is regarded as a minor alteration in the US, and as long as the battery meets certain minimum standards, no negative safety impact is expected.

3) **Ski installations.** Please refer to FAA AC No 43-13-2B chapter 5 for details and conditions. Rationale: This change is regarded as a minor alteration in the US, and as the installation meets certain minimum standards as specified in FAA AC No 43-13-2B chapter 5, no negative safety impact is expected. On an added note, while this change may be regarded as exotic in central Europe, it is rather relevant in Norway.

response See the response to comment 347

comment 40 comment by: *TW*



	<p>As a glider pilot I think it is an idea to simplify installations which I can see every day on the airfield, e.g. FLARM installation.</p> <p>I generally suggest to consider two other standard changes:</p> <ul style="list-style-type: none"> • Installation of small cameras on outside surfaces of aircraft, with changing positions. • Exchange of the average lead batteries with more advanced batterie technologies, e.g. lithium ferrum phosphate. <p>I think there should be an easy way to implement additional standard changes to keep on track with new technologies.</p>
Response	See the response to comment 347
comment	<p>90 comment by: <i>Johannes Anton</i></p> <p>It would be useful to account for the possible replacement of aircraft (lead) batteries for engine start and/or avionics with newer technology battery chemistries like Li-Ion or LiFePo.</p> <p>These new technologies bring possible weight and space savings and/or additional power.</p> <p>This should be made possible for gliders, powered gliders and ELA-2 aircraft within the regime of standard changes.</p> <p>At the same time the recommended industry testing standards like the UN Transport Test UN38.3 should be referenced.</p> <p>To all appearances the small aircraft industry seems to be still unaware of the fact that the transport safety test is useful and necessary to bring new batteries (comounds of several cells) into circulation on the market place.</p>
response	See the response to comment 347.
comment	<p>263 comment by: <i>DGAC France</i></p> <p>General Comment for all standard changes: For each standard change, whenever paragraph 3 refers to an ETSO/JTSO authorisation, the vocabulary should be standardised. At the present time, it is indicated “approved” or “qualified” without consistency. It should be referred to the Part 21 wording indicating “ETSO authorisation”.</p>
response	Agreed. The text has been amended.
comment	<p>311 comment by: <i>FNAM (French Aviation Industry Federation)</i></p> <p><u>General Comment for all standard changes:</u></p> <p>For each standard change, whenever paragraph 3 refers to an ETSO/JTSO authorisation, the vocabulary should be standardised. At the present time, it is indicated “approved” or “qualified” without consistency. It should be referred to the Part 21 wording indicating</p>



“ETSO authorisation”.

- #1 Standard change CS-SC001a Installation of VHF voice communication equipment
Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.
Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC001a Installation of VHF voice communication equipment:

In accordance to §1 purpose, add to paragraph 4 the following: “[...] of the specific aircraft (e.g. from VFR to IFR operation). Add a specific placard indicating: “VHF #xx is for VFR Only” and specify it in the AFMS.

- #1 Standard change CS-SC002a Installation of Mode S elementary surveillance equipment

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less, provided that the maximum cruising speed in ISA conditions is below 250 kts.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less, with a maximum cruising speed in ISA conditions below 250 kts;

Rotorcraft of 3 175 kg MTOM or less with a maximum cruising speed in ISA conditions below 250 kts; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC002a Installation of Mode S elementary surveillance equipment

Modify the last bullet of § 3 as follows:

“— In addition to the tests defined by the equipment manufacturer, a system ground test verifying all transmitted data has to be performed according to ACNS.D.ELS.015”

- #1 Standard change CS-SC003a Replacement of audio selector panels and amplifiers

FNAM & GIPAG propose that this Standard Change also allows the initial installation of audio selector panels and amplifiers.

- #2 Standard change CS-SC003a Replacement of audio selector panels and amplifiers

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #3 Standard change CS-SC003a Replacement of audio selector panels and amplifiers

FNAM & GIPAG suggest to reference ETSO-50c.



- #1 Standard change CS-SC004a Installation of antennas

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC004a Installation of antennas

In §3, modify the first and second bullet of the additional considerations as follows:

“— The antenna is installed according to the aircraft maintenance manual instructions, if provided. Otherwise, the antenna is installed in non-pressurised secondary structure areas unless the location is provisioned for this purpose in the airframe documentation or the antenna is being replaced and has the same footprint.

— The antenna is compatible with the connected equipment and is suitable for the environmental conditions to be expected during normal operation (especially in icing conditions).

- #1 Standard change CS-SC031a Exchange of conventional Anti Collision Lights, Position lights and Landing & Taxi lights by LED type lights

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC031a Exchange of conventional Anti Collision Lights, Position lights and Landing & Taxi lights by LED type lights

In §3, as concerns ETSO/JTSO authorisation, only Anti Collision and Position Lights have an ETSO (C96a and C30c). There is no ETSO for Landing and Taxi lights.

- #3 Standard change CS-SC031a Exchange of conventional Anti Collision Lights, Position lights and Landing & Taxi lights by LED type lights

In the additional considerations, add the following bullets:

“— For Anti Collision and Position Lights, the light intensity of the installed lights must equal or exceed the applicable value of the TC basis.

— For Anti Collision Lights, the flashing characteristics of the installed lights must equal or exceed the applicable values of the TC basis.

— For taxi and landing lights, the equipment is designed and installed so that

(a) No dangerous glare is visible to the pilots;

(b) The pilot is not seriously affected by halation;

(c) It provides enough light for night operations; and

(d) It does not cause a fire hazard in any configuration.”

- #1 Standard change CS-SC051a Installation of ‘FLARM’ equipment

For sailplanes and powered sailplanes, all FLARM Anti-Collision Awareness Systems are considered as standard parts. For aeroplanes, 21.A.307 (c) applies and EASA Form One is not required. Nevertheless, the standard change should define which equipment with



FLARM capability are acceptable for aeroplanes (for example a specific list established by FLARM). For instance a Vertical Speed indicator equipped with FLARM capability should not be accepted.

- #2 Standard change CS-SC051a Installation of 'FLARM' equipment

In paragraph 3, as additional considerations, add a bullet stating that:

“– The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”

- #3 Standard change CS-SC051a Installation of 'FLARM' equipment

In paragraph 4, add a bullet as follows:

“– A specific placard indicating “For Situation Awareness Only” and “Day VFR Only” must be installed.”

- #4 Standard change CS-SC051a Installation of 'FLARM' equipment

In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows:

“The AFM Supplement shall, at least, contain:

- the system description, operating modes and functionality;
- the limitations, warnings and placards ;
- The emergency and normal operating procedures and limitations;
- instructions for software and database updates. ; and
- warnings and placards, if applicable.

Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »

- #1 Standard change CS-SC052a Installation of moving map systems to enhance situational awareness

Considering the purpose of this change, the Applicability/Eligibility should be extended to all aircraft for which standard changes apply.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC052a Installation of moving map systems to enhance situational awareness

In paragraph 3, as additional considerations, add a bullet stating that:

“– The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”

- #3 Standard change CS-SC052a Installation of moving map systems to enhance situational awareness

In paragraph 4, modify the first bullet as follows:

“– The provided information is used only in an advisory or supplementary manner (no hazard, no credit basis). A specific placard indicating “For Situation Awareness Only” must be installed.”

- #4 Standard change CS-SC052a Installation of moving map systems to enhance situational awareness

In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows:



“The AFM Supplement shall, at least, contain:

- the system description, operating modes and functionality;
- the limitations, warnings and placards ;
- The emergency and normal operating procedures and limitations;
- instructions for software and database updates. ; and
- ~~warnings and placards, if applicable.~~

Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »

- #1 Standard change CS-SC053a Replacement of Radio Marker Receiving equipment

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #1 Standard change CS-SC054a Replacement of Distance Measuring Equipment (DME)

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #1 Standard change CS-SC055a Replacement of ADF equipment

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #1 Standard change CS-SC056a Replacement of VOR Equipment

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:

Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;

Rotorcraft of 3 175 kg MTOM or less; and

Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #1 Standard change CS-SC101a Installation of emergency locator transmitter equipment (ELT)

Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less.

Therefore it is proposed to write the paragraph as follows:

“2. Applicability/Eligibility:



Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less;
Rotorcraft of 3 175 kg MTOM or less; and
Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”

- #1 Standard change CS-SC151a Installation of headrests

In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows:

« Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2.”

- #2 Standard change CS-SC151a Installation of headrests

In §3, specific documents are referenced to. It should be specified which date and revision are accepted and where it is possible to download them or be provided with.

- #1 Standard change CS-SC152a Changes to seat cushions including the use of alternative foam materials

[Extension à l'aménagement cabine? A vérifier par NAV]

- #2 Standard change CS-SC152a Changes to seat cushions including the use of alternative foam materials

For aircraft that have been certified against CAR3 requirements, materials used in the construction of seat cushions must be flash resistant and not flame resistant. Therefore, flame resistance requirements should not apply to them. FAA AC 43-141B contains acceptable data for all aircraft and should be referred to in this SC. Nonetheless, it should be recommended to use flame resistant materials for these aircraft.

- #1 Standard change CS-SC201a Replacement of powerplant instruments

This standard change should also apply to piston engine helicopters.

- #2 Standard change CS-SC201a Replacement of powerplant instruments

For instruments for which an ETSO authorisation does not exist, how does the owner deal with 21.A.307 (c) (No Form One?)

- #3 Standard change CS-SC201a Replacement of powerplant instruments

FNAM & GIPAG consider that this Standard Change should not apply when an electromechanical equipment is replaced by an electronic one.

There should be the same wording introduced in Paragraph 1 as for CS-SC401a: “This Standard Change does not entitle the instalment of digital multifunction displays.”

- #1 Standard change CS-SC202a Use of Avgas UL 91

This standard change should also apply to piston engine helicopters.

In §3, replace “aeroplane” by “aircraft”.

- #1 Standard change CS-SC203a Use of Avgas Hjelmcø 91/96 UL and 91/98 UL

This standard change should also apply to piston engine helicopters.

In §3, replace “aeroplane” by “aircraft”.

- #1 Standard change CS-SC251a Installation of an angle of attack indicator system (AoA)

In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows:

“Aeroplanes not considered as complex motor-powered aircraft and
Sailplanes, powered sailplanes as defined in ELA1 or ELA2.”



- #2 Standard change CS-SC251a Installation of an angle of attack indicator system (AoA)
Modify the end of §4 as follows:
“[...]Any limitations defined by the AoA system manufacturer apply. Install the limitation placards, as required.”
- #3 Standard change CS-SC251a Installation of an angle of attack indicator system (AoA)
In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows:
“The AFM Supplement shall, at least, contain:
— the system description, operating modes and functionality;
— the limitations, warnings and placards ; and
— The emergency and normal operating procedures and limitations;
~~— warnings and placards, if applicable.~~
Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »
- #1 Standard change CS-SC401a Replacement of basic flight instruments
This standard change should also apply to helicopters not being complex motor powered aircraft.
- #2 Standard change CS-SC401a Replacement of basic flight instruments
Why the limitation of FL280 has been introduced?
- #1 Standard change CS-SC402a Installation of ‘sailplane equipment’
In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows:
« Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2.”
- #2 Standard change CS-SC402a Installation of ‘sailplane equipment’
In paragraph 3, as additional considerations, add a bullet stating that:
“— The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”
- #3 Standard change CS-SC402a Installation of ‘sailplane equipment’
In paragraph 4, modify the first bullet as follows:
“— The provided information is used only in an advisory or supplementary manner (no hazard, no credit basis). A specific placard indicating “For Situation Awareness Only” must be installed.”
- #4 Standard change CS-SC402a Installation of ‘sailplane equipment’
In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows:
“The AFM Supplement shall, at least, contain:
— the system description, operating modes and functionality;
— the limitations, warnings and placards ;
— The emergency and normal operating procedures and limitations;
— instructions for software and database updates. ;~~and~~
~~— warnings and placards, if applicable.~~
Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »
- #1 Standard change CS-SR801a Aircraft Repair according to FAA Advisory Circular AC



	<p>43.13-1B This standard repair should also apply to helicopters not being complex motor powered aircraft.</p> <p>- #1 Standard change CS-SR802a Repair of Sailplanes, Powered Sailplanes, LSA and VLA In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows: « Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2, LSA and VLA.”</p> <p>- #2 Standard change CS-SR802a Repair of Sailplanes, Powered Sailplanes, LSA and VLA In §3, specific documents are referenced to. It should be specified which date and revision are accepted and where it is possible to download them or be provided with.</p>
response	Please see the responses to the comments provided to the DGAC’s equivalent comments.

comment	<p>320 comment by: René Meier, Europe Air Sports</p> <p>List of Standard Changes</p> <p>Please add to this list</p> <p><u>Replacement of a wooden fixed-pitch propeller</u> as proposed by the Norwegian Air Sports Federation.</p> <p>Rationale:</p> <p>Identical to the Norwegian formula. It has been done for years without any negative effect on flight safety.</p> <p><u>Replacement of an aircraft main battery</u> of identical dimensions meeting the same standards.</p> <p>Rationale:</p> <p>As proposed by the Norwegian Air Sports Federation, our rationale is identical to the Norwegian formula. Changing a battery really is a non-complex task fitting perfectly with the Pilot-owner maintenance concept</p> <p><u>Installation of skis</u> We urgently ask for including the installation/de-installation of skis on to the list of Standard Changes.</p> <p>Rationale:</p> <p>In Alpine countries and in Northern Europe flying aircraft equipped with ski landing gear is a quite frequent operation. This task is perfectly in-line with Pilot-owner maintenance within the legislative framework of such operations.</p>
response	See the response to comment 347.



Standard Change CS-SC001a

comment	3	comment by: <i>Samionics / General Aviation Avionics</i>
	<p>In many places we find following. "This Standard Change does not include installation of antennas." Should be removed because it's not useful information - specially since the installation of antennas are covered in CS-SC004a.</p>	
response	<p>Not agreed. The CS-SC001a and CS-SC 002a, etc. do not include installation of antennas since the paragraphs 1 to 6 of these SCs do not cover relevant aspects of antenna installations covered in CS-SC004a. It is, however, possible to install two or more related SCs issuing only one release to service and to record them with a single Form 123.</p>	
comment	15	comment by: <i>Samionics / General Aviation Avionics</i>
	<p>Installation of a second COM would be limited to VFR only. This seem's not like a step forward. The exchange of a COM or new installation of a COM should be considered equal. The difference would be if the aircraft would only have one COM antenna. The installer should then consult CS-SC004a when installing the second COM antenna (if possible).</p>	
response	<p>Not agreed; IFR aircraft should have already have a second COM and replacement of both is acceptable under this Standard Change. The installation of another COM might increase complexity and is not seen to be a Standard Change in this phase, but the request will be recorded for discussions in phase 2 of this rulemaking activity.</p>	
comment	46	comment by: <i>J.Bedriñana</i>
	<p>The wording for Applicability/Eligibility should be identical for all the avionics equipment, right now there are differences that seems difficult to justify. For instance why limit the applicability of CS-SC001a (VHF COMM) to airplanes with maximum cruising speed below 250knots, and not ADF/VOR/DME equipment.</p>	
response	<p>Not agreed. The Applicability/Eligibility is defined based on the complexity of the installations. For this installation some parameters (cruise speed, cruising altitude) lead to different performance requirements.</p>	
comment	47	comment by: <i>J.Bedriñana</i>
	<p>Regarding when a AFM/RFM should be amended, the term "as required" should be clarified.</p>	
response	<p>Not agreed. The AFM needs to be amended when, due to the change being embodied, technically there is such a need in case the basic information in the AFM is not sufficient.</p>	
comment	51	comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i>



If a Type Certificate says VFR only, there is not much to do about it, but that is outside of this NPA. The Agency should take a risk based approach, realise that this is a safe installation and allow it for all operations. It is not a sub standard installation. To make a positive impact on the community, the Agency should instead strive to make this amendment remove as many operational limitations as possible. If this limits the operational capability of the specific aircraft, it is of very little use to a big part of the community.

The Agency has not taken into account the new and modern avionics with integrated systems for several of the functions listed in this NPA. One device often include VHF, VOR and moving map system. The Agency's view on this has not been disclosed in the rule amendment. These devices are thoroughly tested and raises the situational awareness a lot. Therefore it is very important that the Agency clearly specifies that they will allow these multi-function devices to be installed for every aircraft under this NPA's applicability. This will decrease the regulatory burden, increase the situational awareness and have a very positive impact on General Aviation.

response Noted.
The request to allow MFD is noted and will be discussed in phase 2 of this rulemaking activity, probably after reviewing the experience with phase 1.

comment 65 comment by: *Luftfahrt-Bundesamt*

CS-SC001a

2 – Applicability/Eligibility:
Replace “aeroplanes” by “aircraft”.

CS-SC001a

Installation of VHF voice communication equipment

1. It should be made clear, that it is not in the scope of this change to introduce a new VFR limitation to an aircraft which is generally IFR capable (see XPDR).

3 – Acceptable methods, techniques and practices
(2) A lot of equipment on the market does not fulfill the newest standards. Nevertheless, they are compliant with the airspace rules. It should be alternatively permitted to use COMM devices approved in EU and specified to meet at least EUROCAE ED-23B.
(2) Wording: “The equipment is **authorized** in accordance...”

response Partially agreed. Applicability has been extended to non-complex powered helicopters.
Partially agreed: Reference to some JTSO articles have been added and the word ‘authorised’ has been used (i.a.w. Part-21 used expressions).

comment 94 comment by: *Avionitec Ltd*

2-Applicability:
Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.



response	Partially agreed. Applicability has been extended to non-complex powered helicopters. ELA 2 definition covers ELA1 airplanes and helicopters.
comment	95 comment by: Avionitec Ltd 3- Acceptable methods, techniques and practices: Instead of the exact defined ETSO with dedicated revision use same wording as in other Standard changes: - The equipment is qualified according to the applicable ETSO/JTSO or equivalent equipment approval acceptable under EASA rules
response	Partially agreed. In some cases the text already contains the wording 'or later amendments' when referring to ETSO articles. In addition some information is provided in AMC. M. A. 801 paragraph 2.
comment	98 comment by: Avionitec Ltd 5- Manuals Amend the AFM with AFMS " or Operation Manual " issued by the Equipment Manufacturer containing or referencing the equipment instruction for operation.....
response	Not agreed. CS-STAN requires that the aircraft manuals are updated if impacted by the Standard Change. The changes in the manuals issued by the Equipment Manufacturer are not subject to CS-STAN.
comment	116 comment by: UK CAA Page No: 19 onwards for each Standard Change Paragraph No: 5 Manuals, relating to ICA for each Standard Change Comment: The phrase typically used in Section 5 (Manuals) for each of the Standard Changes includes "... consider the need to amend ..." such as used for SC001a, whereas for SC051a the phrase used is "Amend ... as required." Justification: The phraseology used in SC051a is clearer and stronger and would lead to the ICA being amended as necessary rather than simply 'considered' and not implemented. Proposed Text: The phraseology used should be standardised to that used in SC051a, i.e. <u>"Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required."</u>
response	Agreed. The text has been amended.
comment	127 comment by: Helicopter Club of Great Britain Add



response	<p>2. Rotorcraft not being complex motor powered aircraft</p> <p>Agreed. Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>148 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <p>p. 19; Standard Change CS-SC001a:</p> <p>Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.</p> <p>Section 3: Only ETSO's at the latest Amendment are listed here. Previously accepted ETSO amendments (and accepted TSO's) should also be accepted.</p> <p>Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.</p>
response	<p>Response to Section 2: Applicability has been extended to non-complex powered helicopters. ELA 2 definition covers ELA1 aeroplanes</p> <p>Response to Section 3: the acceptable standards are referenced.</p> <p>Response to Section 6: See the response to comment number 2.</p>
comment	<p>190 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC001a</p> <p>2-Applicability/Eligibility: We do not think that this speed restriction makes sense and we propose to add "and any aircraft up to ELA2".</p> <p>Rationale: In our view the proposed speed limit is old-fashioned and our proposal of "up to ELA2" brings more clarity.</p> <p>3-Acceptable methods, techniques and practices Interesting to read, considering "2-Applicability/Eligibility"</p> <p>6-Release to service We think a Pilot/owner is able to undertake such a change.</p> <p>Rationale: Today's comm equipment really is easy to install.</p>
response	<p>Response to comment on Section 2: Not agreed. The cruising speed triggers increased performance requirements and therefore the Standard Change is restricted also in terms of maximum cruise speed.</p> <p>Response to comment on Section 6: See the response to comment 2.</p>
comment	<p>197 comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p>



	<p>Current text is: Aeroplanes not being complex motor-powered aircraft with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	Agreed. Applicability has been extended to non-complex powered helicopters.

comment	<p>245 comment by: <i>new European Helicopter Association (EHA)</i></p> <p>EHA proposes the following changes to the CS-STAN leaflets:</p> <p>CS-STAN Appendix I</p> <p>CS-SC001a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC002a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC003a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC004a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC031a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC051a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC052a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC053a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC054a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC055a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC056a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC101a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p>
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response	<p>CS-SC152a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>CS-SC153a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.</p> <p>Refer to the responses to similar comments for every SC mentioned in the comment.</p>
comment	<p>264 comment by: <i>DGAC France</i></p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: “2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	<p>Partially agreed. Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>265 comment by: <i>DGAC France</i></p> <p>In accordance to §1 purpose, add to paragraph 4 the following: “[...] of the specific aircraft (e.g.from VFR to IFR operation). Add a specific placard indicating: “VHF #xx is for VFR Only” and specify it in the AFMS.</p>
response	<p>Not agreed. It is not accepted to change the operational scope with a Standard Change. An additional limitation for the equipment is not necessary.</p>
comment	<p>322 comment by: <i>The Finnish Aeronautical Association</i></p> <p>CS-SC001a — Installation of VHF voice communication equipment</p> <p><i>2 – Applicability/Eligibility</i> We would prefer a clearer wording. Our understanding is that this SC is eligible for ELA1 aircraft but not eligible for ELA2 aircraft, which is OK, but the text could be clearer. This comment applies to most SCs, see “General comments” above.</p> <p><i>3.4. The minimum output power specified</i> We are slightly surprised that the SC includes output power requirements. Our expectation is that equipment performance requirements would be stated in ETSO requirements, and the role of SCs is to define the installation related requirements. We suggest a rewrite accordingly.</p> <p><i>6 – Release to service</i> We suggest that modern VHF radio equipment is simple enough that it can be installed by the pilot/owner, provided the manufacturer’s instructions are followed and no additional RF-signal processing equipment (splitters etc.) are included in the installation. An example can be taken from the marine industry, where Marine VHF radios are used both by recreational users and commercial operators, and anyone can install the equipment and antenna in a pleasure boat.</p>

response Response to paragraph 2: The understanding of the proposed applicability is not correct. 'Aeroplanes not being complex motor-powered aircraft with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft' includes all ELA2 (and, therefore, also ELA1, by definition) plus some larger aeroplanes. The definition of complex motor-powered aircraft is contained in Regulation (EC) No 216/2008 .

Response to paragraph 3.4.: Not agreed; The ETSO requirements do not define performance requirements which are suitable for all installations. As today it is the responsibility of the installer to ensure that the installed equipment is suitable for the intended installation and environment.

Response to paragraph 6: See the response to comment 2.

comment 330 comment by: *Garmin International*

CS-SC001a – Installation of VHF voice communication equipment / General Comment

Paragraph 3 includes the consideration:

"2. The equipment is approved in accordance with ETSO-2C37e, ETSO-2C38e or ETSO-2C169a or later amendments

This condition is inconsistent with the other Standard Change conditions (e.g. CS-SC003a) that have the statement :

"...or equivalent equipment approval acceptable under EASA rules (i.e. approval grandfathered with Regulation (EU) No 748/2012)"

We originally interpreted the "or equivalent equipment approval acceptable under EASA rules (i.e. approval grandfathered with Regulation (EU) No 748/2012)" phrases as allowing for equipment with FAA TSOs that are equivalent.

This is no longer clear, because under NPA 2014-24 Section 3.2.2, it proposes a new paragraph GM M.A.801 to include the following:

"2. Parts and appliances to be installed as part of Standard Change/Standard Repair

The design of the parts and appliances to be used in a Standard Change or Standard Repair is considered a part of the change/repair, and, therefore, there is no need of a specific design approval. However, it is possible that for a particular Standard Change, **these Certification Specifications specifically require the use of parts and appliances that meet an ETSO. In this case, the parts and appliances require to be approved as an ETSO article.**

..."

The GM M.A.801 item 2 statement may be meant to apply only to situations such as CS-SC001a for Installation of VHF voice communication equipment, because these VHF com ETSOs are not technically equivalent to FAA VHF com TSOs since the EASA ETSOs include the "ETSO-2Cxxx" nomenclature. But this too would be inconsistent with CS-SC054a, which does have the condition statement "...or equivalent equipment approval acceptable under EASA rules (i.e. approval grandfathered with Regulation (EU) No 748/2012)," which applies to DME operating within the radio frequency range of 960-1215 Megahertz, ETSO-



2C66b.

All of these factors combine to result in a lack of clarity as to what is meant by the “or equivalent equipment approval acceptable under EASA rules (i.e. approval grandfathered with Regulation (EU) No 748/2012)”-type phrases and GM M.A.801 item 2.

It is suggested that this section include the statement

“...or equivalent equipment approval acceptable under EASA rules (i.e. approval grandfathered with Regulation (EU) No 748/2012)”

along with the other Standard Changes in Subpart A relating to ETSO/JTSO equipment and functions.

It is also suggested that EASA specifically include examples of equivalent equipment approvals acceptable under EASA rules (e.g. FAA TSO).

response Your remark is partially agreed. The text is amended accordingly.
Partially agreed. Bilateral agreements overrule Regulations (EU) No 1321/2014 and (EU) No 748/2012; therefore, the articles considered equivalent to ETSO articles under the bilateral agreements are acceptable for installation in the aircraft. Grandfathered articles in accordance with Regulation (EU) No 748/2012 are also considered equivalent. The text has been clarified.
Standard Change could potentially refer to articles fulfilling FAA TSO if no ETSO would exist, though this is not the case in this edition of the CS-STAN.

comment 344 comment by: LAMA EUROPE

Standard Change CS-SC001a and other places at Chapter 5 Manuals
– What is the exact meaning of abbreviation AFMS? Is it Airplane Flight Manual Supplement?
Please include such abbreviations at the document, so it is clear what do they mean.

response Agreed. The text has been amended. The abbreviation ‘AFMS’ has been defined in the ‘Subpart A- General’ of the CS.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC002a p. 21-22

comment 16 comment by: Samionics / General Aviation Avionics

Regarding automatic on the ground status -"airborne". Some pilots have noted that they have been reported for having their transponder set to "airborne" while on ground when traveling in Europe. Ie a common GA transponder Trig Avionics TT31 has following modes of operation - OFF/SBY/GND/ON/ALT. This specific transponder is a slide in replacement for KT76A and normally does not have "squat switch" connected. Thus an exemption might be required for GA? (CS ACNS.ELS.2018 On-the-ground status determination)



response	<p>Pressure altitude sensor / altitude encoder. The installation of a altitude encoder should be included in this CS-SC0002a or in another generic CS-SCxxx. In certain cases during the replacement of an older Mode A/C transponder the installer would like to replace the old 100ft encoder for a high resolution encoder ie better than 25ft resolution. The old EASA AD2006-0265 cancelled (for reasons that we cant understand) covered periodic inspections of transponder systems utilizing the 100ft resolution gillham code altitude encoder.</p> <p>Partially agreed: Determination of ‘on-the-ground status’ is required according to CS ACNS.ELS.020. The inclusion of ‘pressure altitude sensor/encoder’ will be clarified.</p>
comment	<p>19 comment by: <i>Garmin International</i></p> <p>CS-STAN, Subpart A, Standard Changes, Group Systems – Avionics/NAV/Instruments, CS-SC002a – Installation of Mode S elementary surveillance equipment</p> <p>Paragraph 3 includes the consideration:</p> <p>“The elementary surveillance system provides data according to CS ACNS.D.ELS.015. The transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report lowest quality, the equipment manufacturer has stated compatibility with the directly connected GPS source and the transponder is not qualified according to ETSO C166b.”</p> <p>This paragraph seems to state that Mode S elementary surveillance equipment should set quality parameters, contained in BDS registers corresponding to ADS-B squitter messages, to values different from those being provided by a source of position data. This is inconsistent with the Mode S ETSO requirements. In this case, compliance with this guidance would be in conflict with the ETSO C112E requirement contained in Eurocae ED - 73E section 3.31.2.1 which states:</p> <p>“The transponder will process data from on-board aircraft data sources as provided in Appendix B, Table B-3-ddd of Register XX16 definition table and format the data into field “y” of the Register XX16 “MB” field as shown in that table.”</p> <p>EASA should clarify the consideration and ensure it does not conflict with any ETSO requirement.</p> <p>Partially accepted. The text has been amended to clarify that 1090 MHz Extended Squitter (ES) ADS-B Out installations compliant to CS-ACNS Section 4 or AMC 20-24 are not included.</p>
comment	<p>66 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC002a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC002a</p>



Installation of Mode S elementary surveillance equipment

1. Why do we have a VFR limitation for COMM and not for XPDR? (Consider to remove it for COMM.)

2. A lot of equipment on the market does not fulfill the newest standards. Nevertheless, they are compliant with the airspace rules. Alternative XPDR device standard: Mode-S XPDR Level 2 with SI code capability, approved according to J/ETSO-2C112a respectively EUROCAE ED-73A and compliant to ICAO Annex 10 Amendment 77. Note: For ETSO-2C112b and ED-73B or higher the ICAO requirement is automatically fulfilled.

Second Alternative:
Mode-S Transponder (LAST) Level 2 with SI code capability, approved according to J/ETSO-2C509 respectively EUROCAE ED-115?

If a combination GPS – XPDR is already approved together for full ADS-B capability (manufacturer’s declaration, reference to existing approvals) it should be allowed to set the quality parameters to the values stated by the equipment manufacturer. Correctness of data will be checked by ground test anyway. Overall data quality for the GPS - XPDR combination has already been demonstrated.

The pressure altitude source may be integrated in the XPDR.

3 – Acceptable methods, techniques and practices:
Wording: “The elementary surveillance system... report **at least** lowest quality,...”

response The first comment is partially agreed. The applicability has been extended to non-complex motor powered rotorcraft.
The second comment is partially agreed. The acceptable XPDR qualification will be reviewed. ADS-B out with higher quality parameter will be reviewed in Phase 2 of this rulemaking activity.

comment 94 ❖ comment by: Avionitec Ltd

2-Applicability:
Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.

response Applicability has been extended to non-complex powered helicopters. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.

comment 117 comment by: UK CAA

Page No: 22

Paragraph No: CS-SC002a, paragraph 5 Manuals

Comment: ICA instructions for transponders in SC002a should enable compliance with Article 7.2 of EC Regulation 1207/2011 (SPI IR) for aircraft operating in accordance with IFR.

Justification: Without specific guidance, the ICA instructions may not lead to compliance with Article 7.2 of EC Regulation 1207/2011 (SPI IR). More specific instruction should be provided or exclude IFR aircraft from the Applicability/Eligibility of SC002a.

Proposed Text: Add to Paragraph 5 of SC002a:



“For aircraft operating in accordance with IFR, the Instructions for Continued Airworthiness should include a check every two years to ensure that the data provided according to CS ACNS.D.ELS.015 is correct.”

response Agreed: The text has been amended with instructions for continuing airworthiness to include a check every two years according to CS-ACNS ACNS.A.GEN.010.

comment 128 comment by: *Helicopter Club of Great Britain*
 Add
 2. Rotorcraft not being complex motor powered aircraft

response Applicability has been extended to non-complex powered helicopters.

comment 149 comment by: *Federal Office of Civil Aviation FOCA*
 p. 21 Standard Changes CS-SC002a:
 Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.
 Section 3: 4th Point: FOCA understands that a FAA TSO C-88A ACK 30.9 Altitude encoder attached to the one and only static line of the aircraft would fulfill this requirement.
 Section 3: 8th Point: The ground test record shall be archived together with the aircraft documents. The test shall also confirm that the transmitted unique aircraft address is indeed the one provided by the NAA.
 Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.

response Response to the comment on Section 2: Applicability has been extended to non-complex powered helicopters. The definition ‘ELA 2’ encompasses ELA1 aeroplanes. Refer to the response to comment on Section 3.4 & 3.8. Noted: In the current framework, compliance with ETSO standards is required. The test for checking the aircraft address is subject to the required ground test. Response to the comment on Section 6: See the response to comment number 2.

comment 191 comment by: *René Meier, Europe Air Sports*
 CS-SC002a
 2-Applicability/Eligibility: We do not think that this speed restriction makes sense and we propose to add "and any aircraft up to ELA2".
 Rationale:
 In our view the proposed speed limit is old-fashioned and our proposal of "up to ELA2"



response	<p>brings more clarity.</p> <p>All ELA2 aircraft are already included in the eligibility of this SC.</p>
comment	<p>198 comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, with a maximum cruising speed in ISA conditions below 250 kts and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	<p>Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>266 comment by: <i>DGAC France</i></p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less, provided that the maximum cruising speed in ISA conditions is below 250 kts. Therefore it is proposed to write the paragraph as follows: “2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less, with a maximum cruising speed in ISA conditions below 250 kts; Rotorcraft of 3 175 kg MTOM or less with a maximum cruising speed in ISA conditions below 250 kts; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	<p>Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>267 comment by: <i>DGAC France</i></p> <p>Modify the last bullet of § 3 as follows: “— In addition to the tests defined by the equipment manufacturer, a system ground test verifying all transmitted data has to be performed according to ACNS.D.ELS.015”</p>
response	<p>Noted. A ground test verifying all transmitted data is equivalent.</p>
comment	<p>350 comment by: <i>European Sailplane Manufacturers</i></p>



This CS-SC002 about installation / replacement is excluding the installation of antennas.

The European sailplane manufacturers do not consider this limitation as helpful. It is true that any transponder (or other equipment reliant on radio signals) installation needs a suitable antenna installation.

But if we all (the stakeholders and EASA) want to give an incentive for more and easier transponder installation by this CS-SC002 then antennas should be included. Otherwise EASA will continue to ask for approvals of regarding changes which often are possible only type by type. This is not financially feasible for a supplier of transponder systems (which might be even only a re-seller or importer).

Ideally some “proper antenna installation examples” could be specified and published, which would be accepted in conjunction with this CS-SC002. These “proper antenna installation examples” could be subject of a regarding approved modification and/or subject of a comparative testing campaign by a organisation or result of an EASA-intern assessment.

Therefore we propose either that antenna installations are included without any limitation. Or that antenna installation WHEN ACCEPTABLE TO EASA are included. This second option would create a backdoor to establish such a list of “proper antenna installation examples”.

Nevertheless if installation of such antennas is also covered by CS-SC004, then we are also satisfied.

response Installation of antennas for Mode -S transponder (and other antennas) is covered by CS-SC004.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC003a p. 23

comment 52 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

This subject should not only cover "replacement" but also "installation" of this equipment. We want to strive towards modern avionics in every aircraft. To be able to install audio selectors and amplifiers in many aircraft we can create a better environment for pilots and air traffic controllers. This also go hand in hand with the installation of a second VHF radio. The Agency and the industry encourage backups on every system so "Installation" should be made available as well. The risk of allowing this is definitely lower than the risk to fly with only one VHF radio on board. There is no risk based approach behind this limitation.

response Agreed
Standard Change has been modified to include installations.

comment 67 comment by: *Luftfahrt-Bundesamt*



	<p>CS-SC003a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>				
response	Agreed. Applicability has been extended to non-complex powered helicopters.				
comment	<p>94 ❖ comment by: Avionitec Ltd</p> <p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>				
response	Partially agreed. Applicability has been extended to non-complex powered helicopters. ELA1 aircraft are already encompassed by ELA2 aircraft.				
comment	<p>129 comment by: Helicopter Club of Great Britain</p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>				
response	Agreed. Applicability has been extended to non-complex powered helicopters.				
comment	<p>150 comment by: Federal Office of Civil Aviation FOCA</p> <p>p. 23 CS-SC003a:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Section 1: Installations of audio selector panel and amplifiers should also be covered in this standard change.</td> </tr> <tr> <td style="padding: 5px;">Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligibile for this standard change.</td> </tr> <tr> <td style="padding: 5px;">Section 3: 3rd Point: The equipment has the same functionality. Therefore, it should be deleted in order to allow new installations.</td> </tr> <tr> <td style="padding: 5px;">Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.</td> </tr> </table>	Section 1: Installations of audio selector panel and amplifiers should also be covered in this standard change.	Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligibile for this standard change.	Section 3: 3rd Point: The equipment has the same functionality. Therefore, it should be deleted in order to allow new installations.	Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.
Section 1: Installations of audio selector panel and amplifiers should also be covered in this standard change.					
Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligibile for this standard change.					
Section 3: 3rd Point: The equipment has the same functionality. Therefore, it should be deleted in order to allow new installations.					
Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.					
response	<p>Response to the comment to section 1: Agreed. Standard Change has been modified to include installations.</p> <p>Response to comment to Section 2: Applicability has been extended to non-complex powered helicopters. The definition ‘ELA2’ definition encompasses ELA1 aeroplanes.</p> <p>Response to comment to section 3: Standard Change has been modified to include installations.</p> <p>Response to comment on Section 6: See the response to comment number 2.</p>				



comment	<p>195 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC003a 2-Applicability/Eligibility Please change to "and any aircraft up to ELA2"</p> <p>Rationale: This brings more clarity to the text.</p> <p>3-Acceptable methods... Question: Why does the Agency add the five additional requirements as proposed?</p>
response	<p>Response to comment on 'applicability': The Agency considers the text is clear as proposed. No changes are introduced.</p> <p>Response to comment on 'acceptable methods': CS-STAN should contain acceptable methods, techniques and practices for the Standard Changes.</p>
comment	<p>199 comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	<p>Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>268 comment by: <i>DGAC France</i></p> <p>DGAC France proposes that this Standard Change also allows the initial installation of audio selector panels and amplifiers.</p>
response	<p>Agreed. Standard Change has been modified to include installations.</p>
comment	<p>269 comment by: <i>DGAC France</i></p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows:</p>



	<p>“2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	Partially agreed. Applicability has been extended to non-complex powered helicopters
comment	<p>270 comment by: DGAC France</p> <p>DGAC France suggest to reference ETSO-50c.</p>
response	The reference to the applicable ETSO/JTSO or equivalent is mentioned already.

**3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN —
SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I —
Standard Change CS-SC004a**

p. 24

comment	<p>68 comment by: Luftfahrt-Bundesamt</p> <p>CS-SC004a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC004a Installation of antennas</p> <p>Because of the criticality of the antenna pattern this standard should be restricted to the exchange of antennas. It should be required that the new antenna is to be mounted at the already approved location and function according to the same physical principle (e.g. quarter-wavelength with ground plane). It may be allowed to newly install antennas to known approved locations.</p> <p>3 – Acceptable methods, techniques and practices: Concerning bonding FAA AC 43.13-1B CHG 1, Chapter 11, Section 15 should be mentioned.</p>
response	<p>Partially accepted. The installation of small antennas is now permitted for rotorcraft. Partially accepted, reference to AC 43.13-1B, Chapter 11, Section 15 ‘electrical bonding’ has been included.</p> <p>Antenna installation details are provided by AC 43.13-2B. SC004. Acceptable methods have been amended to better define the possibilities and constrains for the antenna location.</p>
comment	<p>94 ❖ comment by: Avionitec Ltd</p> <p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>



response	Partially accepted. The installation of small antennas is now permitted for rotorcraft The definition 'ELA 2' encompasses also ELA1 aeroplanes.
comment	130 comment by: <i>Helicopter Club of Great Britain</i> Add 2. Rotorcraft not being complex motor powered aircraft
response	Partially accepted. The installation of small antennas is now permitted for rotorcraft.
comment	151 comment by: <i>Federal Office of Civil Aviation FOCA</i> p. 24 Standard Changes CS-SC004a: Section 3: 1) With the limitation ' <i>installation of antennas in non-pressurized <u>secondary</u> structure</i> ', it is generally not allowed to install antennas in the fuselage considered as primary structure. FOCA considers this as an undue burden and an unnecessary limitation for the industry. Antennas (small size) in the fuselage (non-pressurized) should be accepted by this standard change if additionally the following considerations apply: All antennas are mounted on an adapter plate to eliminate local skin bending caused by the skin curvature. Doublers should be installed (no less than 0.8 times the skin thickness and up to a maximum of 1.0 times the skin thickness at the installation point); additionally the doubler should ideally connect to two stringers and/or two frames to minimise differential straining of the skin in the transition from stringer and skin to the plain skin to the skin and doubler combination. 2) Additional antenna installations in aeroplanes certified for <u>flights in known-icing conditions</u> are only allowed, if a similar (size) antenna in a similar location is already installed.
response	1) Partially accepted. SC004 acceptable methods have been amended to better define the possibilities and constrains for the antenna location, including the possibility to install, under certain conditions, the antenna in locations other than secondary unpressurised structure. 2) Agreed: The limitation has been added.
comment	200 comment by: <i>European Private Helicopter Alliance</i> Paragraph 2 Applicability / Eligibility Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft Suggested new text: Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft



	<p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	Partially accepted. The installation of small antennas is now permitted for rotorcraft.
comment	<p>271 comment by: DGAC France</p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: “2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	The installation of small antennas is now permitted for rotorcraft.
comment	<p>272 comment by: DGAC France</p> <p>In §3, modify the first and second bullet of the additional considerations as follows: “— The antenna is installed according to the aircraft maintenance manual instructions, if provided. Otherwise, the antenna is installed in non-pressurised secondary structure areas unless the location is provisioned for this purpose in the airframe documentation or the antenna is being replaced and has the same footprint. — The antenna is compatible with the connected equipment and is suitable for the environmental conditions to be expected during normal operation (especially in icing conditions).</p>
response	<p>Partially accepted:</p> <p>Regarding the antenna installation, the text has been slightly changed to include ‘TC Holder NTO’.</p> <p>Regarding your comment referring to the icing conditions: Although bullet point 3 already covers this issue: ‘Instructions and tests from the equipment manufacturer have to be followed’ ‘The antenna is compatible with the connected equipment and is suitable for the environmental conditions to be expected during normal operation’ .Environmental conditions include also icing conditions. Additionally bullet point 4 states that any limitations defined by the equipment manufacturer apply. ‘Information limitation for aircraft certified to fly in icing conditions’ have been added</p>
comment	<p>351 comment by: European Sailplane Manufacturers</p> <p>In this CS-SC004 hopefully our comments given to CS-SC002 (transponder) and 101 (ELT) is hopefully already answered. Therefore we fully support this proposal.</p> <p>Nevertheless some comments:</p>



	<p>In point 3 the format of the second bullet needs some fixing (bullet and text too far right).</p> <p>This text about the antenna installation looks good to us – perhaps this is also a suitable wording for the AoA probes of CS-SC251 ?</p>
response	Noted. See also the response to comment 365.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC031a p. 25

comment	<p>69</p> <p>CS-SC031a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC031a Exchange of conventional Anti Collision Lights, Position lights and Landing & Taxi lights by LED type lights</p> <p>External Lights, especial landing lights have a direct connection (thick wire) to the heart of the electrical system of the aircraft. Special care must be taken not to compromise the lightning protection of the aircraft. It should be mentioned, that the new light (and its installation) must be protected from lightning at least as good as the previous one.</p>	comment by: <i>Luftfahrt-Bundesamt</i>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS. Partly accepted: This is an issue not only for landing / taxing lights. A reference to AC 43.13-1B, Chapter 11, Section 15 has been added.</p>	

comment	<p>94 ❖</p> <p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>	comment by: <i>Avionitec Ltd</i>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS. The definition ‘ELA2’ encompasses ELA 1 aircraft.</p>	

comment	<p>131</p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>	comment by: <i>Helicopter Club of Great Britain</i>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS.</p>	



comment	<p>152</p> <p>comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <p>p. 25; CS-SC031a:</p> <div style="border: 1px solid black; padding: 5px;"> <p>Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.</p> </div>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS. The definition 'ELA2' encompass ELA1 aircraft.</p>

comment	<p>201</p> <p>comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS.</p>

comment	<p>273</p> <p>comment by: <i>DGAC France</i></p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: "2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2."</p>
response	<p>Applicability has been extended to non-complex powered helicopters with no NVIS.</p>



comment	274	comment by: <i>DGAC France</i>
	In §3, as concerns ETSO/JTSA authorisation, only Anti Collision and Position Lights have an ETSO (C96a and C30c). There is no ETSO for Landing and Taxi lights.	
response	Accepted: Flexibility clause has been included in text.	
comment	275	comment by: <i>DGAC France</i>
	In the additional considerations, add the following bullets: “– For Anti Collision and Position Lights, the light intensity of the installed lights must equal or exceed the applicable value of the TC basis. – For Anti Collision Lights, the flashing characteristics of the installed lights must equal or exceed the applicable values of the TC basis. – For taxi and landing lights, the equipment is designed and installed so that (a) No dangerous glare is visible to the pilots; (b) The pilot is not seriously affected by halation; (c) It provides enough light for night operations; and (d) It does not cause a fire hazard in any configuration.”	
response	Not accepted. This is already covered in the original text.	
comment	323	comment by: <i>The Finnish Aeronautical Association</i>
	CS-SC031a – Exchange of conventional Anti Collision lights, Position lights and Landing & Taxi lights by LED type lights	
	3. “The equipment is installed at the same location with identical light distribution angles and colours.”	
	This shall not preclude installation of lights that have non-identical distribution angles and colours, as long as the new lights fulfil the requirements for distribution angles and colours. Please amend the text accordingly.	
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.	
comment	352	comment by: <i>European Sailplane Manufacturers</i>
	The use of anti-collision lights should become easier – not only as a replacement but also as a new installation.	
	The European sailplane manufacturers propose to take over wording from CS-SC004 (installation of antennas) and to apply it to anti-collision lights, thereby allowing also new installation of such devices.	
	In the case of position / landing and taxi lights perhaps a new number could be given to this CS-SC and if EASA thinks that this should be only for replacement then it could remain this way.	



response Noted. The issue will be further discussed in phase 2 of this rulemaking activity.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC051a p. 26-27

comment 20 comment by: *Garmin International*

CS-STAN, Subpart A, Standard Changes, Group Systems – Avionics/NAV/Instruments, general comment

It is important or CS-STAN, Subpart A, Standard Changes, Group Systems – Avionics/NAV/Instruments to include a Standard Change for the installation of VFR GNSS equipment.

FAA AC 20-138D Appendix 6 provides guidance for “Installation of GNSS Equipment for VFR Use Only” that EASA should consider as the basis for a Standard Change.

However, there are aspects of FAA AC 20-138D Appendix 6 that are problematic. For example, paragraph A6-3 states: “This appendix applies to all un-pressurized aircraft less than 6000 pounds where the modification is classified as a minor alteration.” Limiting the applicability to “un-pressurized aircraft less than 6000 pounds” is problematic because there a number of aircraft over 6,000 lbs that are limited to VFR only and that are either unpressurized or have unpressurized areas suitable for antenna mounting without adding any penetration of pressure bulkheads. A VFR Piper PA-31 (Navajo) is one example.

EASA should include a Standard Change for the installation of VFR GNSS equipment but ensure the Standard Change does not include the unnecessary limitations present in AC 20-138D Appendix 6.

response See the response to comment 347.

comment 25 comment by: *The Norwegian Air Sports Federation*

The following limitation should be removed, amended and/or clarified:

"A data link between the FLARM® based system and other equipment which is ETSO certified, or mandated by EASA OPS rules, or mandated by the Aircraft Flight Manual (AFM), or mandated by the respective Minimum Equipment List (MEL), is only allowed unidirectional into the FLARM® device unless the installed FLARM device is explicitly listed as compatible equipment by the manufacturer of the connected equipment."

We understand the description "unidirectional into the FLARM device" so that the connected equipment may send for instance GPS data *into the FLARM device*, but that for instance FLARM traffic information cannot be sent into the connected device. In turn, this means that the FLARM device requires an entirely separate traffic display, either a separately installed display in the aircraft or a handheld device (such as an iPad) used by the pilot.

If so, we believe the limitation has a negative safety impact. It goes without saying that



seeing the traffic directly on the main aircraft display gives the best situational awareness for the pilot. It is therefore vital the the FLARM detected traffic can be displayed on the main aircraft display (whether the main display is a GPS screen, a glasscockpit MFD or equivalent) rather than on a separate screen (which will typically be smaller, more difficult to read/interpret, etc).

The term "unidirectional" can also be questioned from a technical standpoint. While unidirectional connections between various avionics systems do exist, very commonly the communication is based on bi-directional protocols and hand-shaking systems. Describing electronic/digital communication as "directional" doesn't necessarily make technical sense. Also assuming that sending digital data rather than receiving it is automatically less risky for the device in question, lacks a solid technical basis.

With regard to the second qualification, we have the following concern: The manufacturer of the connected equipment may have commercial interests in avoiding that the FLARM device is explicitly listed as compatible equipment. The suggested limitation is likely to protect commercial interests rather than flight safety.

Bi-directional communication between the FLARM device and the mentioned types of connected equipment should of the above reasons be allowed. Furthermore, we would like to emphasise that today's minor change approval for FLARM devices (please refer to EASA minor change approval 10041701) is based on the following condition, as per EOMD-003:

"The FLARM system (including collision avoidance peripherals like remote displays, vocal synthesizers etc.) shall not interface to any other equipment essential for safe flight and landing (..)"

If the draft CS-SC051a is not amended, the new rule is actually more strict than the existing minor change approval. This goes in our opinion against the principles as laid out in *EASA Roadmap for Regulation of General Aviation*.

Despite our assumptions and experience that the risk for corrupted equipment due to the connection of a FLARM device is negligible, we cannot rule out that the Agency can prove such a risk. If such a risk is proven rather than assumed, we would like to suggest the following amendment:

As long as the connected equipment is either non-essential for the continuation of safe flight and/or there are backup displays/instruments for the connected equipment, bi-directional communication should be approved. As an example, a FLARM device should be allowed bi-directional communication to glasscockpit systems, as long as basic handling of the aircraft can be performed without the glasscockpit system being operational. The instruments required by NCO.IDE.A.120 for VFR or NCO.IDE.A.125 would require a back-up if the FLARM device is connected to a glasscockpit system that includes those pieces of equipment. A reference to the minimum equipment list (MEL) is irrelevant of this reason: If the equipment is corrupted prior to take-off, the flight should not be commenced in the first place.

response

Partially accepted. The term 'unidirectional' has been replaced by 'input into the FLARM device'. However, an example of a unidirectional data bus is the Aeronautical Radio Incorporated (ARINC-429).



If the change to install a FLARM equipment intends that there is additional data exchange with an approved equipment, in particular with glass cockpit systems, the change cannot be considered a Standard Change and it should be approved in accordance with Part-21, unless explicitly permitted by the conditions of this Standard Change.

comment 38 comment by: *Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016*

FLARM is best innovation of the last years in airspace safety. These devices were not certified but they show the legal officials that there is no need for regulations to use it. Now you will do it, why?

Most of all glider owners have had equipped their gliders with a FLARM. Something happened in unsafe conditions? No!

response Not accepted. Any modification of an aircraft other than in compliance with 21.A.90B has to be done in accordance with approved design data. This also applies to a fixed installation of a FLARM device. To establish such design data the majority of sailplane manufacturers published 'Technische Mitteilung für den Einbau von Ausrüstung' ('Technical Note: Instruction for the installation of equipment'), which was approved by EASA as minor change. Whenever FLARM is installed on a sailplane either these Notes or an individual minor change is to be used and recorded in the maintenance records. In cases where the sailplane manufacturer did not publish a Technical Note the individual minor change is the only option so far. The Standard Change for FLARM installations now contains an additional option.

The table below provides an overview:

	Approved design data	Release of part
CS-22	Service Bulletin, Equipment or Change approval or Standard Change	Standard Part AMC 21.A.303(c) 2 21.A.307 (b)
ELA1/ ELA2	Change approval or Standard Change	21.A.307 (c) Installation of parts without Form 1 Certification Memorandum
> ELA2	Change approval	EASA Form 1

comment 62 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

The Agency should allow the FLARM system to be interconnected with any other system possible. Since you have already limited it to Day VMC operations there is no need to add an extra consideration. If it works with any other equipment where it is not stated in the manual, so be it. It will always be a good thing. The risk of allowing this is extremely low and is by far compensated by the high probability of higher traffic awareness. Therefore the Agency should remove the consideration that deals with the "explicitly listed as compatible equipment by the manufacturer of the connected equipment". The risks have not been correctly interpreted.

response See the response to comment 25.



comment	70	comment by: <i>Luftfahrt-Bundesamt</i>
	<p>CS-SC051a Installation of 'FLARM' equipment</p> <p>EASA should recognize that this system is unknown in its core algorithm unknown in integrity and availability. It uses position sources with unknown integrity and availability and a RF spectrum segment which was originally allocated to entertainment equipment. S/W and AEH is not qualified to anything. The standard should prescribe a limitation section for the AFM-S taking into account the above facts. There is no reference to a well defined system specification; risk of FLARM Technology GmbH changing its specification anytime in future. There is no information about the installation. Which screws are to be used? Is it allowed to use hook-and-loop tape? Which loads have to be to be observed?</p>	
response	<p>Partially accepted. The AFM section has been modified.</p>	
comment	99	comment by: <i>Avionitec Ltd</i>
	<p>2-Applicability: Additionally add ELA1 aircrafts</p>	
response	<p>ELA1 (powered) sailplanes and aeroplanes are encompassed in ELA2 (powered) sailplanes and aeroplanes</p>	
comment	132	comment by: <i>Helicopter Club of Great Britain</i>
	<p>Add 2. Rotorcraft not being complex motor powered aircraft</p>	
response	<p>Partially agreed. Applicability has been extended to cover all ELA2 aircraft, and, therefore also include VLRs. For larger rotorcraft, a number of issues related to the HMI are to be considered due to the more complex operations that they are involved with.</p>	
comment	153	comment by: <i>Federal Office of Civil Aviation FOCA</i>
	<p>p. 26 CS-SC051a: Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.</p>	
response	<p>See the response to comment 132.</p>	
comment	276	comment by: <i>DGAC France</i>



	<p>As concerns production issues, for sailplanes and powered sailplanes, all FLARM Anti-Collision Awareness Systems are considered as standard parts. For aeroplanes, 21.A.307 (c) applies and EASA Form One is not required.</p> <p>Nevertheless, the problem of the acceptable design occurs. The standard change should define which equipment with FLARM capability are acceptable for aeroplanes (for example a specific list established by FLARM).</p>
response	<p>The Agency considers that if it complies with the Standard Change SC051, then it is identified for installation in the specific aircraft, as required in 21.A.307 (c) 4.</p>
comment	<p>277 comment by: DGAC France</p> <p>In paragraph 3, as additional considerations, add a bullet stating that: “– The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”</p>
response	<p>Accepted. The text has been amended for clarification. Please note that the requirements are also addressed in the policy of FOCA mentioned in the Standard Change SC051.</p>
comment	<p>278 comment by: DGAC France</p> <p>In paragraph 4, add a bullet as follows: “– A specific placard indicating “For Situation Awareness Only” and “Day VFR Only” must be installed.”</p>
response	<p>Accepted. The text has been amended accordingly.</p>
comment	<p>279 comment by: DGAC France</p> <p>In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows: “The AFM Supplement shall, at least, contain: – the system description, operating modes and functionality; – the limitations, warnings and placards ; – The emergency and normal operating procedures and limitations; – instructions for software and database updates. ; and – warnings and placards, if applicable. Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »</p>
response	<p>Partially accepted. The original AFM structure should be used for the AFMS, however, the text has been amended accordingly.</p>
comment	<p>324 comment by: The Finnish Aeronautical Association</p> <p>CS-SC051a — Installation of ‘FLARM’ equipment</p> <p><i>2. Applicability: Sailplanes, powered sailplanes and aeroplanes considered as ELA2 aircraft.</i></p> <p>We see no reason not to make this SC applicable also for other ELA1 aeroplanes, for example the popular PowerFLARM system for powered aeroplanes. We propose that it is applicable for all ELA1 aircraft.</p>



	<p>The reference to ELA2 aircraft is very confusing: why would the SC be applicable to ELA2 aircraft but not to ELA1 aircraft?</p>
response	<p>ELA1 aircraft are encompassed in the definition of ELA2 aircraft.</p>
comment	<p>333 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC051a 2-Applicability/Eligibility Please change the wording to "up to ELA2 aircraft" and include helicopters.</p> <p>Rationale: To make clear that ELA1 aircraft are included and that FLARM may also be installed in helicopters if the operator wishes to do so to increase situational awareness. The "helicopters" are explicitly mentioned in "3-Acceptable methods..."</p> <p>3-Acceptable methods, techniques and practices In the view of our members it is wise to promote FLARM, to ease this application, not to hinder progress by disproportionate provisions. Considering the community applying FLARM, a very liberal position is the only way to deal with.</p> <p>Rationale: FLARM, a non-certified private venture, considerably enhanced flight safety. So please let sports and recreational aviation make the most of it. We deal here with the operations of non-complex aircraft to a great extent operated by groups or clubs and private aircraft owners wishing to fly adequately equipped aircraft.</p> <p>We cannot exclude that some might see a risk provoked by corrupted equipment, in our view this risk is irrelevant.</p> <p>Rationale: Our operations are not a third-party risk worth to be mentioned.</p>
response	<p>Applicability has been extended to ELA2 aircraft.</p>
comment	<p>342 comment by: <i>LAMA EUROPE</i></p> <p>see CS-SC051a Use of confusing terms small x light aeroplanes, what is the difference? This is also related to comment 340. Please use consistent terms and definitions.</p>
response	<p>Agreed. The text of SC051a has been changed.</p>
comment	<p>353 comment by: <i>European Sailplane Manufacturers</i></p> <p>...should not be connected to other equipment...</p> <p>In case of FLARM there is a limitation in the CS-SC051a that when connected to "mandated" equipment (see definition in this CS-SC) this connection must only be</p>



unidirectional towards the FLARM equipment.

The only possibility to have a bi-directional connection is when the manufacturer of the “mandated” connected equipment is listing this type of connection as compatible.

The European sailplane manufacturers have a comment here:

First it might be the case, that the manufacturer of the “mandated” connected equipment has no motivation to make such a statement.

This could be the case if this manufacturer has no commercial benefit, sees no need to make such tests and does not want to take over the responsibility or that he has a similar product in the portfolio and is not interested to help the competition.

Therefore there should be a clear signal from EASA, that beside the possibility already listed (the statement of the “mandated” equipment manufacturer) there are other possibilities as well.

Ideally EASA would add to this sentence:
 “...unless the installed FLARM device is explicitly listed as compatible equipment by the manufacturer of the connected equipment OR WITHIN A REGARDING APPROVED MODIFICATION.

With this option another stakeholder could prove the compatibility and still an easy installation using CS-SC051 would be possible.

response Not agreed; see the response to comment 25.

comment 354 comment by: *European Sailplane Manufacturers*

... is based on the specifications as defined by FLARM Technology GmbH, Lindenstrasse 4, CH-6340 Baar, and it is not compatible with Transponder Mode A/C/S, ADS-B or TCAS/ACAS...

This definition obviously tries to specify more closely what is meant by the name “FLARM” equipment.

Here the European sailplane manufacturers have some comments:

First it might be of disadvantage to state directly the address of FLARM Technology GmbH, as such addresses and/or company names might be subject to change.

Second we have today several systems, which actually are compatible with FLARM and probably use these specifications (of the communication protocol and the collision-avoidance-algorithm) but are nor specified as system by the FLARM company.

Third FLARM itself has now brought the “Power FLARM” System on the market, which displays also transponder and ADS-B signals and could therefore be regarded as “compatible with” such systems.

In all these cases the European sailplane manufacturers would like to see CS-SC051 also as applicable and therefore a better wording is needed.

Has the FLARM company been asked for a proposal in this regard?



response Partially accepted. Remark: all manufacturers/developers of FLARM devices have to obtain a license from FLARM.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC052a

p. 28-29

comment 21 comment by: *Garmin International*

CS-STAN, Subpart A, Standard Changes, Group Systems – Avionics/NAV/Instruments, CS-SC052a – Installation of moving map systems to enhance situational awareness

It is unclear whether CS-SC052a is intended to encompass moving maps typically included as part of modern GNSS equipment such as Garmin's:

- TSO-C129a GPS 150XL/155XL, GNC 250XL/300XL, and GNS 430/530,
- TSO-C146a GNS 430W/530W, and
- TSO-C146c GTN 650/750

that may be installed for the sole purpose of VFR operations.

Suggest that this section should explicitly state whether such systems can be installed under CS-SC052a. Note that the need to explicitly state this may not be necessary if EASA adds a Standard Change for the installation of VFR GNSS equipment in accordance with Garmin's general comment on CS-STAN, Subpart A, Standard Changes, Group Systems – Avionics/NAV/Instruments.

response Accepted. The wording has been amended accordingly. This Standard Change is limited to equipment not having a primary navigation function.

comment 53 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

It is of outmost importance that this equipment is acceptable as a primary means of navigation. The Agency should present enough guidance to the maintenance facilities to make this possible.

There is a risk here that many owners/operators will do the installation according to these new rules and when RNAV approaches/navigation becomes more and more available they will regret that they did not do it in the old standard to allow for IFR flying. Once again, allow this to be used for all operations and as primary. This is not a sub standard installation and we have enough experience with this type of equipment to know that it is more reliable than old fashioned radio navigation. This is very important to raise situational awareness in all flight conditions and phases.

By not allowing this as primary you have not done anything to limit the illegal practices that you mention in the explanatory note.

The Agency has not taken into account the new and modern avionics with integrated systems for several of the functions listed in this NPA. One device often include VHF, VOR and moving map system. The Agency's view on this has not been disclosed in the rule



	<p>amendment. These devices are thoroughly tested and raises the situational awareness a lot. Therefore it is very important that the Agency clearly specifies that they will allow these multi-function devices to be installed for every aircraft under this NPA's applicability. This will decrease the regulatory burden, increase the situational awareness and have a very positive impact on General Aviation.</p>
response	<p>Not agreed. The modifications mentioned are not considered to be a Standard Change to be dealt with during this first phase of this rulemaking activity.</p>
comment	<p>71 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC052a Installation of moving map systems to enhance situational awareness</p> <p>2 – Applicability/Eligibility: The applicability should be enhanced to non-complex motor-powered aircraft if the equipment is approved according to ETSO-C113 (with DAL D or higher) and the ETSOs for the sensors delivering data to the display.</p>
response	<p>Noted. The issue will be further discussed in Phase 2 of this rulemaking activity.</p>
comment	<p>94 ❖ comment by: <i>Avionitec Ltd</i></p> <p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>
response	<p>NPA applicability for SC0052a already states 'ELA2 aircraft', therefore, also including VLRs. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.</p>
comment	<p>118 comment by: <i>UK CAA</i></p> <p>Page No: 28</p> <p>Paragraph No: CS-SC052a, paragraphs 3 and 5</p> <p>Comment: It is noted that the equipment is not to be used as primary means of navigation, yet the proposed text does not insist that warning placards to this effect are mandatory (these are only shown as "if applicable"). UK CAA recommends that this should be corrected.</p> <p>Justification: Clarity is required to reflect the limitations of the equipment.</p> <p>Proposed Text: "warnings and placards, if applicable"</p>
response	<p>Accepted. The wording has been amended accordingly.</p>
comment	<p>154 comment by: <i>Federal Office of Civil Aviation FOCA</i></p>



	<p>p. 28 Standard Changes CS-SC052a:</p> <p>Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligibile for this standard change.</p> <p>Section 5: 2nd Point: A placard, stating "DO NOT RELY ON INDICATED POSITION", attached next to the moving map system shall be in the limitation Section of the AFMS and in the cockpit</p>
<p>response</p>	<p>NPA applicability for SC0052a already states ‘ELA2 aircraft’, therefore, also including VLRs, balloons, airships and ELA1 aircraft. Accepted. The AFM section has been amended accordingly.</p>
<p>comment</p>	<p>208 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC0523a 1-Purpose We take note of the fact that here the installation and the exchange is allowed contrary to what we found later when we came to VOR and DME.</p> <p>2-Applicability/Eligibility Why only to ELA2 aircraft? We would prefer "all aircraft up to ELA2"! And also on helicopters heavier than VLR.</p> <p>Rationale: Such installations contribute to the safety of flight.</p> <p>6-Release to service We disagree.</p> <p>Rationale: Considering the capabilities of today's pilots a release to service by him or her fits perfectly.</p>
<p>response</p>	<p>By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes. Regarding the comment of 6 - Release to service, this is not accepted. The application of FAA AC 43-13-2B requires technical knowledge which is beyond the normal pilot training. See also the reply to comment 2.</p>
<p>comment</p>	<p>280 comment by: <i>DGAC France</i></p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to all aircraft for which standard changes apply. Therefore it is proposed to write the paragraph as follows:</p>



	<p>“2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	See the response to comment 24.
comment	<p>281 comment by: DGAC France</p> <p>In paragraph 3, as additional considerations, add a bullet stating that: “– The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”</p>
response	Accepted. The text has been added.
comment	<p>282 comment by: DGAC France</p> <p>In paragraph 4, modify the first bullet as follows: “– The provided information is used only in an advisory or supplementary manner (no hazard, no credit basis). A specific placard indicating “For Situation Awareness Only” must be installed.”</p>
response	Accepted. The text has been amended accordingly.
comment	<p>283 comment by: DGAC France</p> <p>In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows: “The AFM Supplement shall, at least, contain: – the system description, operating modes and functionality; – the limitations, warnings and placards ; – The emergency and normal operating procedures and limitations; – instructions for software and database updates. ; and – warnings and placards, if applicable.</p> <p>Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »</p>
response	Accepted. The text has been amended accordingly.
comment	<p>325 comment by: The Finnish Aeronautical Association</p> <p>CS-SC052a — Installation of moving map systems to enhance situational awareness</p> <p><i>1 – Purpose : Installation or exchange of moving map system to enhance situational awareness</i></p> <p>Informational note: This wording does not make clear if the moving map system displays only ground features such as obstacles and high ground, or if it also displays airspace features such as weather radar data and/or surrounding traffic data (TAS). All these features increase situational awareness.</p>



response	<p>2 – <i>Applicability/Eligibility : ELA 2 aircraft</i></p> <p>We are again confused: why would the SC be applicable to ELA2 aircraft but not to ELA1 aircraft? We expect applicability to ELA1 aircraft as well.</p> <p>Noted. It is not intended to define in detail the acceptable information on moving map displays. ELA1 aircraft is encompassed by the definition of ELA2 aircraft.</p>
comment	<p>355 <i>comment by: European Sailplane Manufacturers</i></p> <p>...should not be connected to other equipment...</p> <p>In case of moving map systems there is a limitation in the CS-SC052a that when connected to required equipment this connection is only possible, when the manufacturer of the required connected equipment is listing this type of connection as compatible.</p> <p>The European sailplane manufacturers have two comments here:</p> <p>First it might be the case, that the manufacturer of the required connected equipment has no motivation to make such a statement. This could be the case if this manufacturer has no commercial benefit, sees no need to make such tests and does not want to take over the responsibility or that he has a similar product in the portfolio and is not interested to help the competition. Therefore there should be a clear signal from EASA, that beside the possibility already listed (the statement of the required equipment manufacturer) there are other possibilities as well.</p> <p>Ideally EASA would add to this sentence: “...unless the installed moving map system is explicitly listed as compatible equipment by the manufacturer of the connected equipment OR WITHIN A REGARDING APPROVED MODIFICATION.</p> <p>With this option another stakeholder could prove the compatibility and still an easy installation using CS-SC052 would be possible.</p> <p>The second comment is the use of the word “required”. Whereas in the case of CS-SC051 a definition is given, here only the word “required” is used. Our understanding is that this will be too vague and leading to lots of questions. Perhaps the definition within CS-SC051 (for the FLARM device) could be a useful possibility.</p> <p>A third comment is about the limitation that the moving map system must “not used as primary means of navigation.” Whereas the European sailplane manufacturers fully agree with such a limitation, we nevertheless have the understanding that for day-VFR the primary means of navigation is the paper map plus perhaps a required compass. If EASA agrees so, then it should be said so in the CS-SC052. Otherwise someone might see the moving map system as the only means for navigation in</p>



	the cockpit (because the pilot and his maps is not sitting inside) and conclude that it is used as the primary means...
response	<p>Partially accepted.</p> <p>First comment: See the response to comment 25.</p> <p>Second comment: The wording has been modified as recommended.</p> <p>Third comment: Not agreed. Primary navigation means should not have changed before and after the installation of this Standard Change. We do not consider the need for changing the text as compared to the NPA.</p>

<p>3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC053a</p>	<p>p. 30</p>
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comment	<p>54 comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i></p> <p>This subject should be changed from "replacement" to "installation". We all want owners/operators to upgrade their system to make aviation safer. By taking a <u>risk based approach</u> we can see that this kind of installation by an approved maintenance facility is not endangering flight safety. Flying IFR without this equipment is however a greater risk and should not be promoted if there is a way to encourage the installation of it.</p> <p>This subject is extremely limited since it only allows replacement of devices that will fit in the same brackets with the same connection. This makes it very hard to go from old to new since a lot has changed over the years. If this was not the intended meaning of this sentence we suggest that you change the wording to reduce the risk of misinterpretation by the National Aviation Authorities. To fix something new that fits exactly in the old space is in many cases impossible and it is not nearly proportionate to the low risk of this installation. The Agency must take a risk based approach in order to decrease the regulatory burden and promote General Aviation.</p>
response	<p>Agreed.</p> <p>The text will be modified to permit installation of that equipment.</p>

comment	<p>72 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC053a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC053a Replacement of Radio Marker Receiving equipment</p> <p>Should be also applicable to marker receivers integrated in audio panels.</p>
response	<p>Comment regarding applicability is partially agreed. Applicability has been extended to non-complex powered helicopters.</p> <p>Second comment is agreed.</p>



Text will be modified to permit installation of that equipment and integration into other equipment.

comment	94 ❖	comment by: Avionitec Ltd
	2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.	
response	Partially agreed. Applicability has been extended to non-complex powered helicopters. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.	

comment	133	comment by: Helicopter Club of Great Britain
	Add 2. Rotorcraft not being complex motor powered aircraft	
response	Agreed. Applicability has been extended to non-complex powered helicopters.	

comment	155	comment by: Federal Office of Civil Aviation FOCA
	p. 30 Standard Change CS-SC053a: Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change. Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.	
response	Partially agreed. Applicability has been extended to non-complex powered helicopters. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes. See also the response to comment 2.	

comment	202	comment by: European Private Helicopter Alliance
	Paragraph 2 Applicability / Eligibility Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft Suggested new text: Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft or Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft	



	<p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	Agreed. Applicability has been extended to non-complex powered helicopters.
comment	<p>284 comment by: DGAC France</p> <p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: “2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p>
response	Partially agreed. Applicability has been extended to non-complex powered helicopters.
comment	<p>356 comment by: European Sailplane Manufacturers</p> <p>In the case of the CS-SCs for radio marker / DME and VOR it is always specified, that “The equipment has the same functionality, is installed at the same location and is compatible with the existing installation.”</p> <p>The European sailplane manufacturers think that this sentence is too onerous as it could be interpreted that the replacement equipment nearly has to identical to the old one and/or might only be replaceable by equipment of the same manufacturer as only he could specify the exact functionality.</p> <p>We propose a less strict wording. By the way – we do not consider installation of a “only similar, but newer” system a problem, where any fear regarding flight safety would be justified.</p> <p>A second comment is a question: Why are these CS-SCs limited to replacement only? It is understood that without any information and/or an approved modification it will not be possible to install such a system. But if such an approved modification is existing for an older system and if the owner wants to use this old approval as basis for CS-SC053 / 054 / 055, this should be possible. (Even if the older equipment has never been physically installed in the aircraft.) This should be also listed as an option.</p>
response	<p>Partially agreed.</p> <p>Text will be modified to permit the installation of Radar Marker Receiving Equipment and integration into other equipment.</p>

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC054a p. 31



comment	27	comment by: <i>The Norwegian Air Sports Federation</i>
	<p>This standard change should not be limited to replacement of DME, but it should also include initial installation. We cannot see why this shouldn't be possible, as long as CS-STAN in its draft form includes installation of Mode S transponders, VHF radios, etc. Please also take into account that the chance of the DME being the only source of positional information is very remote in most general aviation operations.</p>	
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.	
comment	55	comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i>
	<p>This subject should be changed from "replacement" to "installation". We all want owners/operators to upgrade their system to make aviation safer. By taking a <u>risk based approach</u> we can see that this kind of installation by an approved maintenance facility is not endangering flight safety. Flying IFR without this equipment is however a greater risk and should not be promoted if there is a way to encourage the installation of it.</p> <p>This subject is extremely limited since it only allows replacement of devices that will fit in the same brackets with the same connection. This makes it very hard to go from old to new since a lot has changed over the years. If this was not the intended meaning of this sentence we suggest that you change the wording to reduce the risk of misinterpretation by the National Aviation Authorities. To fix something new that fits exactly in the old space is in many cases impossible and it is not nearly proportionate to the low risk of this installation. The Agency must take a risk based approach in order to decrease the regulatory burden and promote General Aviation.</p>	
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.	
comment	73	comment by: <i>Luftfahrt-Bundesamt</i>
	<p>CS-SC054a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>	
response	Partially agreed. Applicability has been extended to non-complex powered helicopters.	
comment	94 ❖	comment by: <i>Avionitec Ltd</i>
	<p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>	
response	Partially agreed. Applicability has been extended to non-complex powered helicopters. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.	
comment	134	comment by: <i>Helicopter Club of Great Britain</i>



	Add
	2. Rotorcraft not being complex motor powered aircraft
response	Agreed. Applicability has been extended to non-complex powered helicopters.

comment	156 comment by: <i>Federal Office of Civil Aviation FOCA</i>
	p. 31; Standard Changes CS-SC054a:
	Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.
	Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.

response	Partially agreed. Applicability has been extended to non-complex powered helicopters. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes. See also the response to comment 2.
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comment	203 comment by: <i>European Private Helicopter Alliance</i>
	Paragraph 2 Applicability / Eligibility
	Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft
	Suggested new text:
	Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft
	or
	Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft
	Reason To include rotorcraft in Applicability / Eligibility

response	Agreed. Applicability has been extended to non-complex powered helicopters.
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comment	285 comment by: <i>DGAC France</i>
	Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: "2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and



response	<p>Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p> <p>Partially agreed. Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>335 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC054a 2-Applicability/Eligibility We would prefer "Aeroplanes not being complex motor-powered aircraft, aircraft up to ELA2.</p> <p>May we propose to study the inclusion of heavier helicopters than the ones fitting with the ELA2 limitations?</p> <p>6-Release to service In our view a "Release to service" by the Pilot-owner would be helpful.</p> <p>Rationale: Particularly in remote areas a DME often is the only reliable source to get precise position information. Any Pilot-owner is able to undertake such a change, to release the aircraft and to safely continue the flight.</p>
response	<p>Applicability has been extended to non-complex powered helicopters. See also the response to comment 2..</p>
comment	<p>357 comment by: <i>European Sailplane Manufacturers</i></p> <p>In the case of the CS-SCs for radio marker / DME and VOR it is always specified, that</p> <p>“The equipment has the same functionality, is installed at the same location and is compatible with the existing installation.”</p> <p>The European sailplane manufacturers think that this sentence is too onerous as it could be interpreted that the replacement equipment nearly has to identical to the old one and/or might only be replaceable by equipment of the same manufacturer as only he could specify the exact functionality.</p> <p>We propose a less strict wording. By the way – we do not consider installation of a “only similar, but newer” system a problem, where any fear regarding flight safety would be justified.</p> <p>A second comment is a question: Why are these CS-SCs limited to replacement only? It is understood that without any information and/or an approved modification it will not be possible to install such a system. But if such an approved modification is existing for an older system and if the owner wants to use this old approval as basis for CS-SC053 / 054 / 055, this should be possible. (Even if the older equipment has never been physically installed in the aircraft.) This should be also listed as an option.</p>
response	<p>Noted. The issue will be further discussed in phase 2 of this rulemaking activity.</p>



3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC055a p. 32

comment	28	comment by: <i>The Norwegian Air Sports Federation</i>	<p>This standard change should not be limited to replacement of an ADF, but it should also include initial installation. We cannot see why this shouldn't be possible, as long as CS-STAN in its draft form includes installation of Mode S transponders, VHF radios, etc. Please also take into account that the chance of the ADF being the only source of positional information is very remote in most general aviation operations.</p>
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.		
comment	56	comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i>	<p>This subject should be changed from "replacement" to "installation". We all want owners/operators to upgrade their system to make aviation safer. By taking a <u>risk based approach</u> we can see that this kind of installation by an approved maintenance facility is not endangering flight safety. Flying in marginal weather without this equipment is however a greater risk and should not be promoted if there is a way to encourage the installation of equipment to make it easier.</p> <p>Many owners/operators upgrade their flying skills and do so by taking Instrument Rating, EIR and so on. Then the Agency shall make it possible to easily put in the necessary equipment needed to operate in IFR environments safely.</p> <p>This subject is extremely limited since it only allows replacement of devices that will fit in the same brackets with the same connection. This makes it very hard to go from old to new since a lot has changed over the years. If this was not the intended meaning of this sentence we suggest that you change the wording to reduce the risk of misinterpretation by the National Aviation Authorities. To fix something new that fits exactly in the old space is in many cases impossible and it is not proportionate to the low risk of this installation. The Agency must take a risk based approach in order to decrease the regulatory burden and promote General Aviation.</p>
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.		
comment	74	comment by: <i>Luftfahrt-Bundesamt</i>	<p>CS-SC055a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>
response	Applicability has been extended to non-complex powered helicopters under conditions.		
comment	94 ❖	comment by: <i>Avionitec Ltd</i>	



response	<p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p> <p>Applicability has been extended to non-complex powered helicopters under conditions. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.</p>
comment	<p>135 comment by: <i>Helicopter Club of Great Britain</i></p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions</p>
comment	<p>157 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <div style="border: 1px solid black; padding: 5px;"> <p>Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change.</p> <p>Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.</p> </div>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions. See also the response to comment 2.</p>
comment	<p>204 comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions.</p>
comment	<p>286 comment by: <i>DGAC France</i></p>



response	<p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: “2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2.”</p> <p>Applicability has been extended to non-complex powered helicopters under conditions.</p>
comment	<p>336 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC055a 2-Applicability/Eligibility We would prefer "Aeroplanes not being complex motor-powered aircraft, aircraft up to ELA2.</p> <p>May we propose to study the inclusion of heavier helicopters than the ones fitting with the ELA2 limitations?</p> <p>6-Release to service In our view a "Release to service" by the Pilot-owner would be helpful.</p> <p>Rationale: The task was performed on maintenance instructions by a responsible Pilot-owner, he/she surely is in a position to release the aircraft.</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions. See also the response to comment 2.</p>
comment	<p>358 comment by: <i>European Sailplane Manufacturers</i></p> <p>In the case of the CS-SCs for radio marker / DME and VOR it is always specified, that</p> <p>“The equipment has the same functionality, is installed at the same location and is compatible with the existing installation.”</p> <p>The European sailplane manufacturers think that this sentence is too onerous as it could be interpreted that the replacement equipment nearly has to identical to the old one and/or might only be replaceable by equipment of the same manufacturer as only he could specify the exact functionality.</p> <p>We propose a less strict wording. By the way – we do not consider installation of a “only similar, but newer” system a problem, where any fear regarding flight safety would be justified.</p> <p>A second comment is a question: Why are these CS-SCs limited to replacement only? It is understood that without any information and/or an approved modification it will not be possible to install such a system. But if such an approved modification is existing for an older system and if the owner</p>



	wants to use this old approval as basis for CS-SC053 / 054 / 055, this should be possible. (Even if the older equipment has never been physically installed in the aircraft.) This should be also listed as an option.
response	Noted. The issue will be further discussed in phase 2 of this rulemaking activity.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC056a

p. 33

comment	29	comment by: <i>The Norwegian Air Sports Federation</i>
		This standard change should not be limited to replacement of VOR, but it should also include initial installation. We cannot see why this shouldn't be possible, as long as CS-STAN in its draft form includes installation of Mode S transponders, VHF radios, etc. Please also take into account that the chance of the VOR being the only source of positional information is very remote in most general aviation operations.
response		Noted. The issue will be further discussed in Phase 2 of this rulemaking activity.

comment	57	comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i>
		<p>This subject should be changed from "replacement" to "installation". We all want owners/operators to upgrade their system to make aviation safer. By taking a <u>risk based approach</u> we can see that this kind of installation by an approved maintenance facility is not endangering flight safety. Flying in marginal weather without this equipment is however a greater risk and should not be promoted if there is a way to encourage the installation of equipment to make it easier.</p> <p>Many owners/operators upgrade their flying skills and do so by taking Instrument Rating, EIR and so on. Then the Agency shall make it possible to easily put in the necessary equipment needed to operate in IFR environments safely.</p> <p>The Agency has not taken into account the new and modern avionics with integrated systems for several of the functions listed in this NPA. One device often include VHF, VOR and moving map system. The Agency's view on this has not been disclosed in the rule amendment. These devices are thoroughly tested and raises the situational awareness a lot. Therefore it is very important that the Agency clearly specifies that they will allow these multi-function devices to be installed for every aircraft under this NPA's applicability. This will decrease the regulatory burden, increase the situational awareness and have a very positive impact on General Aviation.</p> <p>This subject is extremely limited since it only allows replacement of devices that will fit in the same brackets with the same connection. This makes it very hard to go from old to new since a lot has changed over the years. If this was not the intended meaning of this sentence we suggest that you change the wording to reduce the risk of misinterpretation by the National Aviation Authorities. To fix something new that fits exactly in the old space is in many cases impossible and it is not proportionate to the low risk of this</p>



	<p>installation. The Agency must take a risk based approach in order to decrease the regulatory burden and promote General Aviation.</p>
response	<p>Noted. The issue will be further discussed in phase 2 of this rulemaking activity.</p>
comment	<p>75 comment by: <i>Luftfahrt-Bundesamt</i> CS-SC056a 2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions.</p>
comment	<p>94 ❖ comment by: <i>Avionitec Ltd</i> 2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.</p>
comment	<p>136 comment by: <i>Helicopter Club of Great Britain</i> Add 2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions.</p>
comment	<p>158 comment by: <i>Federal Office of Civil Aviation FOCA</i> p. 33; Standard Changes CS-SC056a: Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change. Section 2 and 4: This standard change shall only be applicable for VFR limited aircrafts Section 6: FOCA believes that only B2 licenced personnel are qualified to release the aircraft to service.</p>
response	<p>Applicability has been extended to non-complex powered helicopters under conditions. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes. For comment in regards to Section 2 & 4: Not agreed: For the replacement of equipment a limitation to VFR is not required. See also the response to comment 2.</p>



comment	205	comment by: <i>European Private Helicopter Alliance</i>
	<p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>	
response	Applicability has been extended to non-complex powered helicopters under conditions.	
comment	287	comment by: <i>DGAC France</i>
	<p>Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: "2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2."</p>	
response	Applicability has been extended to non-complex powered helicopters under conditions.	
comment	339	comment by: <i>René Meier, Europe Air Sports</i>
	<p>CS-SC056a 2-Applicability/Eligibility We would prefer "Aeroplanes not being complex motor-powered aircraft, aircraft up to ELA2.</p> <p>May we propose to study the inclusion of heavier helicopters than the ones fitting with the ELA2 limitations?</p> <p>6-Release to service In our view a "Release to service" by the Pilot-owner would be helpful.</p> <p>Rationale: The task surely was performed based on maintenance instructions by a responsible Pilot-owner, he/she surely is in a position to release the aircraft he/she wants to fly. Operational VOR equipment including LOC/glideslope indicators and converters contribute to a great extent to the safety of flight. Thinking of the the CB-IR and the EIR</p>	



	the availability of VOR (and DME as dealt with under CS-SC054a) will become more important in future.
response	Applicability has been extended to non-complex powered helicopters under conditions. See also the response to comment2.

<p>3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC101a</p>	<p>p. 34</p>
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comment	33	comment by: <i>Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016</i>
	e. g. Kannad 406 is a portable ELT. A change in several aircrafts is allowed. Is there for any installation an approval from certifying staff necessary? I think no!	
response	Not agreed. The Standard Change addresses fixed installation of ELTs. Any fixed installation of ELT has to be released to service by certifying staff.	

comment	76	comment by: <i>Luftfahrt-Bundesamt</i>
	<p>CS-SC101a Installation of emergency locator transmitter equipment (ELT)</p> <p>It should be mentioned that the installer must ensure that the equipment is installed so that in case of a crash it is unlikely that the antenna would be detached from the transmitter. ICA must be amended because of the check and the replacement of the ELT battery. The problem of the shielding by carbon layers (CFP-plastics) is not mentioned. 2 – Applicability/Eligibility: Add “and rotorcraft not being complex motor-powered aircraft” after “2 730 kg”</p> <p>ELT CS-SC101a, Page 34: Point 3 and/or point 5 should also refer to the important requirement of registering the ELT, although this is covered by Air Ops AMC and national regulations respectively.</p>	
response	<p>Accepted. The text has been amended accordingly. Partially accepted. Applicability has been extended to certain helicopters under conditions. Accepted. The text has been amended accordingly.</p>	

comment	94 ❖	comment by: <i>Avionitec Ltd</i>
	<p>2-Applicability: Aeroplanes should be replaced by Aircraft, consequently not complex powered Helicopters are also included. Additionally add ELA1 aircrafts.</p>	
response	<p>Partially accepted. Applicability has been extended to certain helicopters under conditions. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.</p>	



comment	137 Add 2. Rotorcraft not being complex motor powered aircraft	comment by: <i>Helicopter Club of Great Britain</i>
response	Partially accepted. Applicability has been extended to certain helicopters under conditions.	
comment	159 p. 34 Standard Changes CS-SC101a: Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligible for this standard change Section 3: The installer shall verify that the national Cospas Sarsat register is updated with the new installed ELT.	comment by: <i>Federal Office of Civil Aviation FOCA</i>
response	Comment in section 2 is partially accepted. Applicability has been extended to certain helicopters under conditions. By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes. Section 3 accepted. The text has been amended accordingly.	
comment	206 Paragraph 2 Applicability / Eligibility Current text is: Aeroplanes with MTOM below 2730 kg and ELA 2 aircraft Suggested new text: Aeroplanes with MTOM below 5700 kg, Rotorcraft with MTOM below 3175 kg and any ELA 2 aircraft Reason To include rotorcraft in Applicability / Eligibility	comment by: <i>European Private Helicopter Alliance</i>
response	Partially accepted. Applicability has been extended to certain helicopters under conditions.	
comment	211 CS-SC101a 2-Applicability/Eligibility Question: Does the 2730 kg limit have its origin in the FAA AC 43-13-2B Chapter 2 and is it mentioned to be consistent with a future harmonised FAR Part 23/CS-23 set of	comment by: <i>René Meier, Europe Air Sports</i>



	documents?	
response	We also would add "...aeroplanes up to ELA2 aircraft". We see, however, a need to clarify why once only "aeroplanes" are considered to be eligible, once "all (ELA2) aircraft".	
	Applicability has been extended to certain helicopters under conditions. Extending the applicability further may be considered in future.	
comment	288	comment by: <i>DGAC France</i>
	Considering the purpose of this change, the Applicability/Eligibility should be extended to aeroplanes of 5 700 kg MTOM or less and to rotorcraft of 3 175 kg MTOM or less. Therefore it is proposed to write the paragraph as follows: "2. Applicability/Eligibility: Aeroplanes of 5 700 kg Maximum Take-Off Mass (MTOM) or less; Rotorcraft of 3 175 kg MTOM or less; and Sailplanes, powered sailplanes, balloons and airships as defined in ELA1 or ELA2."	
response	Applicability has been extended to certain helicopters under conditions. Extending the applicability further may be considered in future.	
comment	343	comment by: <i>LAMA EUROPE</i>
	On two occasions CS-SC151a and CS-SR802a there is reference to non-English documents, for consistency reasons it would be better to either reference all documents in English or offer also possibility to use relevant procedures existing in other languages of Member States. Also consider possibility of non-official, but EASA recognized translations by sporting or Industry Association.	
response	It is inevitable to refer to other documents that are not issued by the Agency, and are considered suitable for the purpose. Most of these documents are written in English but it is possible that some are written in another language. Not referencing them as acceptable methods in a Standard Change would limit its use. Therefore, the Agency prefers to quote them in the Standard Change.	
comment	359	comment by: <i>European Sailplane Manufacturers</i>
	This CS-SC101 about installation / replacement is excluding the installation of antennas. The European sailplane manufacturers do not consider this limitation as helpful. It is true that any ELT (or other equipment reliant on radio signals) installation needs a suitable antenna installation. But if we all (the stakeholders and EASA) want to give an incentive for more and easier ELT installation by this CS-SC101 then antennas should be included. Otherwise EASA will continue to ask for approvals of regarding changes which often are possible only type by type. This is not financially feasible for a supplier of ELT systems (which might be even only a re-seller or importer). Ideally some "proper antenna installation examples" could be specified and published, which would be accepted in conjunction with this CS-SC101.	



These “proper antenna installation examples” could be subject of a regarding approved modification and/or subject of a comparative testing campaign by a organisation or result of an EASA-intern assessment.

Therefore we propose either that antenna installations are included without any limitation.
Or that antenna installation WHEN ACCEPTABLE TO EASA are included.
This second option would create a backdoor to establish such a list of “proper antenna installation examples”

Nevertheless if installation of such antennas is also covered by CS-SC004, then we are also satisfied.

response Installation of antennas for Mode -S transponder (and other antennas) is covered by CS-SC004

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC151a p. 35

comment 34 comment by: Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016

Did you ever was at a glider airfield? Or, have you seen a glider? I think no!
In elder glider, e. g. Cirrus or Glasfluegel, there were no headrests designed or installed.
So, many owners build there own headrest many, many years ago. What ist to do now?
Please skip your reglementation. It is better for the GA.

response Noted.

comment 77 comment by: Luftfahrt-Bundesamt

CS-SC151a
Installation of headrests

The possible interference of the controls due to the new equipment (headrest) is not mentioned. e.g. in a two seater with only the pilot flying and the second seat empty, the back rest moved forward during an manoeuver and blocked the elevator control.

response Accepted. The text has been amended accordingly.

comment 160 comment by: Federal Office of Civil Aviation FOCA

p. 35; Standard Change CS-SC151a:

Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)

response See the response to comment 2. Please be reminded that for the release to service of



sailplanes currently national regulations apply.

comment	219	comment by: <i>René Meier, Europe Air Sports</i>
	<p>CS-SC151a 2-Applicability/Eligibility This CS should be applicable to all aircraft within the scope of these CS's.</p> <p>Rationale: Headrests are safety device of relatively simple design, easy to install. As quite many aircraft seats do not feature adequate headrests, compared with cars, such installations increase pilots and passengers comfort and contribute to the safety of those on-board.</p> <p>6-Release to service The installation of headrests is, in our view, releasable to service by the Pilot-owner.</p> <p>Rationale: In our community a Pilot-owner also is PiC of such aircraft, he/she is fully responsible for the safety of the operations.</p>	
response	Noted. Extension of the proposed applicability will be discussed in phase 2 of this rulemaking activity. See also the response to comment 2.	
comment	289	comment by: <i>DGAC France</i>
	<p>In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows: « Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2.”</p>	
response	Accepted. The text has been changed accordingly.	
comment	290	comment by: <i>DGAC France</i>
	<p>In §3, specific documents are referenced to. It should be specified which date and revision are accepted and where it is possible to download them or be provided with.</p>	
response	Agreed. It is already stated that latest revisions apply unless otherwise indicated. A link to the document 'Kleine Fiberglas Flugzeug Flickfibel' is provided.	
comment	326	comment by: <i>The Finnish Aeronautical Association</i>
	<p>CS-SC151a Installation of headrests</p> <p><i>2 – Applicability/Eligibility : Sailplanes and Powered Sailplanes</i></p> <p>We see no reason not to have this applicable also for ELA1 aeroplanes. We propose that it is applicable for all ELA1 aeroplanes.</p>	



response	See the response to comment 219.
comment	<p>360 comment by: <i>European Sailplane Manufacturers</i></p> <p>The European sailplane manufacturers applaud this CS-SC151 as headrests are indeed very important with regard to occupant safety.</p> <p>Nevertheless some comments:</p> <p>Why limitation to sailplanes and powered sailplanes? Especially in aeroplanes the lack of headrests is also a severe safety problem. It would be very important to help those occupants as well.</p> <p>“The installed part is manufactured according to design data in compliance with CS 22.788 Headrests.” should be better worded as “The headrest installation and its parts is installed and manufactured according to design data in compliance with CS 22.788 Headrests.”</p> <p>It should read “Kleine Fiberglas Flugzeug Flickfibel” (only on “s” in “Fiberglas”)</p>
response	<p>See the response to comment 219.</p> <p>Partially accepted. Paragraph 3 has been amended accordingly. The typo has been corrected.</p>

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN —
SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — p. 36-37
Standard Change CS-SC152a

comment	<p>78 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC152a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC152a Changes to seat cushions including the use of alternative foam materials</p> <p>This standard change should be extended to include change of cover materials in the scope of cockpit/cabin refurbishment (if the used materials are delivered with a fire test certificate, which is normally the case) It must be ensured that no influence on the CG occurs.</p>
response	<p>Applicability has been extended to non-complex powered helicopters. Noted: Cover materials in the scope of cockpit/cabin refurbishment will be discussed during phase 2 of this rulemaking activity.</p>
comment	<p>89 comment by: <i>Andy Dixon</i></p>



	<p>The addition of interior trim coverings and carpets would allow cabin refurbishment to be accomplished, this is a common source of both cost and anxiety for owners of light aircraft and helicopters. Very frequently we see evidence of replacements having taken place without any regulatory oversight, failure to include this type of cosmetic enhancement in this NPA might well encourage this practice to continue. The proposal is very welcome and I fully understand the need for a progress and cautious approach.</p>
response	<p>Noted: Cover materials in the scope of cockpit/cabin refurbishment other than seats will be discussed during phase 2 of this rulemaking activity.</p>
comment	<p>119 comment by: UK CAA</p> <p>Page No: 36, 38</p> <p>Paragraph No: CS-SC152a, 153a</p> <p>Comment: It is unclear how the installer will determine that the replaced parts do not have to comply with 23.562 or equivalent.</p> <p>Justification: Clarity is required.</p>
response	<p>Accepted. A note has been added.</p>
comment	<p>138 comment by: Helicopter Club of Great Britain</p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Accepted. Applicability has been extended to non-complex powered helicopters.</p>
comment	<p>161 comment by: Federal Office of Civil Aviation FOCA</p> <p>p. 36; Standard Change CS-SC152a:</p> <p>Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)</p>
response	<p>See also the response to comment 2.</p>
comment	<p>170 comment by: Piaggio Aero Industries</p> <p>I suggest adding a recommendation to check for weight variation following foam replacement with a different one</p>
response	<p>Not accepted. This is part of common practice in maintenance and valid for all changes.</p>



comment	207	comment by: <i>European Private Helicopter Alliance</i>
	<p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft, without dynamically tested seats (according CS 23.562 or equivalent)</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft without dynamically tested seats (according CS 23.562 or equivalent)</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft without dynamically tested seats (according CS 23.562 or equivalent)</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>	
response	Accepted. Applicability has been extended to non-complex powered helicopters.	
comment	291	comment by: <i>DGAC France</i>
	This SC shall be extended to the refurbishing of the complete cabin interior including wall and ceiling linings, the covering of all upholstering, floors, and furnishings.	
response	Noted. Cover materials in the scope of cockpit/cabin refurbishment other than seats will be discussed during phase 2 of this rulemaking activity.	
comment	293	comment by: <i>DGAC France</i>
	For aircraft that have been certified against CAR3 requirements, materials used in the construction of seat cushions must be flash resistant and not flame resistant. Therefore, flame resistance requirements should not apply to them. FAA AC 43.13-1B chapter 9 contains acceptable data for all aircraft and should be referred to in this SC. Nonetheless, it should be recommended to use flame resistant materials for these aircraft.	
response	Not accepted: Having the different possibilities of material specification adds complexity to the change with negative safety benefit and limited cost benefit.	
comment	361	comment by: <i>European Sailplane Manufacturers</i>
	In both cases (energy absorbing foams as seat cushions and seatbelts / restraint systems) seats and belts falling under the dynamic testing requirements of CS 23.562 or equivalent are excluded.	
	The European sailplane manufacturers see here the problem, that it is really difficult for an owner or the person releasing such a standard change to make an assessment of this particular aircraft falls under this exclusion criterion or not.	



	<p>Secondly the sailplane manufacturers believe that use of such energy absorbing foams or newer seatbelts should always be seen as a benefit. Admittedly anyone could argue that under very special circumstances a safety reduction could be the result.</p> <p>For the time being the sailplane manufacturer would propose to leave the proposed wording, but in parallel to conduct research if dynamically tested seat / seatbelt systems could be included also.</p>
response	<p>First comment: Accepted. A note has been added. Second comment: Will be considered in phase 2 of this rulemaking activity.</p>

<p>3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC153a</p>	<p>p. 38</p>
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comment	<p>30 comment by: <i>The Norwegian Air Sports Federation</i></p> <p>We assume that this standard change also includes the installation of seatbelts with airbags. If not, this ought to be included to improve the level of general aviation safety.</p> <p>The requirement of an ETSO/JTSO approval should not be absolute – also an FAA TSO should suffice, bearing in mind that US standards are already being applied through the reference to AC 43-13-2B in the proposed CS.</p>
response	<p>Not accepted: It is not intended to have seatbelts or harness with airbags included in the first issue of CS-STAN. Prior to inclusion this needs to be further discussed. The current situation is that ETSO/JTSO is required (or grandfathered equipment). Currently the Bilateral Agreement with the US does not cover ETSO/TSO.</p>

comment	<p>79 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC153a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>
response	<p>Applicability has been extended to non-complex powered helicopters.</p>

comment	<p>139 comment by: <i>Helicopter Club of Great Britain</i></p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Applicability has been extended to non-complex powered helicopters.</p>

comment	<p>162 comment by: <i>Federal Office of Civil Aviation FOCA</i></p>
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p. 38 Standard Change CS-SC153a: Section 3: Only ETSO's as the latest Amendment are listed here. Previously accepted ETSO amendments (and accepted TSO's) should also be accepted.				
Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)				

response Not accepted: ETSO and JTSO are mentioned, as well as a flexibility clause for grandfathered equipment.
The current situation is that ETSO/JTSO is required (or grandfathered equipment). Currently the Bilateral Agreement with the US does not cover ETSO/TSO.
See also the response to comment 2.

comment 209 comment by: *European Private Helicopter Alliance*

Paragraph 2 Applicability / Eligibility

Current text is:
Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft, without dynamically tested seats (according CS 23.562 or equivalent)

Suggested new text:

Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft.

or

Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft.

Reason
To include rotorcraft in Applicability / Eligibility

Reason
Proportionality for NCO aircraft

response Applicability has been extended to non-complex powered helicopters.

comment 334 comment by: *Ralf Keil*

Replacement of safety belts;

There is a difference between this NPA and the definition of approved tasks according appendix VIII to Part-M (see Annex I to ED Decision 2008/013/R of 12/12/2008 - AMC Part-M).

Site 27: Pilot-Owner-Tasks for aeroplanes: "Safety Belts – Replacement of safety belts and harnesses excluding belts fitted with airbag systems"



	<p>German Aero Club means, there is no need for more restrictions. So EASA should clarify that the CS-SC153a is not applicable for aeroplanes ELA2 and below in case of replacement of safety belts. Otherwise EASA should clarify that the replacement of safety belts in these aircraft can be released by the pilot-owner.</p>
response	<p>Not accepted: The maintenance task in the Pilot-owner maintenance list (AMC to Appendix VIII of Part-M) does not allow for a change in the safety belt, but only for replacement with an identical one. The CS-SC153 allows for an exchange with a different safety belt as long as the requirements mentioned are fulfilled. For consistency with the meaning of the same term in Part-M, in CS-STAN the term 'replacement' is no longer used and instead the term 'exchange' is used.</p>

comment	<p>341 comment by: René Meier, Europe Air Sports</p> <p>CS-SC153a Question: Are safety belts/torso restraint systems with airbags available today included in this Standard Change?</p>
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Response	<p>Noted: It is not intended to have seatbelts or harness with airbags included in the first issue of CS-STAN. Prior to inclusion this needs to be further discussed.</p>
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comment	<p>362 comment by: European Sailplane Manufacturers</p> <p>In both cases (energy absorbing foams as seat cushions and seatbelts / restraint systems) seats and belts falling under the dynamic testing requirements of CS 23.562 or equivalent are excluded.</p> <p>The European sailplane manufacturers see here the problem, that it is really difficult for an owner or the person releasing such a standard change to make an assessment of this particular aircraft falls under this exclusion criterion or not.</p> <p>Secondly the sailplane manufacturers believe that use of such energy absorbing foams or newer seatbelts should always be seen as a benefit. Admittedly anyone could argue that under very special circumstances a safety reduction could be the result.</p> <p>For the time being the sailplane manufacturer would propose to leave the proposed wording, but in parallel to conduct research if dynamically tested seat / seatbelt systems could be included also.</p>
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response	<p>Accepted. A note has been added. Noted: Your second comment will be considered in phase 2 of this rulemaking activity.</p>
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3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC201a p. 39-40



comment	<p>58 comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i></p> <p>The more you know about your engine, the better you know how it feels and when it is time for maintenance. A good way to get to know your engine is through your engine instruments. Therefore the Agency should encourage owners to install this type of equipment, not only replace. This has a great impact on aviation safety and will be welcomed by the community.</p> <p>Change the wording from "replacement" to "installation". Why would you not encourage the installation of fuel management instruments? Accidents due to fuel starvation occur every year.</p>
response	<p>Noted. Applicability to cover 'installation' will be discussed in phase 2 of this rulemaking activity.</p>
comment	<p>80 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC201a Replacement of powerplant instruments</p> <p>The old and the new instrument shall not include Software or Airborne Electronic Hardware. What about the engine hour meter? 2 – Applicability/Eligibility: Add "and piston engine rotorcraft not being complex motor-powered aircraft" after "2 730 kg"</p>
response	<p>Concerning extending the applicability to other helicopters, the Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable, would make the Change impractical.</p>
comment	<p>96 comment by: <i>CAA-NL</i></p> <p>1. 1. In Standard Change CS-SC201a, At the end of the section 1, it is proposed to add a sentence similar to what is in CS-SC401a: "This Standard Change does not entitle the instalment of digital multifunction displays". Reason: It is obviously not the intention that installation of integrated digital instruments is done under CS-STAN as it is with flight instruments.</p>
response	<p>Accepted. A sentence has been added but the issue will be further discussed in phase 2 of this rulemaking activity.</p>
comment	<p>100 comment by: <i>Avionitec Ltd</i></p> <p>2-Applicability: Add Piston Engine Helicopters and ELA1 aircrafts</p>
response	<p>The Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.</p>



By definition, ELA2 aeroplanes encompass also ELA1 aeroplanes.

comment 140 comment by: *Helicopter Club of Great Britain*
 Add
 2. Rotorcraft not being complex motor powered aircraft
 response The Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.

comment 163 comment by: *Federal Office of Civil Aviation FOCA*
 p. 39 Standard Change CS-SC201a:
 Section 3: "Display of information is consistent with overall flight deck philosophy" seems to imply the impossibility to replace a conventional instrument with a digital one. Is this intended by the rule?
 This standard change should be modified in order also to allow installation of supplemental engine indication systems.
 Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)
 response Answer to section 3. The interpretation is correct. Your proposed change will be considered in phase 2 of this rulemaking activity.
 Noted. Applicability to cover 'installation' will be discussed in phase 2 of this rulemaking activity.
 See also the response to comment 2.

comment 210 comment by: *European Private Helicopter Alliance*
Paragraph 2 Applicability / Eligibility
 Current text is:
 Piston engine aeroplanes with MTOM below 2730 kg and ELA 2 aircraft
Suggested new text:
 Piston engine aeroplanes and rotorcraft with MTOM below 2730 kg and ELA 2 aircraft
or
 Piston engine aeroplanes and rotorcraft with MTOM below 2730 kg and ELA 2 aircraft
Reason
 To include rotorcraft in Applicability / Eligibility



response	The Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.
comment	<p>212 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SC201a 2-Applicability/Eligibility Question: Does the 2730 kg limit have its origin in the FAA AC 43-13-2B Chapter 2 and is it mentioned to be consistent with a future harmonised FAR Part 23/CS-23 set of documents?</p> <p>We also would add "...aeroplanes up to ELA2 aircraft". We see, however, a need to clarify why once only "aeroplanes" are considered to be eligible, once "all (ELA2) aircraft". Please also consider helicopters heavier than ELA2 600 MTOM rotorcraft.</p> <p>3-Acceptable methods, techniques and practices What is proposed under "Additionally..." is in our view too strict.</p> <p>Rationale: Progress cannot be stopped. New instruments are on the market, new technologies evolved, combinations must be allowed. Alterations have to be integrated in the relevant manuals.</p>
response	<p>The Agency considers this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.</p> <p>Noted. Change in the applicable additional considerations will be discussed in phase 2 of this rulemaking activity.</p>
comment	<p>233 comment by: <i>CAA CZ</i></p> <p>Standard Change CS-SC201a</p> <div style="border: 1px solid black; padding: 5px;"> <p>When replacing fuel flowmeters – how will compliance with certification specifications, e.g. CS 23.955(a)(2)(3) – Fuel flow, be ensured?</p> </div>
response	<p>Noted. Compliance with CS-STAN is ensured as the instrument is qualified according to the applicable ETSO/JTSO or equivalent and the instrument has the same functionality, is installed at the same location and is compatible with existing installation</p>
comment	<p>294 comment by: <i>DGAC France</i></p> <p>This standard change should also apply to piston engine helicopters.</p>
response	<p>The Agency considers this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change</p>



impractical.

comment 295 comment by: DGAC France

For instruments categories not covered by an ETSO, how does the person responsible for applying the standard change deals with the design eligibility of the equipment? I.e. which are the design requirements for these instruments?

response Noted. In the current text, only ETSO authorised equipment or an equivalent thereof is accepted. Applicability for other articles will be discussed in phase 2 of this rulemaking activity.

comment 296 comment by: DGAC France

DGAC France considers that this Standard Change should not apply when an electromechanical equipment is replaced by an electronic one.
There should be the same wording introduced in Paragraph 1 as for CS-SC401a: "This Standard Change does not entitle the instalment of digital multifunction displays."

response Noted: The given conditions (replacement only, same functionality, consistency with cockpit philosophy) limit the scope sufficiently.

comment 327 comment by: The Finnish Aeronautical Association

CS-SC201a - Replacement of powerplant instruments

3 - Acceptable methods, techniques and practices

We propose to allow a certain amount of flexibility to allow for installation of more modern instruments in place of archaic solutions. For example, to allow combination instruments for fuel quantity to save panel space. An amendment to the AFM is of course required in such cases.

response Noted. Will be discussed in phase 2 of this rulemaking activity

comment 332 comment by: Ralf Keil

Replacement of powerplant instruments:

Why only replacement of instruments? What about the associated sensors, transmitters and other parts?

German Aero Club suggest including these parts in this CS.

response Noted. Will be discussed in phase 2 if this rulemaking activity



comment	374	comment by: BGA
	<p>Standard Change CS-SC201a (page 40) Subject: Replacement of powerplant instruments Comment. This is quite vague. Will this mean where we currently have 6 analogue engine instruments and some are damaged and difficult to source, we can replace them with a single electronic display that covers the same area without the requirement for analogue back up? There are a few EFIS instrument displays that are EASA approved but usually have to have analogue redundancy unless original equipment. Is this effectively a way of approving FAA STCs on EASA approved instruments to be fitted to UK sailplane towing aircraft and motor gliders?</p>	
response	<p>Noted. The given conditions (replacement only, same functionality, consistency with cockpit philosophy) limit the scope. In phase 2 of this rulemaking activity inclusion of multifunction displays and installation of additional instruments will be discussed.</p>	

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC202a	p. 41-42
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comment	31	comment by: <i>The Norwegian Air Sports Federation</i>
	<p>Attachment #3</p> <p>We disagree that this standard change cannot be released to service by the Pilot-owner, of two reasons:</p> <p>1) Through EASA SIB 2011-01R2 (attached), EASA already allows the use of unleaded avgas UL91 manufactured according to ASTM D7547 or Hjelmcog avgas 91/96UL and 91/98UL in aircraft certified for avgas D910, as long as the engine is approved for avgas UL91. The SIB specifically says that no additional approval is required. Furthermore, the following recommendation is included in the EASA SIB:</p> <p><i>"Before using unleaded Avgas UL91, it is recommended to take the following actions:</i> <i>(1) Check the latest instructions of the engine type certificate holders to verify if the engine installed on their aeroplane is approved for use of unleaded Avgas UL 91.</i> <i>(2) Verify that the engine has not been modified or altered and meets the specifications of the original engine type certificate.</i> <i>(3) Install on each fuel cap a label from the fuel supplier or make your own placard identifying that unleaded Avgas UL 91 is acceptable fuel for the aeroplane."</i></p> <p>If the new standard change is introduced as is, it will require owners who have installed their own labels years back are suddenly required to have this done by a mechanic. This means the opposite of a simplification.</p> <p>2) According to Part-M replacing placards and signs is included on the list of allowed pilot-owner maintenance. Based on this, the pilot-owner should obviously be entitled to put avgas UL91 stickers on his/her own aircraft, as well as entering the change in the AFM.</p>	
response	<p>Agreed. In this specific case, release to service by the Pilot-owner will be accepted.</p>	



comment	<p>59 comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i></p> <p>This Standard Change is definitely suitable for release to service by the Pilot-Owner. This does not include any hardware installation or anything you need tools for, therefore it is a good example of something that the Pilot-Owner can do themselves and make a correct note in the book. The sticker on the tank can easily be applied without the help of any maintenance personnel.</p>
response	<p>In this specific case, release to service by the Pilot-owner will be accepted.</p>
comment	<p>81 comment by: <i>Luftfahrt-Bundesamt</i></p> <p>CS-SC202a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p>
response	<p>See the response provided to comment 213.</p>
comment	<p>141 comment by: <i>Helicopter Club of Great Britain</i></p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>See the response provided to comment 213.</p>
comment	<p>164 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <p>p. 41 Standard Change CS-SC202a:</p> <div style="border: 1px solid black; padding: 5px;"> <p>Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)</p> </div>
response	<p>In this specific case, release to service by the Pilot-owner will be accepted.</p>
comment	<p>183 comment by: <i>Ian HEY</i></p> <p>Paragraph 2. It is not clear whether this wording is intended to include or exclude powered sailplanes. Revise wording to make this clear.</p>
response	<p>Partially agreed. Paragraph 2 is revised to make clear that powered sailplanes are included.</p>
comment	<p>213 comment by: <i>European Private Helicopter Alliance</i></p> <p>Paragraph 2 Applicability / Eligibility</p>



	<p>Current text is: Aeroplanes other than complex motor-powered aircraft and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas</p> <p>Suggested new text: Aircraft, other than complex motor-powered aircraft, and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas</p> <p>or</p> <p>Aeroplanes and rotorcraft, other than complex motor-powered aircraft, and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>
response	Noted. Extension of this Standard Change to rotorcraft will be considered during Phase 2 of this rulemaking activity.
comment	<p>234 comment by: CAA CZ</p> <p>Standard Change CS-SC202a In points concerning gasoline – we are not sure whether given notices are sufficient to understand that the standard changes are not related to the approval of automobile gasoline.</p>
response	Not agreed. Note 2 clearly states that this standard change does not approve the use of automotive gasoline.
comment	<p>297 comment by: DGAC France</p> <p>This standard change should also apply to piston engine helicopters. In §3, replace “aeroplane” by “aircraft”.</p>
response	See the response provided to comment 213.
comment	<p>345 comment by: René Meier, Europe Air Sports</p> <p>CS-SC202a 6-Release to service</p> <p>We think a Pilot-owner is perfectly able to release his/her aircraft.</p> <p>Rationale: All relevant details were explained in EASA SIB 2011-01R2 and applying required stickers are on the list of allowed Pilot-owner maintenance.</p>
response	Agreed. In this specific case, release to service by the Pilot-owner will be accepted.
comment	<p>363 comment by: European Sailplane Manufacturers</p>



	<p>Under point 3 – acceptable methods,... repeatedly the word “aeroplane” is used despite the fact, that other aircraft including powered sailplanes are also affected. Replace “aeroplane” by “aircraft” in point 3.</p> <p>Furthermore in the 3rd bullet is is applicable only if “the installed engine has not been modified and meets the specifications of the original engine type certificate” – this should be amended by “OR STC”. Reason: the needed approval from the first bullet might be in the TC or a STC.</p>
response	<p>Agreed. References to aeroplane in bullet point 3 are changed to aircraft. Not agreed. Engines can be modified by STC in such a way that only high octane avgas (Avgas 100LL) has to be used.</p>

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC203a p. 43-44

comment	<p>18 comment by: <i>Mark Rumizen</i></p> <p>Neither Hjelmcø 91/96 UL nor 91/98 UL meet the requirements of ASTM D910. This is because section 6.2.1 of ASTM D910 specifies tetraethyl lead as a mandatory additive but neither one of these fuels contains this additive. That is why neither one of these fuel grades is listed in ASTM D910. The fuel composition would need to be adjusted to compensate for the absence of TEL. In addition, section 6.1 of ASTM D910 specifies that the fuel consist of "blends of refined hydrocarbons derived from crude petroleum, natural gasoline, or blends, thereof, with synthetic hydrocarbons or aromatic hydrocarbons, or both." But, Hjelmcø 91/96 is believed to contain ethyl tertiary butyl ether (ETBE) which is an ether (or oxygenate) and not a hydrocarbon. Use of a fuels containing non-hydrocarbon constituents are known to cause adverse materials affects, so a complete fuel system materials compatibility evaluation for each type and model of aircraft is necessary before permitting use of these fuels. This should be accomplished in coordination with the aircraft OEM or by STC.</p> <p>Neither Hjelmcø 91/96 UL nor 91/98 UL meet the requirements of ASTM D7547. Section 5.1 of ASTM D7547 specifies that the fuel consist of "blends of refined hydrocarbons derived from crude petroleum, natural gasoline, or blends, thereof, with synthetic hydrocarbons or aromatic hydrocarbons, or both." But, Hjelmcø 91/96 is believed to contain ethyl tertiary butyl ether (ETBE) which is an ether (or oxygenate) and not a hydrocarbon. Use of a fuels containing non-hydrocarbon constituents are known to cause adverse materials affects, so a complete fuel system materials compatibility evaluation for each type and model of aircraft is necessary before permitting use of these fuels. This should be accomplished in coordination with the aircraft OEM or by STC.</p> <p>This proposed change, if issued, may result in safety of flight risks due to the use of unknown chemicals in aircraft fuel systems.</p>
response	<p>Disagreed. Hjelmcø 91/96 UL and 91/98 UL does not contain ETBE or other oxygenates. It meets the requirements of ASTM D7547 and Def Stan 91-90.</p>

comment	<p>32 comment by: <i>The Norwegian Air Sports Federation</i></p>
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We disagree that this standard change cannot be released to service by the Pilot-owner, of two reasons:

1) Through EASA SIB 2011-01R2 (attached), EASA already allows the use of unleaded avgas UL91 manufactured according to ASTM D7547 or Hjelmcog avgas 91/96UL and 91/98UL in aircraft certified for avgas D910, as long as the engine is approved for avgas UL91. The SIB specifically says that no additional approval is required. Furthermore, the following recommendation is included in the EASA SIB:

*"Before using unleaded Avgas UL91, it is recommended to take the following actions:
 (1) Check the latest instructions of the engine type certificate holders to verify if the engine installed on their aeroplane is approved for use of unleaded Avgas UL 91.
 (2) Verify that the engine has not been modified or altered and meets the specifications of the original engine type certificate.
 (3) Install on each fuel cap a label from the fuel supplier or make your own placard identifying that unleaded Avgas UL 91 is acceptable fuel for the aeroplane."*

If the new standard change is introduced as is, it will require owners who have installed their own labels years back are suddenly required to have this done by a mechanic. This means the opposite of a simplification.

2) According to Part-M replacing placards and signs is included on the list of allowed pilot-owner maintenance. Based on this, the pilot-owner should obviously be entitled to put avgas UL91 stickers on his/her own aircraft, as well as entering the change in the AFM.

response Agreed. In this specific case, release to service by the Pilot-owner will be accepted.

comment 60 comment by: *Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe*

This Standard Change is definitely suitable for release to service by the Pilot-Owner. This does not include any hardware installation or anything you need tools for, therefore it is a good example of something that the Pilot-Owner can do themselves and make a correct note in the book. The sticker on the tank can easily be applied without the help of any maintenance personnel.

response Agreed. In this specific case, release to service by the Pilot-owner will be accepted.

comment 82 comment by: *Luftfahrt-Bundesamt*

CS-SC203a

2 – Applicability/Eligibility:
 Replace "aeroplanes" by "aircraft".

CS-SC203a
 Use of Avgas Hjelmcog 91/96 UL and 91/98 UL

An ASTM Standard is mentioned. Is this ok? In Europe a European standard seems more useful.



response	<p>See the response provided to comment 214. Second comment is noted. ASTM standards are widely used in aviation in Europe, however, the European standard (Def Stan 91-90) will be added.</p>
comment	<p>142 comment by: <i>Helicopter Club of Great Britain</i> Add 2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>See the response provided to comment 213</p>
comment	<p>165 comment by: <i>Federal Office of Civil Aviation FOCA</i> p. 43 Standard Changes CS-SC203a: Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)</p>
response	<p>In this specific case, release to service by the Pilot-owner will be accepted.</p>
comment	<p>214 comment by: <i>European Private Helicopter Alliance</i> Paragraph 2 Applicability / Eligibility Current text is: Aeroplanes other than complex motor-powered aircraft and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas Suggested new text: Aircraft, other than complex motor-powered aircraft, and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas or Aeroplanes and rotorcraft, other than complex motor-powered aircraft, and powered sailplanes powered by spark-ignited piston engines using Avgas or Mogas Reason To include rotorcraft in Applicability / Eligibility</p>
response	<p>Noted. Extension of this Standard Change to rotorcraft will be considered during Phase 2 of this rulemaking activity.</p>



comment	235	comment by: CAA CZ
	In points concerning gasoline – we are not sure whether given notices are sufficient to understand that the standard changes are not related to the approval of automobile gasoline.	
response	Not agreed. Note 2 clearly states that this standard change does not approve the use of automotive gasoline.	
comment	298	comment by: DGAC France
	This standard change should also apply to piston engine helicopters. In §3, replace “aeroplane” by “aircraft”.	
response	See the response provided to comment 213.	
comment	346	comment by: René Meier, Europe Air Sports
	CS-SC203a 6-Release to service We think a Pilot-owner is perfectly able to release his/her aircraft. Rationale: All relevant details were explained in EASA SIB 2011-01R2 and applying required stickers are on the list of allowed Pilot-owner maintenance.	
response	Agreed. In this specific case, release to service by the Pilot-owner will be accepted.	
comment	364	comment by: European Sailplane Manufacturers
	Under point 3 – acceptable methods,... repeatedly the word “aeroplane” is used despite the fact, that other aircraft including powered sailplanes are also affected. Replace “aeroplane” by “aircraft” in point 3. Furthermore in the 3 rd bullet is is applicable only if “the installed engine has not been modified and meets the specifications of the original engine type certificate” – this should be amended by “OR STC”. Reason: the needed approval from the first bullet might be in the TC or a STC.	
response	Agreed. References to aeroplane in bullet point 3 are changed to aircraft. Not agreed. Engines can be modified by STC in such a way that only high octane avgas (Avgas 100LL) has to be used.	

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC204a

p. 45

comment	35	comment by: Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016
	You never have seen the advantage of these devices. And, you was never in the situation	



	to use it. Please delete this.	
response	Not agreed. It is up to aircraft owner or operator to decide if the use of such devices is necessary or not.	
comment	83	comment by: <i>Luftfahrt-Bundesamt</i>
	CS-SC204a	
	2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.	
response	Agreed. Applicability has been extended to non-complex powered helicopters.	
comment	143	comment by: <i>Helicopter Club of Great Britain</i>
	Add	
	2. Rotorcraft not being complex motor powered aircraft	
response	Agreed. Applicability has been extended to non-complex powered helicopters.	
comment	166	comment by: <i>Federal Office of Civil Aviation FOCA</i>
	p. 43 Standard Changes CS-SC204a:	
	Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)	
response	See the response to comment 2.	
comment	215	comment by: <i>European Private Helicopter Alliance</i>
	Paragraph 2 Applicability / Eligibility	
	Current text is: Aeroplanes other than complex motor-powered aircraft and piston engine-powered sailplanes.	
	Suggested new text: Aircraft, other than complex motor-powered aircraft, and piston engine-powered sailplanes.	
	or	
	Aeroplanes and rotorcraft, other than complex motor-powered aircraft, and piston engine-powered sailplanes.	



	Reason To include rotorcraft in Applicability / Eligibility
response	Agreed. Applicability has been extended to non-complex powered helicopters.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — Standard Change CS-SC251a p. 46-47

comment	84 comment by: <i>Luftfahrt-Bundesamt</i>
	CS-SC251a Installation of an angle of attack indicator system (AoA) What about the flight testing? Is a PtF to be applied for? Or is there a carte blanche for flight testing in this case? If yes, it should be mentioned.
response	Noted: No permit to fly (PtF) is needed. A PtF is required to fly an aircraft that does not meet the applicable airworthiness requirements. According to ‘1. – Purpose’ and ‘4. - Limitations’, the AoA referred in CS-SC251 is not required by airworthiness requirements. A calibration flight is not a flight test.

comment	120 comment by: <i>UK CAA</i>
	Page No: 46/47 Paragraph No: CS-SC251a Comment: AoA systems generally need careful consideration of cockpit design and integration (indications etc) and careful installation including optimisation for use with various flap/slat settings. It is felt that this is more appropriately covered under a Major modification rather than a Standard Change. Justification: Coverage under Standard Changes does not give sufficient assurance that the above factors are adequately considered.
response	Not accepted. Considering the ‘Applicability’, the ‘Acceptable methods, techniques and practices’ and the ‘Limitations’ in SC251a, the installation of an additional AoA system should be appropriately covered by a Standard Change.

comment	121 comment by: <i>UK CAA</i>
	Page No: 47 Paragraph No: CS-SC251a, paragraph 5 Manuals Comment: It is noted that the equipment is supplemental to the certificated instrument fit, and no credit is to be taken, yet it does not insist that warning placards are mandatory (these are only shown as “if applicable”).



response	<p>Justification: Clarity is required that states that the associated warnings and placards must be adhered to.</p> <p>Proposed Text: “warnings and placards, if applicable”</p> <p>Agreed The text has been modified accordingly.</p>
comment	<p>167 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <p>p. 46; Standard Change CS-SC251a:</p> <div style="border: 1px solid black; padding: 10px;"> <p>FOCA supports the aim to promote and simplify the introduction of AoA systems. Having reviewed proposed CS-SC251a we have the following comments.</p> <p>- An approach based on FAA Memo AIR100-14-110-PM01 and ASTM F3011-13 is considered adequate in terms of set of requirements applicable to the system as well as to the system’s manufacturer (design and production requirements and FAA accessibility to design data, test witness).</p> <p>Following questions should be clarified in the proposed CS-SC251: What about AoA manufacturers that do not apply to the FAA? What about a system not compliant with ASTM F3011-13? Are these possible options? Or does CS-SC251a imply that EASA requests that only systems from manufacturers under the FAA system and having a FAA Letter Of Approval can be installed as SC?</p> <p>- FAA Memo AIR100-14-110-PM01 contains the following statement: “This AoA system has not been determined to be suitable for installation in any specific aircraft by _____ (the AoA system manufacturer). It may be installed in a type-certificated aircraft, provided that it has been determined suitable for installation by an appropriately rated mechanic by means such as field approval or as a minor alteration.” What guidance is available and should be used by the installers to establish whether the installation of a given AoA system can be handled “by means such as field approval or as a minor alteration” or, conversely, should be handled as a STC?</p> <p>- The calibration of an AoA is essential to its function and to the purpose of contributing to the reduction of I-LOC events. Depending on the system, the calibration can be relatively extensive in terms of necessary test activities. What are the prerequisites for an installer as to being capable of understanding the calibration requirements and carrying out the necessary tests? It is noted that failure to properly carry out these tasks may negate the effectiveness of the system or even have a detrimental impact on safety. Proposed CS-SC251a should provide guidance in this respect. For example a dedicated policy on how to carry out the required calibration tasks may be developed and introduced in proposed CS-SC251a. Given that often calibration is achieved by flight test, it is recommended that system and flight specialists jointly develop this guidance material.</p> <p>Other options could be:</p> <ol style="list-style-type: none"> 1. Encourage installers to seek assistance for calibration tasks from DOAs, EASA (Technical Advice) or the NAAs. 2. Temporarily manage the installation of AoA systems at least as minor change. The </div>



intent behind this approach is to be able to gather data about calibrations tasks and better assess any need to amend proposed CS-SC251a and release it as Standard Change at a later stage.

3. Manage the installation of AoA systems as Standard Change and require the installers to deliver the calibration test reports to EASA for review. In this case the intent is to be able to gather data about calibrations tasks and better assess need to amend proposed CS-SC251a.

Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3)

response Noted. The Agency agrees that the drafted Standard Change is just a first step as it is limited to a system conforming to ASTM F3011 which might be challenging for very simple systems installed on aeroplanes flying only day VFR. The standards require also the development of calibration methods. The information needs to be available to the installer.

In the absence of adequate industry standards for very small aeroplanes the installation of very simple systems will still require and STC-approval or minor change approval.

The additional considerations listed in the standard changes are deemed to be appropriate to allow qualified maintenance staff to release the installation of AoA sensors. See also the response to comment 2.

comment 236 comment by: CAA CZ

Installation of a preheater should be approved by a DOA organisation which is a TC holder of the aircraft.

response Not agreed. By following the acceptable methods, techniques and practices of this Standard Change, we consider that there is no need for a design approval by a DOA.

comment 299 comment by: DGAC France

In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows:
 “Aeroplanes not considered as complex motor-powered aircraft and Sailplanes, powered sailplanes as defined in ELA1 or ELA2.”

response Noted. There is no need to be consistent among the different Standard Changes with regards to the applicability, and, as e.g. balloons are not affected, the applicability of this Standard Change differs compared to others.

comment 301 comment by: DGAC France

Modify the end of §4 as follows:
 “[...]Any limitations defined by the AoA system manufacturer apply. Install the limitation placards, as required.”

response Accepted. The text has been modified accordingly.



comment	302	comment by: DGAC France
	<p>In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows: “The AFM Supplement shall, at least, contain: — the system description, operating modes and functionality; — the limitations, warnings and placards ; and — The emergency and normal operating procedures and limitations; — warnings and placards, if applicable. Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »</p>	
response	Accepted. The text has been modified accordingly.	
comment	365	comment by: European Sailplane Manufacturers
	<p>The European sailplane manufacturers support this incentive to make installation of an AoA system as uncomplicated as possible.</p> <p>Only these comments:</p> <p>First it should be better worded that the installation of a probe and/or the routing of some connections must not result into drilling openings into structurally critical parts. The wording “installation of the probe is in a non-pressurised area, preferably on an inspection panel” is too weak – just imagine the installer drills some holes into the (from the outside non-visible) wing spar...</p> <p>We propose to take the wording already used in CS-SC004: “The probe is installed in non-pressurised secondary structure areas unless the location is provisioned for this purpose in the airframe documentation.”</p> <p>Another critical item might be flight controls. We do not know if any AoA systems require connections through control surfaces or installation on/within control surfaces. If yes this should be done only in conjunction with an approved modification.</p>	
response	<p>You remark is noted. Your first comment is not accepted. Secondary structure is not always defined for small aircraft. Your second comment is not accepted. The non-interference with controls is already accounted for in the current text.</p>	

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I — p. 48-49
Standard Change CS-SC401a

comment	36	comment by: Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016
	<p>OK, the pilot is so stupid that he can't install this ... Sorry, the pilot has no brain ... and you never have seen these instruments ... You did a bad copy from FAA rules. Everybody knows that Americans can't act without an instruction. European people are different: They can think!</p>	



	Delete this!
response	Noted.
comment	48 comment by: <i>J.Bedriřana</i> In Standard Change CS-SC401a "Replacement of basic flight instruments", the reference to FAA Advisory Circular AC 43-13-2B Chapter 2, should be corrected to make reference to Chapter 11 instead Chapter 2
response	Agreed. The text has been corrected.
comment	61 comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i> This subject should at least in parts be changed to installation and not only replacement. The Agency needs to realise that some instruments are easier to install than others, an electrical powered instrument is very easy to install, a vacuum powered is more complex if there is no vacuum system already installed. The use and installation of instruments should be encouraged. A Part-145 is competent enough to install these instruments without special approval. The Agency mentioned legal activities earlier in the explanatory note. Many of these are due to the fact that the aircraft is not equipped to the required standard. The Agency now has a good opportunity to set things straight and allow a complete upgrade from VFR to IFR equipment. The maintenance facilities have the required competence and skill to do these kind of installations on all aircraft in this segment. If this is corrected, it will be of great benefit for the community and also reduce the illegal activities mentioned.
response	Noted: An upgrade from VFR to IFR is not accepted as a Standard Change in this phase. Extension to installation of additional instruments will be discussed in phase 2 of this rulemaking activity.
comment	85 comment by: <i>Luftfahrt-Bundesamt</i>



	<p>CS-SC401a</p> <p>2 – Applicability/Eligibility: Replace “aeroplanes” by “aircraft”.</p> <p>CS-SC401a Replacement of basic flight instruments</p> <p>The old and the new instrument shall not include Software or Airborne Electronic Hardware. The old and the new instrument must be self-contained and not part of a distributed instrument system. The illumination (including dimming) of the new instrument shall be at least as efficient as it was previously. Artificial horizon and pressure altimeter perform functions which are classified as HAZ or CAT in case of IFR (or VFR-Night) operation. If it is not intended to exclude them in case of IFR it must be ensured that the quantitative reliability figures of the new equipment are at least as good as these figures of the old devices.</p>
response	<p>Concerning extending the applicability to other helicopters, the Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical. Concerning the second comment, this is not agreed The concerns are sufficiently addressed through the required qualifications of the new equipment and the additional considerations given, e.g. same functionality, same location and display of information is consistent with the overall flight deck design philosophy.</p>
comment	<p>144 comment by: <i>Helicopter Club of Great Britain</i></p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Not agreed. The Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2) since the limitations that would be applicable, would make the change impractical.</p>
comment	<p>171 comment by: <i>Piaggio Aero Industries</i></p> <p>The SC requires ascertaining the new equipment is suitable for environmental conditions to be expected during normal operation. I suggest adding a recommendation to check that new equipment used for critical functions (e.g., airspeed instruments) are such to perform their intended function under any foreseeable operating condition (ref CS23.1309). See also general comment 169</p>
response	<p>Noted. The concern is already addressed by having imposed the requirement that the equipment is suitable for the environmental conditions.</p>



comment	<p>174 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <p>p. 48; CS-SC401a:</p> <p>Section 2: Rotorcraft, Ballons and Airships and ELA 1 should also be eligibile for this standard change.</p> <p>Section 3: Please add that especially for bank and pitch, the replacement instrument shall be calibrated for the same instrument panel tilt as the original instrument.</p> <p>Section 3; 6th dash: the test results shall be recorded and archieved with the aircraft documents.</p> <p>Section 6: It shall be stated which licence is required to release the aircraft to service (B1/B2/B3)</p>
response	<p>Response to the comment in Section 2: Not agreed. The Agency considers that this Standard Change is not suitable for Helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical. ELA2 aircraft encompass ELA1, balloons and most airships.</p> <p>Response to the comment in Section 3: Noted: It is already required to calibrate the instrument to guarantee that under the same conditions the indications provided by the old and the new instrument are the same.</p> <p>Response to second comment in Section 3. This has been already requested in Form 123 Box 6.</p> <p>See also the response to comment 2.</p>
comment	<p>181 comment by: <i>Howard Torode</i></p> <p>Comment by European Gliding Union.</p> <p>While welcoming this measure, the EGU finds this overly restrictive as applied to sailplanes. CS-22 does not stipulate any specific arrangements of flight instruments in sailplanes, and it has been common, and safe, practice for owners to customise the layout of their panels, and to adjust these in response to emerging technology. There are no standard 'flight deck design philosophies' (quote) applied to sailplanes. Thus the word 'replacement' needs clarification. If, as it seems in sub item (2), this means strictly 'replacement within the same panel aperture' this is unacceptable. A replacement within the total panel areas would meet current practice. (Note that instruments are still transitioning for 80mm to 57mm diameter, opening up valuable space on panels for additional instruments/technologies).</p> <p>Given some relaxation of these measures we would anticipate that a requirement for ease of view and adjustment by the pilot might be added. All other sub item requirements are acceptable to us.</p>
response	<p>Noted: This will be discussed in phase 2 of this rulemaking activity but CS-SC402a already allows quite some flexibility for installation of equipment in sailplanes.</p>



comment	193	comment by: BGA
	<p>Comment by British Gliding Association on SC401a</p> <p>This is a welcome this measure, but we find it overly restrictive in its application to sailplanes. CS-22 does not stipulate any specific arrangements of flight instruments in sailplanes - indeed it has been common and safe practice for sailplane owners to customize the layout of their panels, and to adjust these in response to emerging technology</p> <p>The direct 'replacement' in situ of an instrument, as described in sub item (2), is overly restrictive and unacceptable. Our historic practice, previously accepted by our CAA, was to enable general replacements within a (single) panel area in accordance with instrumentation developments and to the owner's requirements, following the general practices of CS-22. (Note that instruments are still transitioning for 80mm to 57mm diameter, opening up valuable space on panels for additional instruments/technologies).</p> <p>We seek a relaxation of these measures as suggested above.</p>	
response	Noted: This will be discussed in phase 2 of this rulemaking activity but CS-SC402a already allows quite some flexibility for installation of equipment in sailplanes.	
comment	216	comment by: European Private Helicopter Alliance
	<p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft with a maximum flight altitude below FL280 and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, with a maximum flight altitude below FL280, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, with a maximum flight altitude below FL280, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>	
response	Not agreed: the Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.	
comment	220	comment by: René Meier, Europe Air Sports
	<p>CS-SC401a 2-Applicability/Eligibility</p>	



	<p>The FL280 criterion is sensible, but if the aircraft technically has a higher ceiling, there should be an option to apply CS-SC401-a.</p> <p>Including sailplanes and powered sailplanes would add opportunities to their operators as regards installing instruments of the latest technologies.</p> <p>Rationale: Such an option would bring more operational flexibility while respecting the non-RVSM limitations.</p> <p>Sailplanes and powered sailplanes are typically used in recreational activities within groups/clubs or by private Pilot-owners. Offering them flexibility adds to the safety of flight because they best know their needs.</p>
response	<p>Noted: The comment is not fully understood. Sailplanes and powered sailplanes are already encompassed in ELA2 aircraft. Aeroplanes operated above FL 280 are intentionally excluded.</p>
comment	<p>237 comment by: CAA CZ</p> <p>Installation of an angle of attack indicator system – for this change there is a significant link to already approved AFM data. In addition, in our opinion, this installation should be verified in flight and thus it is completely outside of the range of Standard Changes. We propose to solve it as a major change.</p>
response	<p>Not agreed. Verification/calibration flights are not to show compliance, but to verify the adequacy of installation and calibration. Standard Changes do not distinguish between minor and major changes.</p>
comment	<p>304 comment by: DGAC France</p> <p>This standard change should also apply to helicopters not being complex motor powered aircraft.</p>
response	<p>Not agreed. The Agency considers that this Standard Change is not suitable for helicopters other than VLRs (included in ELA2), since the limitations that would be applicable would make the change impractical.</p>
comment	<p>305 comment by: DGAC France</p> <p>Why the limitation of FL280 has been introduced?</p>
response	<p>Noted. This is because of the RVSM requirements above FL 280</p>
comment	<p>366 comment by: European Sailplane Manufacturers</p> <p>Under point 1 – purpose the word “instalment” is used. It should be “installation” as we think that “instalment” is a financial term.</p>
response	<p>Typo has been corrected.</p>



**3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN —
SUBPART A — STANDARD CHANGES SUBPART A — STANDARD CHANGES — APPENDIX I —
Standard Change CS-SC402a**

p. 50-51

comment 37 comment by: *Klaus Lehmkoester - CAMO, DE.MG.1016, LBA.MG.1016*

You have never have seen a glider!!!
We are in Europe and not in USA! If you want the FAA rules, ok. But then, please delete all your EASA rules and then suspend the EASA.
Delete this paragraph.

response Noted.

comment 86 comment by: *Luftfahrt-Bundesamt*

CS-SC402a
Installation of 'sailplane equipment'

Wires and shielding are not mentioned. Fuses or circuit breakers (CB's) required, electric load analysis (ELA) required.

response Accepted. The text has been amended accordingly.

comment 175 comment by: *Federal Office of Civil Aviation FOCA*

p. 50; CS-SC402a:

Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3).

response See the response to comment 2.

comment 180 comment by: *Howard Torode*

Comment by European Gliding Union

The '.. system...' whose total weight is 1.5kg is not well defined. If this is not mounted in a panel, it is presumably permitted to be mounted elsewhere?

Further we are disappointed to find that the instrument panel installation mass has been limited to 150 grams (being 10% of the original system mentioned above). This is unnecessarily and inconveniently low because (1) it limits the application of the measure to an unrealistically small population of equipments, and (2) because items of this nature can be more than adequately secured with normal fasteners available for aeronautical use, including anticipating that they might subjected to the high inertia loading expected to be survived in a crash. (For example a standard fitment in an 80mm panel aperture with standard fastener screws is quite capable of carrying a unit such as an artificial horizon, or similar). We would suggest that 'soaring' items up to at least 500grams, if not



1kg, could be properly accommodated in a standard panel (for example moving map displays). This would also be more in line with current practice on basic instruments. Finally, we note that there are no specific structural requirements in CS-22 applied to cockpit or panel systems, so why is an additional requirement being implied here?

The requirement for the manufacturer to 'foresee' heavier installation (>150g) may or may not be helpful. Unless very widespread usage of a particular equipment becomes standard practice (such as the case of FLARM), a manufacturer is unlikely to take proactive action to accommodate these. By this time it will be too late as most owners will have taken their own action to create installations anyway.

Thus, a relaxation beyond the present draft limit is proposed to allow a wider range of future equipments to be accommodated without further future regulatory action on behalf of EASA or the aircraft manufacturer.

response Partially accepted.
 The text has been modified to allow more flexibility with regard to the weight of the installed equipment. However, the installer has to follow the instructions of AC 43-13-2B in order to address the structural integrity.
 It is disagreed that CS-22 has no requirements that are applicable to the instrument panel, since 22.561 (d), 22.786, and 22.787 apply.

comment 184 comment by: *Ian HEY*

Paragraph 3: The limit of 150g for devices to be installed in a panel is excessively low. I have been unable to find any instrument weighing less than 300g. Delete both bullet points, and state that the weight of the complete panel must not exceed any limit stated by the airframe manufacturer. The total system weight (of new equipment:1500g) is reasonable.

response Accepted.
 The text has been modified to allow more flexibility with regard to the weight of the installed equipment. However, the installer has to follow the instructions of AC 43-13-2B in order to address the structural integrity.

comment 194 comment by: *BGA*

Comment by British Gliding Association on CS402a

The 'system' whose total weight whose 1.5kg is not well defined. If this is not mounted in a panel, it is presumably permitted to be mounted elsewhere?

The weight limit for additional panel equipment is too low. We are disappointed to find that the instrument panel installation mass has been limited to 150 grams (being 10% of the original system mentioned above). This is unnecessarily and inconveniently low because: (1) it limits the application of the measure to an unrealistically small population of equipments, and (2) because items of this nature can be more than adequately secured with normal fasteners available for aeronautical use, including anticipating that they might be subjected to the high inertia loading expected to be survived in a crash. For example a standard fitment in an 80mm panel aperture with standard fastener screws is quite capable of carrying a unit such as an artificial horizon, or similar.



We would suggest that 'soaring' items up to at least 500grams, if not 1kg, could be properly accommodated in a standard panel (for example moving map displays). This would also be more in line with current practice on basic instruments. Finally, we note that there are no specific structural requirements in CS-22 applied to cockpit or panel systems, so why is an additional requirement being implied here?

The complementary requirement for the manufacturer to 'foresee' heavier installation (>150g) is unlikely to be helpful. Unless very widespread usage of a particular equipment becomes standard practice (such as the case of FLARM), a manufacturer is unlikely to take proactive action to accommodate these. By this time it will be too late as most owners will have taken their own action to create installations anyway.

Thus, a relaxation is required to allow a wider range of future equipments to be accommodated without further future regulatory action on behalf of EASA or the aircraft manufacturer.

response Same comment as comment 180. Please see response to comment 180.

comment 221 comment by: René Meier, Europe Air Sports

CS-SC402a
2-Applicability/Eligibility
We would like to get an applicability extended to all aircraft within the scope of these CS's.

Rationale:
Devices listed under "1-Purpose" may also support operations of other flying machines than sailplanes and powered sailplanes.

3-Acceptable methods, techniques and practices.
Please delete the two bullet points after "The total weight..."

Rationale:
Both limits the Agency proposes are not proportionate, do not change the characteristics of flight, do not hamper flight safety, are, in our view, not based on experience gained in flight operations, particularly not on experience gained in operations of sailplanes and powered sailplanes where no specific instrument panel requirements are in place under CS-22.

response 2- Not accepted. This change is based on the standard parts definition of AMC 21.A.303 (c) 2 dedicated to sailplanes.
3- Partially agreed. See response to comment 180

comment 308 comment by: DGAC France

In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows:
« Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2.”

response Agreed. The text has amended accordingly.



comment	309	comment by: <i>DGAC France</i>
	In paragraph 3, as additional considerations, add a bullet stating that: “– The design of the equipment installation must take into account crashworthiness, arrangement and visibility and interferences with other equipment.”	
response	Accepted. The text has been amended accordingly.	
comment	310	comment by: <i>DGAC France</i>
	In paragraph 4, modify the first bullet as follows: “– The provided information is used only in an advisory or supplementary manner (no hazard, no credit basis). A specific placard indicating “For Situation Awareness Only” must be installed.”	
response	Not accepted. For the installation of standard parts, in accordance with AMC 21.A.303 (c) 2, such placards are usually not mandated	
comment	312	comment by: <i>DGAC France</i>
	In order to use the usual AFMS scheme, it is proposed to rewrite §5 as follows: “The AFM Supplement shall, at least, contain: – the system description, operating modes and functionality; – the limitations, warnings and placards ; – The emergency and normal operating procedures and limitations; – instructions for software and database updates. and – warnings and placards, if applicable. Amend the Instructions for Continuing Airworthiness to establish required maintenance actions/inspections and intervals, as required. »	
response	Partially accepted: The text with regard to the AFM has been modified.	
comment	328	comment by: <i>The Finnish Aeronautical Association</i>
	SC402a Installation of ‘sailplane equipment’ <i>2 – Applicability/Eligibility : Sailplanes and powered sailplanes</i> We propose to extend the applicability to any ELA1 aeroplane carrying a maximum of 2 persons and used in day VFR operation. This proposal is based on the EASA Risk hierarchy and the principle of proportionality embodied in the GA strategy. For powered airplanes, the list of equipment would tentatively include ball/slip indicators, navigation computers, data loggers and cameras.	
response	Not accepted. This change is based on the standard parts definition of AMC 21.A.303 (c) 2 dedicated to sailplanes.	
comment	338	comment by: <i>Gehling Flugtechnik GmbH</i>
	Comment to the NPA 2014-14.	



The NPA 2014-24 is a very important paper for all part 145 organizations working in GA Planes business! So comments to this can help a lot to get a good tool to create CS-Stan`s!

With the release of commission regulation (EU) No.1321/2014 EASA at the 17.Dec.2014 under M.A.304c the regulations of (EU) No. 748/2012 are reaching our level as a tool to use in the maintenance and CAMO organization of GA aircraft below 5,7 t.

The NPA 2014-24 is the first possible way to keep the “standard changes” or “standard repairs” as regulated under 21.A.903 and 21.A.431B into live! This helps a lot!

In reason of this new options, it is necessary to expedite the publication date of the decision, based to NPA 2014-24, to the earliest possible date!!!!!!!

The NPA 2012-24 and her containment I found good in general, no changes, just ad`s are needed from my point of view.

It should be fine, if this additional will be integrated before publication date, to be part of the decision!

On the area of “standard changes” according to 21.A.90B I`d like to add all changes on planes below 5,7t based to STC`s! This STC`s are issued by ICAO based bilateral safety agreement countries. The way of performing STC`s is shown from UK with the CAA release 22 October 2014 under “Red Tape” philosophy of changing BCAR CAP554 Chapter B2-5! This is already law to use for UK non EASA Aircraft. It should be really good to use this solution to create a CS-Stan for “standard changes” on EASA aircraft as well!

On the side of “standard repairs” according to 21.A.431B often we do have problems, doing interior or paint-jobs! The “repairs” in this area officially need to have EASA Form One or 8130-3 parts to perform! On paints or interior materials it isn`t possible to get this forms because these are not “parts” as given under their definition! Paint, fabric, leather, glue or others are just certified Materials, not parts! Additional to this, in reason of transport regulations of hazardous goods, sometimes it is impossible to get the original materials from airplane manufacture! Sometimes plane manufacture are unable to deliver interior or exterior materials as well, because no longer available! To perform the job on a GA plane, officially there is a need to have a 21g organization in almost each case! This is stupid and expensive unnecessary staff.

Under declaration of this jobs as “standard repairs”, creating a CS-Stan with an entry of using the materials which meets the standards of regulations which were used to issue the original TCDS of the particular plane, would be a practicable way of repairs!

A practicable way of repair as well is the procedure of repair and overhaul of flexible hoses, safety bells, ignition harnesses and others, without using manufactures data and” form one parts”! It must be possible to repair or overhaul these parts by using specialized part 145 organization, certified materials which meets part 21g specifications, but without part 21g organization! A declaration for this jobs as “standard repairs” using a created CS-Stan will solve this problem!

That`s it, otherwise I`m fine with the NPA 2014-24.

response

Noted.

Today nor the existing bilateral agreements nor Part-21 allows the formal recognition of



STCs approved under a foreign system. CS-STAN cannot go beyond these rules. Concerning your comments on repairs, it should be mentioned that raw or consumable material do not need a Form 1 but need to meet the required specification (see M.A.501 (d)). In addition, for ELA1 and ELA2 aircraft, 21A.307 (c) allows to install parts without a Form 1 when the required provisions are met.

comment	367	comment by: <i>European Sailplane Manufacturers</i>
	<p>The European sailplane manufacturers have two comments:</p> <p>First any data link / data connectivity to “mandated” equipment is not allowed. This is harder than for moving map systems (see CS-SC052) and therefore too onerous. Similar as with CS-SC052 it should be allowed if either the manufacturer of the “mandated” equipment lists it as being compatible or if a regarding approved modification has been made showing this compatibility.</p> <p>Second it should be allowed by EASA to widen the application of this AMC 21.A.303 (c) also to light aeroplanes.</p>	
response	<p>Not accepted. The proposed approach has to be covered by an individual design approval. Second comment is not accepted. SC-CS402 is applicable to sailplanes. Extending the applicability of AMC 21.A.303 (c) 2. to other aircraft is not part of this rulemaking activity.</p>	

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART B — STANDARD REPAIRS

p. 52

comment	39	comment by: <i>DE LOOF JEAN PIERRE</i>
	<p>The French Gliding Federation requests that the training course in both maintenance techniques and repairs, applicable to aircraft ELA,, composite structure, is included in the "Acceptable methods, technical and practice" presented in the NPA 2014-24page 54</p> <p>This course has been approved by the DGAC (Reference DSAC/NO/AGR-DOFO-12-0029 2012 june 06). Training courses are organized by the FFFV for training mechanics. This course is one of the modules necessary for obtaining the national license and the European license (same syllabus)</p>	
response	<p>Noted. Adding other references to Paragraph 3. ‘Acceptable methods, techniques and practices’ can be considered in a later issue of CS-STAN (e.g. phase 2 of this rulemaking activity).</p>	
comment	126	comment by: <i>DGAC</i>
	<p>Comment about CS-SR801a</p> <p>Reference to AC43-13-1B reports to Chapter 1 "wood structure", then to chapter 1.4 Adhesives (pages 1-3 and 1-4), then to US regulations (Mil Spec or Federal Spec). In france, DGAC, since the years 1991/1995, approved the replacement of old AIR regulations by a set of "normes françaises" (french regulations) to approve the use of</p>	



wood and glues to product new wood aircrafts and to repair wood structures.

The set of french regulations is (applicable to repair all wood airplanes, witout TC holder approval, as AMC):

NF L 17-996 "Bois bruts débités" (Raw Wood Timber) (1995) - Specifications techniques, methodes d'essai et conditions d'emploi
 NF L 18-130 "Panneaux contreplaqués" (Plywood) (1995) - Specification d'approvisionnement et methodes d'essai
 NF L 17-990 "Adhesifs pour structures d'aeronefs en bois" (Wood adhesives) (1995) - specification technique et methodes d'essai
 NF L 17-500 "Adhesifs structuraux" (Structural Adhesives) (1991) - Classification et qualification

It is requested that these requirements would be taken in account, on wood structure repairs, as § Acceptable methods, techniques and practices, in the same way than CS-SR802a.

response Noted. Adding other references to Paragraph 3. 'Acceptable methods, techniques and practices' can be considered during a later issue of CS-STAN (e.g. phase 2 of this rulemaking activity).

comment 329 comment by: *The Finnish Aeronautical Association*

No comments to this section of the NPA.

response Noted.

comment 348 comment by: *Ralf Keil*

German Aero Club ask EASA adding CS-SR803a (?) - Repair of balloons (hot air and gas).

If necessary, German Aero Club can assist EASA during the development of the CS.

response Noted. Refer to the response to comment 347.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART B — STANDARD REPAIRS — APPENDIX II — Standard Repair CS-SR801a p. 53

comment 7 comment by: *FFAé*

A french translation of FAA AC 43-13-1A (aircraft inspection and repair) and FAA AC 43-2A (aircraft alteration) exist at the Quebec National Library

response Noted.

comment 87 comment by: *Luftfahrt-Bundesamt*

CS-SR801a



(A)
2 – Applicability/Eligibility:
Replace “aeroplanes” by “aircraft”.

Standard Repair CS-SR801a (Page 53) and CS STAN.30 (page 15/16):

(B)
a) Under point 1 “Purpose” it should be made clear that mixed structures are also included. Similar for CS-SR802a.

(C)
Acc. to the FAA Circular the data generally pertains to minor repairs, but might also be used for major repairs subject to the FAA approval process. CS-STAN.30 simply explains that references to foreign legislation should be replaced by relevant European rules. The FAA Circular now contains phrases like “The FAA should be contacted”, “an proposed use should be discussed with the appropriate FAA office”, “obtain approval of a representative of the FAA”, “FAA-certified mechanic”, reference to a major repair with “FAA Form 337”, “FAA field approval” etc.

As the way how to handle with such FAA AC requirements in specific cases is prescribed in CS STAN.30 only very generally, this might cause misunderstanding and insufficient consideration of the European Approval process. In addition strictly speaking CS-STAN.30 only covers “references to foreign legislations”, which might not cover all the cases listed above.

(D) In general for CS-SR801a and CS-SR802a:

We recommend putting CS-SR801a and 802a together as there is no real need to differentiate.

In so doing the “Acceptable methods, techniques and practices” of 802a will be applicable for ELA1 / ELA2- aircraft as well.

For all other non-complex motor-powered aircraft the chapter “3- Acceptable methods, techniques and practices” will refer to the FAA AC only, but for this our general language concerns should be considered.

response

Note: Comment marked with dividers for better response

(A) Not accepted. The AC 43-13B has been built to fit with the general aviation needs mainly for airplanes, it means that the wording, the examples (spar, ribs) given are well appropriate for GA airplanes repairs but some confusion can be introduced if extended to rotorcraft. Additional precaution is needed if the AC43-13B is proposed to be extended to rotorcraft.

(B) Accepted: Under 1 ‘Purpose’ mixed construction included for both SR801 and SR802.

(C) The acceptable methods described in AC 43.13 do not necessarily distinguish their use depending whether the repairs would have been considered as a major or minor repair. The paragraph 21A.431B does not require to make this distinction either.

Also, the new paragraph CS STAN.40 has been amended.

(D) Not accepted. The Agency has decided to split the two Standard Repairs since it considers that ‘Applicability’ (and other headings) differ.

comment

107

comment by: Swedish Transport Agency



(Appendix II, p53) Standard repair CS-SR801a

Item 4 – Limitations (or Item 3)

- It should be further explained that when the AC 43-13-1B mentions major repair, this means it is outside the scope of the CS-STAN standard repairs. A note in item 3 (Acceptable methods, techniques and practices) or 4 (Limitations) may help to observe (highlight) this.

Refer to Preamble, CS-STAN.30 Referenced documents

Last sentence: “References to foreign legislation in the referenced documents are not applicable and are replaced by the relevant European rules (e.g. approval process described in FAA Advisory Circular AC43.13 to obtain an FAA field approval should be ignored and, instead, the installer shall follow the European rules).”

response

Partially accepted. Classification minor/major is not applicable for Standard Repairs (see Part 21.A.431B). The limitations introduced in the CS-STAN, together with the involvement of the certifying staff being responsible for the repair, is considered adequate for the use of the acceptable methods, techniques and practices contained in AC 43.13. The repair schemes given in AC 43.13-1B are applicable as described under 4 ‘Limitations’. For clarity, Item 1 ‘Purpose’ and Item 4 ‘Limitation’ have been amended.

comment

122

comment by: UK CAA

Page No: 53**Paragraph No:** CS-SR801a Paragraphs 1, 3 and 4**(A) Comment:** Paragraphs 1 and 3:

Reference is made to the FAA AC 43-13-1B - this is intended only for minor repairs, with major repairs being subject to FAA review even if they follow the general principles of FAA AC 43-13. It is unclear how classification of repair and such review of majors is to be carried out under the EASA system.

(B) Comment: Paragraph 4:

Limitations are shown as ‘not applicable’, but the FAA AC contains a significant number of limitations (reference FAA AC 43-13-1B Para 1 Purpose):

“- non-pressurized areas of civil aircraft,

- only when there are no manufacturer repair.
- This data generally pertains to minor repairs.
- The repairs identified in this AC may only be used as a basis for FAA approval for major repairs.
- The repair data may also be used as approved data, and the AC chapter, page, and paragraph listed in block 8 of FAA form 337 when:
 - a. the user has determined that it is appropriate to the product being repaired;
 - b. it is directly applicable to the repair being made; and
 - c. it is not contrary to manufacturer’s data.”

Note this is a general concern and comment that may also be applicable to CS-SR802a etc.



response	<p>Justification: Clarity is required.</p> <p>Partially accepted. Text is revised. Note: Comment marked with dividers for better response (A) Classification minor/major is not applicable for Standard Repairs (see Part 21.A.431B). The limitations introduced in the CS-STAN, together with the involvement of the certifying staff being responsible for the repair, is considered adequate for the use of the acceptable methods, techniques and practices contained in AC 43.13. The repair schemes given in AC 43.13-1B are applicable as described under 4 ‘Limitations’. For clarity reason Item 1 ,’Purpose’ and Item 4 ‘Limitation’ have been amended. (B) All limitations of the AC are directly valid also for a Standard Repair as noted in the ‘Subpart A – General’ of the CS (see CS-STAN.40).</p>
comment	<p>123 comment by: UK CAA</p> <p>Page No: 53 & 54</p> <p>Paragraph No: CS-SR801a and 802a, Paragraph 4 Limitations</p> <p>Comment: Limitations are quoted as “N/A”. This is too wide for the application of the proposed methods and techniques. More careful review is required for the primary structure, covering potential effects on fatigue lives, and potential for flutter.</p> <p>Justification: Clarity is required.</p>
response	<p>Partially accepted. The text has been revised.</p>
comment	<p>145 comment by: Helicopter Club of Great Britain</p> <p>Add</p> <p>2. Rotorcraft not being complex motor powered aircraft</p>
response	<p>Not agreed. The AC 43-13B has been developed to align with the general aviation needs mainly for airplanes. This means that the terms used (e.g. spar, ribs) are appropriate for GA airplanes repairs but could create some confusion if the applicability of the Standard Change would be extended to rotorcraft.</p>
comment	<p>172 comment by: Piaggio Aero Industries</p> <p>I do not agree in using the definition of “complex aircraft” to identify which airplanes are eligible to be repaired in accordance with this SR. I can’t see a relation between the number of turboprop engines, or number of pilots, and aircraft structural repair. See also general comment 173</p>
response	<p>Noted The Standard Repairs allow for a wide range of repairs. In the first phase Standard Repairs will be applicable to non-complex aircraft only. This might be changed in the second phase of this rulemaking activity.</p>



comment	176	comment by: <i>Federal Office of Civil Aviation FOCA</i>
	<p>p. 53; Standard Repairs CS-SR801a:</p> <p>Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3).</p>	
response	See the response to comment 2.	
comment	217	comment by: <i>European Private Helicopter Alliance</i>
	<p>Paragraph 2 Applicability / Eligibility</p> <p>Current text is: Aeroplanes not being complex motor-powered aircraft and any ELA 2 aircraft</p> <p>Suggested new text:</p> <p>Aircraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>or</p> <p>Aeroplanes and rotorcraft, not being complex motor-powered aircraft, and any ELA 2 aircraft</p> <p>Reason To include rotorcraft in Applicability / Eligibility</p>	
response	Refer to the response provided to comment 145.	
comment	223	comment by: <i>René Meier, Europe Air Sports</i>
	<p>CS-SR801a 6-Release to service</p> <p>A release to service in our view perfectly fits with the idea of Pilot-owner maintenance taking in account the operations of our members. We cannot see any reason not to allow a "Release to service" by the Pilot-owner if Part-M is observed and the repair is within the scope of Pilot-owner maintenance laid down in Part-M.</p> <p>Rationale: Sports and recreational aviation activities and aviators are well catered for by applying Pilot-owner maintenance.</p>	
response	Not accepted. Refer to the response to comment 2.	
comment	246	comment by: <i>new European Helicopter Association (EHA)</i>
	Appendix II	



	CS-SR801a, 2 – Applicability EHA propose to replace the word ‘aeroplane’ with the word ‘aircraft’.
response	Refer to the response provided to comment 145.
comment	316 comment by: <i>DGAC France</i> This standard repair should also apply to helicopters not being complex motor powered aircraft.
response	Refer to the response provided to comment 145.

3. Proposed amendments — 3.2. Draft Rules (Draft EASA Decisions) — 3.2.3. CS-STAN — SUBPART B — STANDARD REPAIRS — APPENDIX II — Standard Repair CS-SR802a p. 54

comment	8 comment by: <i>FFAé</i> The FAA AC 43-13 (and their translations) applies also for wooden structures for sailplanes and powered saiplanes
response	Noted. It is possible to use AC43.13 for wooden structures for sailplanes and powered sailplanes referring to SR801.
comment	88 comment by: <i>Luftfahrt-Bundesamt</i> CS-SR802a Repair of Sailplanes, Powered Sailplanes, LSA and VLA Maintenance and/or Repair Manual of the sailplane manufacturer should be mentioned first place. Standard Repair CS-SR802a (Page 54): a) For clarification reason the FAA AC 43 should be listed as well. b) The name of the document called "Werkstattpraxis" should be completed ("Werkstattpraxis für den Bau von Gleit- und Segelflugzeugen"). c) In General a clear documentation reference (including the applicable issue(s)) will make the maintenance data unambiguous and it will help to indicate a new issue of those data by revision of CS-STAN. Saying this it must be considered, that in most cases previous issues of those generic maintenance data will remain applicable and should be considered as applicable maintenance data as well. Consequently simply referencing to "the latest available versions" (acc. CS-STAN.30) might not be a contribution to alleviations for General Aviation.
response	Repair data contained in TC holder’s Repair Manual can be directly used by persons embodying repairs and it is not a Standard Repair. There is no need to mention them. a) Repairs in accordance with AC 43.13 are already contemplated in SR801. b) Name of the reference is completed. c) It should not be the aim to work with an out-of-date reference. Therefore, the latest revision of an acceptable document should be used (and declared in Form 123) when



performing the Standard Repair.

comment

124

comment by: UK CAA

Page No: 54

Paragraph No: CS-SR802a

Comment: The UK CAA have a general concern that a good level of design understanding is required in order to correctly apply FAA AC 43-13, and to know when it is appropriate to use it and when it is not. For example:

1. Experience has shown that certain data for blind fastener substitutions re. rivet/joint strength in the FAA AC are not conservative for thinner gauge materials when case by case comparisons are made against the FAA MMPDS data.
2. Persons without a design or stress background are unlikely to be aware of the potential adverse effects when proposing materials and fastener substitutions solely based on the FAA AC 43-13.
3. "Fatigue" and "Flutter" aspects in the FAA AC 43-13: Whilst there are some repair precautions and design good practices included, (and latter includes cross reference to FAA AC 23.629-1A Means of Compliance with Section 23.629, "Flutter"), it is thought that the repair of primary structure or critical fatigue or aero elastically prone parts should tend to escalate the repair to major and typically require support from OEM and FAA/Agency approval etc., particularly if there is no existing OEM data to support such repair, (e.g. AMM's or other approved repair data).

Justification: Clarity is required.

response

It is assumed the comment refers to SR801a.

1. Noted. The use of blind rivets is addressed in AC 43.13-1B Change 1 as follows: "CAUTION: For sheet metal repairs to airframe, the use of blind rivets must be authorized by the airframe manufacturer or approved by a representative of the FAA." Through revised CS STAN.40, this design restriction applies to CS-SR 801a.
2. Partially accepted. Revised limitations for the standard repair SR801a require that persons using the AC 43.13-1B Change 1 have sufficient knowledge. The risk associated to the potential for incorrect material selection on standard repairs is considered low.
3. Accepted. Limitations relating to damage tolerant certified structure and uncertainty over compliance with the applicable requirements have been introduced.

comment

125

comment by: UK CAA

Page No: 54

Paragraph No: CS-SR802a, paragraph 3 Acceptable methods, techniques and practices

Comment: CS-SR802a makes reference to German Language documents, yet the recognised language for aircraft engineering across all member states is English. The documents listed should also be referenced in English, and it should be ensured that



response	<p>English versions are available.</p> <p>Furthermore they should include dates and issue status; and be reviewed to confirm the applicability of old data to more modern materials</p> <p>Justification: Use of documentation in English is the standardised approach with other EASA publications. Clarity and transparency of most up to date reference material.</p> <p>Not accepted. The Agency uses English in its official publication. However, it lacks resources to translate these documents into other languages. If a document, containing suitable data, is available in other language(s), it will be referenced in this CS-STAN.</p>
comment	<p>177 comment by: <i>Federal Office of Civil Aviation FOCA</i></p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>p. 54 Standard Repairs CS-SR802a: Section 6: It should be stated which licence is required to release the aircraft to service (B1/B2/B3).</p> </div>
response	<p>See the response to comment 2.</p>
comment	<p>224 comment by: <i>René Meier, Europe Air Sports</i></p> <p>CS-SR802a 6-Release to service</p> <p>We think the Pilot-owner maintenance idea perfectly covers the needs of a responsible release to service. It should be allowed. We cannot see any reason not to allow a "Release to service" by the Pilot-owner if Part-M is observed and the repair is within the scope of Pilot-owner maintenance laid down in Part-M</p> <p>Rationale: The Pilot-owner maintenance concept is risk-based. It brings adequately safe results, the responsibilities for safe flights are well covered by the airports aviators.</p>
response	<p>See the response to comment 2.</p>
comment	<p>313 comment by: <i>DGAC France</i></p> <p>In order to be consistent to the applicability of standard changes, it is proposed to replace §2 as follows: « Sailplanes and Powered Sailplanes as defined in ELA1 or ELA2, LSA and VLA.”</p>
response	<p>Agreed. The text has been amended accordingly.</p>
comment	<p>314 comment by: <i>DGAC France</i></p> <p>In §3, specific documents are referenced to. It should be specified which date and revision are accepted and where it is possible to download them or be provided with.</p>



response Agreed. It is already stated that latest revisions apply unless otherwise indicated. A link to the referred document is provided.

comment 368 comment by: *European Sailplane Manufacturers*

It should read "Kleine Fiberglas Flugzeug Flickfibel" (only on "s" in "Fiberglas")

The European sailplane manufacturers have the following literature sources which could be recommended:

"Grundlagen der Luftfahrzeugtechnik in Theorie und Praxis", Band II Verlag TÜV Rheinland GmbH, ISBN Nr.: 3-88585-001-X

"Grundlagen der Luftfahrzeugtechnik in Theorie und Praxis", Band V: Segelflugzeuge und Motorsegler, Verlag TÜV Rheinland GmbH, ISBN Nr.:3-8249-0351-2

R.C. Stafford-Allen „Standard Repair to Gliders“, published by British Gliding Association

"Kleine Fiberglas-Flugzeug-Flickfibel", von Ursula Hänle (Eigenverlag)

Seminardruck "Faserverbundwerkstoffe im Segelflugzeugbau", Fortbildungsseminar des DAeC

response Noted. The typo has been corrected.
Other proposed references will be considered in phase 2 of this rulemaking activity.

comment 375 comment by: *BGA*

Standard Repair CS-SR801a (page 54)
Subject: Aircraft Repair according to FAA Advisory Circular AC 43.13-1B
1 – Purpose
This Standard Repair is issued to allow the use of FAA Advisory Circular AC 43.13-1B for repair of aircraft structure in metal, composite and wood construction.

In all cases where the aircraft (eg sailplane towing aircraft) has effective type supported and data available that should be used. This document implies a repairer can ignore factory repairs and recommendations and choose a repair scheme in AC43, which for composite and none-spruce wood repairs offers low quality repair schemes.

response Not agreed. The Standard Repair cannot be in conflict with TC Holders' data. A new paragraph has been added in the 'Subpart A – General' of CS-STAN for clarification.

4. Regulatory Impact Assessment (RIA)

p. 55-57

comment 9 comment by: *INAER*

In my opinion, a further safety impact analysis of the aircraft flight manual supplements, the interface document with the flight crew, should be done.



	<p>The instructions included in the CS-STAN to prepare the AFMS are done to people who knows how to build an AFMS but I have my reasonable doubts that "any legal or natural person responsible for the embodiment of a change or a repair" (e.g. a Part M Subpart F or a technician) knows how to.</p> <p>My suggestion is to improve the instructions to build the AFMS (e.g. what it can be stated and what not, etc) or the revisions to AFM should follow the usual approval process through EASA or a DOA with such privilege.</p>
response	<p>Not accepted. Most of the Standard Changes will not require changes to the approved sections of AFM (they would be classified as Minor Change, if not treated as Standard Change), since the AFM changes might only have limitations for the installed equipment itself, not affecting the functionality of the aircraft.</p>
comment	<p>91 comment by: <i>Niklas Larsson - Member of GA Task Force, representing AOPA Sweden and IAOPA Europe</i></p> <p>The flight time statistics in most countries are going down and the costs and paperwork has increased exponentially the last decade. We are glad to see that the Agency has indeed identified some of the issues that the GA Community are struggling with, the regulatory burden is a big part of this.</p> <p>Many aircrafts fly around with the same equipment they left the factory with, 40-50 years ago. It is most welcome that many of them now have an affordable chance to upgrade their systems. But unfortunately this NPA does not reach all the way. The limitations and considerations that has been required in many of these subjects are just killing it. To start it all by saying that this will not be allowed for use as a primary means of navigation is a hard blow to all those users that were hoping to make that upgrade. It is clear that there is no risk based approach behind this limitation. To reduce the regulatory burden and illegal practices, this is of outmost importance and must be changed. Otherwise it will not have the desired effect on the community. The installations will be done by professionals, at approved facilities and with proven equipment. The risk of flying without the necessary equipment is a far greater risk than using this kind of installation as a primary navigation. It greatly enhances the situational awareness, the lack of which is a common cause for serious accidents on all levels of aviation.</p> <p>The Agency has not taken into account the new and modern avionics with integrated systems for several of the functions listed in this NPA. One device often include VHF, VOR and moving map system. The Agency's view on this has not been disclosed in the rule amendment. These devices are thoroughly tested and raises the situational awareness a lot. Therefore it is very important that the Agency clearly specifies that they will allow these multi-function devices to be installed for every aircraft under this NPA's applicability. This will decrease the regulatory burden, increase the situational awareness and have a very positive impact on General Aviation.</p> <p>The Agency has implemented a lot of rules lately and there is indeed a high regulatory burden that suffocates a big part of the GA sector today. At the same time we have some sectors of GA that is not regulated by the Agency and they are as prosperous as ever. They do these kind of installations all the time, outside of approved facilities, and we do not see them falling out of the sky due to technical problems. The statistics are similar for both sectors. This is something the Agency needs to learn from and take into consideration</p>



	<p>when they make their risk assessments.</p> <p>We all want the same; a prosperous GA sector and a continuously safe environment for its pilots and passengers. If this NPA is passed "as is", e.g. without true and proportional risk based consideration in every step, then its intention towards real GA-safety, simpler and better rules is lost.</p>
Response	<p>Noted. The Agency (and many stakeholders) considers the new Standard Change process an important step forward for reducing the burden for General Aviation. In order to adequately manage potential risks being introduced with this new concept, some stakeholders have requested fewer limitations in its applicability. On the contrary some other stakeholders have proposed the introduction of more mitigating measures (limitations) some of which the Agency has not incorporated in the final text. It is foreseen a second phase of this rulemaking activity where some limitations could be lifted or applicability of certain Standard Changes/Repairs extended.</p>
comment	<p>240 comment by: ECOGAS</p> <p>In most of the CS's is under point 3. "Acceptable methods, technics and practices" the definition – The equipment has the same functionality and is compatible with the existing installation –</p> <p>This is a critical point, means EASA that everything in new and old equipment / system should be the same or is it possible to have some changes and which one?</p> <p>A simplification will not be in the position to be reached with this NPA, to a judgement the knowledge is urgently required to the NPA for the organisation of the Standard Changes and Standard Repairs.</p> <p>The possibilities of the mutual recognition of the methods between EASA and FAA should be basis of this NPA.</p>
response	<p>When the sentence 'The equipment has the same functionality and is compatible with the existing installation' is used, the equipment being installed should be capable to provide the same functionality to the one being replaced using the same installation. The equipment itself can be a different one.</p> <p>With the introduction of CS-STAN many of the FAA AC43.13 described changes can be incorporated into EU registered aircraft, however, direct use of AC43.13 (not supported by a Standard Change) is not possible today.</p>
comment	<p>253 comment by: ECOGAS/SVFB/SAMA</p> <p>In most CS'under point 3. "Acceptable methods, technics and practices" is the definition – The equipment has the same functionality and is compatible with the existing installation –</p> <p>Does this mean that everything in new and old equipment / system should be the same or is it possible to have some changes and which one?</p> <p>The full and final effect of the NPA can only be assessed after the list under page 4/58 is expanded. The goal would be as initially stated, as much freedom in performing standard changes as repairs as enjoyed by FAA repair stations under their regulation.</p>



	<p>In this respect limiting certain chapters to LSA1 or LSA2 makes no sense: the MRO should be entitled to use this NPA and the much needed following out of Phase II for all aircraft not used in mass transport.</p> <p>There is a central rule for all aircraft mechanics: perform only what you are competent to do and if this is followed, problems will be avoided.</p>
response	<p>When the sentence 'The equipment has the same functionality and is compatible with the existing installation' is used, the equipment being installed should be capable to provide the same functionality to the one being replaced using the same installation. The equipment itself can be a different one.</p> <p>It is foreseen a second phase of this rulemaking activity where some limitations could be lifted or applicability of certain Standard Changes/Repairs extended, while some proposal for new Standard Changes will also be considered.</p>



Appendix A - Attachments

 [GAMA2015-02 EASA NPA 2014-24, CS-STAN.pdf](#)

Attachment #1 to comment [#249](#)

 [Response Certification Specifications for Standard Changes & Standard Repairs Phase 1.pdf](#)

Attachment #2 to comment [#370](#)

 [EASA SIB 2011-01R2 11 \(2\).pdf](#)

Attachment #3 to comment [#31](#)

